The Future of Music Therapy for Persons with Dementia

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ENVISIONING THE FUTURE OF MUSIC THERAPY

Edited by Cheryl Dileo

Envisioning the Future of Music Therapy

DEDICATION

This book is dedicated to the past, present and future music therapy students of the International Consortium of Research Universities:

Anglia Ruskin University, U.K.
Aalborg University, Denmark
Leuven University, Belgium
Norwegian Academy of Music, Norway
Temple University, USA
University of Bergen, Norway
University of Jyvaskyla, Finland
University of Melbourne, Australia
University of Oslo, Norway

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POSTLUDE

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Prelude
Introduction

Cheryl Dileo

On April 10, 2015, an international symposium, representing the 7th conference of the Arts and Quality of Life Research Center of the Boyer College of Music and Dance/Center for the Arts was held at Temple University. It was entitled: *Envisioning the Future of Music Therapy.* The symposium was planned to celebrate several important milestones:

The 40th Anniversary of Music Therapy Courses at Temple University

The 10th Anniversary of the Arts and Quality of Life Research Center

The 15th Anniversary of the Establishment of the PhD Program

in Music Therapy

While embracing the past, the theme of the conference was intended to stimulate thinking about the future of music therapy not only in the United States, but also internationally. To this end, an invitation was extended to members of the Consortium of Music Therapy Research Universities, of which Temple is a member. Fourteen music therapy faculty members from the Consortium agreed to attend and present papers: Dr. Denise Grocke (Consortium Chair) and Dr. Felicity Baker (University of Melbourne, Australia); Dr. Helen Odell-Miller, Dr. Amelia Oldfield and Dr. Jorg Fachner (Anglia-Ruskin University (U.K.); Dr. Hanne Mette Ridder, Dr. Inge Nygaard Pedersen and Dr. Niels Hanibal (Aalborg University, Denmark), Dr, Claire Ghetti (University of Bergen, Norway); Dr. Jos De Backer (Leuven University College LUCA, Belgium); Dr. Jaakko Erkkilä (University of Jyvaskyla, Finland); Dr, Even Ruud (University of Oslo, Norway); and Dr. Gro Trondalen and Dr. Karette Stensæth (Norwegian Academy of Music. Norway). Dr. Cheryl Dileo and Dr. Wendy Magee from Temple University also attended as presenters.

Each presenter was asked to prepare a short (20 minute) talk regarding how he or she envisioned the future of music therapy theory, practice and research in his or her particular area of expertise. These areas included specific clinical populations, music therapy methods, theory and technology. The clinical areas

represented included mental health, criminal justice, medicine, dementia, neuroscience and autism. Specific music therapy methods included songwriting, clinical improvisation and the Bonny Method of Guided Imagery and Music.

Presenters were asked to organize the material for their presentations as follows*: 1) Overview of current status of their topic (highlights of research, clinical practice and theory). 2) What they envision as the needs for the future to advance practice, research and theory in your particular area with rationale. 3) Specific recommendations for the future.*

Because of the uniqueness of an international symposium of this type being held in the United States as well as the uniqueness of its theme, it was decided that all presentations would be plenary in nature, i.e., all attendees could hear all presentations. The symposium was scheduled to take place in one day, thus, presentations needed to be no more than 20 minutes – indeed a challenge to organize a large amount of material into this short timeframe.

The symposium was open to students and professionals free of charge; attendees were also able to receive continuing education credits for participation.

Almost 400 individuals attended the symposium, representing 7 states. Almost 100 persons received continuing education credits for attending. The response to the symposium was overwhelmingly positive.

Following the symposium, the annual meeting for the consortium members was held in Cape May, NJ during which the presentations were discussed in more detail, and a plan for disseminating and publishing the papers presented was supported. Thus, this book was edited with the goal of having a document that would be accessible free of charge through the university websites of the members of the Consortium. A limited number of hard copies would be printed and distributed (at a nominal charge) through the Arts and Quality of Life Research Center, Temple University.

It is a privilege to have edited these outstanding papers from international leaders in the field of music therapy. The ideas contained in this book may well serve as valuable guidelines for advancing the field of music therapy in the future.

The contents of the book are presented in the same order as was done on the day of the symposium. This prelude and a postlude have been added by the current Editor.

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The Future of Music Therapy for Persons with Schizophrenia

Inge Nygaard Pedersen

Introduction

Approximately 1 % of the world´s population will develop schizophrenia[1] during their lifetime. This number is a bit larger for men than for women. The average life span is reduced by 12-15 years for people with schizophrenia. (caused by unhealthy life-styles, side effects from medication, suicide, etc.)

Research

Two Cochrane reviews concerning music therapy for schizophrenia have been published (Gold, Heldal, Dahle, & Wigram, 2005; Mössler, Chen, Heldal, & Gold, 2011). In both of these reviews, all included studies have examined the effects of music therapy as an add-on treatment to standard care. The results of the first Cochrane review (Gold, et al., 2005), which included only 4 studies, suggested that music therapy improves global state and may also improve mental state and life functioning, especially the negative symptoms, if a sufficient number of music therapy sessions are provided.

Results of the second review (Mössler, et al., 2011) which included 8 studies suggest that at least 20 sessions may be needed to reach clinically significant effects. This is consistent with significant dose-effect relationships found in Gold, Solli, Krüger, & Lie (2009) which indicated smaller effects of music therapy after 3-10 sessions and larger effects after 16-51 sessions.

Mössler, et al. (2011) suggest:

> There is evidence that music therapy, as an addition to standard care, can help people with schizophrenia improve their global state, negative symptoms, depression, anxiety, and social functioning over the short- to medium-term. Music therapy seems to address especially motivational,

[1] For diagnostic issues, see the Diagnostic and Statistical Manual of Mental Disorders, Schizophrenia defined by the American Psychiatric Association updated in 2013: http://dsm.psychiatryonline.org/doi/full/10.1176/appi.books.9780890425596.dsm02

> emotional and relational aspects, and helps patients reconnect to both intrapersonal and social resources. However, the effects of music therapy seem to depend heavily on the number of music therapy sessions, as well as the quality of the music therapy provided (special trained music therapists who are skilled in using adequate music therapy methods). To benefit from music therapy, it is important to participate in regular sessions over some time. Participants do not need musical skills, but a motivation to work actively within a music therapy process is important. (p. 23)

These same authors conclude: "Music therapy may be especially important for improving negative symptoms such as affective flattening and blunting, poor social relationships, and a general loss of interest and motivation. These symptoms seem to be specifically related to music therapy's strengths, but do not typically respond well to other treatment" (Mössler, et al., 2011, p. 23**).**

The potential for music therapy to reduce negative symptoms of schizophrenia has also been described in controlled studies (non-randomized). Pavlicevic, Trevarten & Janice (1994) have found that music therapy significantly raises the time the patient suffering from schizophrenia takes part in musical interaction compared to the control group. Another study has shown improved motivation, less passivity and a better ability for communication as a result of music therapy (Hayashi, Tanabe & Nakagawa, 2002).

A randomized controlled study has recently begun at the Music Therapy Research Clinic at Aalborg University Hospital's *Center for Schizophrenia* under the direction of the author. The study is interdisciplinary and involves both music therapists and medical doctors specialized in schizophrenia. The study focuses on music therapy as a treatment for negative symptoms in people suffering from schizophrenia using a blinded control group. Specifically, the participants will all be informed that they will take part in music therapy activities, but half of them will be randomized to a non-therapeutic, individual experience with an unknown, non-music therapist caregiver (instructed about music listening from playlists developed by a music therapist) for the same amount of time as individual music therapy sessions; during these sessions, they can socialize and listen to selected music. The study also includes a controlled rating procedure using PANNS (Positive and Negative Symptom Scale) and BNSS (Brief Negative Symptom Scale). Raters, blinded to group assignment, will rate both groups of participants after 15 and 25 sessions. There will be 120 participants from all regions in Denmark.

Music therapy is recommended as a part of standard care for people suffering from schizophrenia in national guidelines of Norway, Sweden and the U.K., but not Denmark. Thus, it is hoped that the results of this study will strengthen the evidence for music therapy with this population and pave the way for the inclusion of music therapy as part of standard treatment of schizophrenia in Denmark.

Clinical Practice

Group music therapy and schizophrenia

In group work, the influence of music therapy on negative symptoms has been documented by several Danish music therapists applying therapy-directed interplay (music playing) and songwriting (Jensen, 2011) or music listening groups (Lund & Fønsbo, 2011). Based on results of a questionnaire used to gather data from participants in music therapy, Jensen found that both methods (therapy-directed interplay and song writing) improved social engagement and presence. Comments from participants, such as: "I could forget about myself," "I can better concentrate," and "the music makes the inner voices disappear" illustrate the effects of music therapy (Jensen 2011, p. 120-21). Also modified GIM in groups has been applied by Moe (2000, 2002) with positive results, thus helping participants to benefit from restitutional factors of the treatment.

Individual music therapy and schizophrenia

In individual music therapy treatment with persons with schizophrenia, an issue for music therapists concerns the timing of when to be present with and when to be distant from the patient. Four phases have been identified in this process. 1). At first the therapist is consciously mirroring and imitating the music of the patient to create a safe place for the patient to stay isolated and at the same time to be in contact with the therapist. 2). The music therapist gradually complements the music of the patient by varying the structure of the music, and at the same time staying in the role of accompanying the patient. This part can support the patient to start varying his/her often monotonous music. 3). The music therapist more provocatively creates musical contrasts that differ from the music of the patient, without any demands on the patient to follow. This consciously-directed progression of the therapist can pave the way for real interplay between the two partners. 4). New musical ideas can emerge and more flexibility can be present in the interplay. When timed appropriately, this progression can create greater autonomy and more creative interplay between client and therapist. (De Backer 2004; Jensen, 1999; John, 1995; Lindvang 1998).

Another music therapy technique described in detail concerns the therapist's continuing to repeat one musical activity, such as a single rhythm or a certain way of simple performance, until a mental space emerges inside the patient where he/she can internally hear and remember the music and reduce depersonalisation, one of the symptoms often present in schizophrenia. (Pedersen, 1999).

A common issue in describing treatment progression in music therapy with people suffering from schizophrenia is the therapist's awareness of and sensitivity to the patient's countertransferential experiences and reactions. These allow a means for the therapist to be better informed about the depth of the suffering of the patient, and also provide a way for the therapist to better meet the patient at the level of his/her suffering (De Backer 2004; Jensen 1999; Lindvang 1998, 2005; Odell-Miller 2006; Pedersen 1999, 2006).

Why Does Music Therapy Work?

Based on experiences from my own clinical practice and from studying case material, qualitative studies and a series of Ph.D. dissertations from Aalborg University (Moe,2000; De Backer, 2004; Odell-Miller, 2006; Pedersen,2006) and the University of Bergen (Solli, 2014), I have found some common answers as to why music therapy works. From these sources I have identified two perspectives on music therapy with people suffering from schizophrenia: the first concerning the possible positions of the music therapist and the second, concerning the function of the music (an elaboration of Odell-Miller's dissertation from 2006).

So, to answer the question: "Why does music therapy work for patients suffering from schizophrenia?" from the first perspective (possible positions of the therapist), I can provide several possible explanations.

*Awareness of the therapist concerning the timing of varying distance and proximity in the therapist-patient relationship

*Awareness of the therapist in following the expression of the patient and at the right time, introducing small variations in the music

*The therapist's support, ability to contain, and ability to be strategic and challenging while also understanding the phases of the process

*Long-term repetitions of simple musical activities in order to gradually develop a mental space within the patient

*Meeting the patient while behaving as being present in different ages at the same time

*Encouraging the patient to be active in music therapy and to listen sensitively to the patients at a level where they feel as if they are being heard and understood

Answering the same question from above from the second perspective (the function of the music) I can provide several possible explanations

-Rhythm can help poor 'connections with the body' and stabilize movement

-Singing composed songs provides structure and safety, with some affect possible using the voice, but without pressure on self-expression.

-The use of music may help the individual remember events and provide an aesthetic component in the midst of chaos.

-Free improvisation allows for natural structures within music to provide a containing function.

-Free improvisation mirrors and clarifies the relational contact and changes in the contact between the therapist and patient.

Theory on the Dynamic in Relationships with People Suffering from Schizophrenia

As a means of describing theory regarding the dynamics of relational-based work with people suffering from schizophrenia, I want to present a common experience from several cases in my own practice wherein the treatment process has developed in phases as they relate to the possible position of the therapist. In a case study from 1999, I, as an example, alternated between taking the role initially of a helping ego during the first phase of music therapy. In the second phase, my function as a music therapist became very much one of holding, and in the third phase, I could start the separation process and move between being the initiator and being the accompanist in the musical interaction. So in the first two phases, I remained in a sensitive, listening perspective such as that of a helping ego and a holding position. In the third phase, I could let go of this locked position of listening and alternate more playfully between listening to myself and listening to the patient and/or listening to myself listening to the patient (Pedersen 1997, 1999, 2006).

This understanding is theoretically underpinned by a Danish psychiatrist, Lars Thorgaard, who has written five books on relational treatment in psychiatry. In volume III (2006) he discusses three phases in the recovery process of people suffering from psychosis and schizophrenia; I can relate to these three phases in my own clinical work with people suffering from schizophrenia:

1. The patient is separating certain parts of the personality (splitting off), so some part has to be held back in relationship to others, as well as the therapist. The possible position of the therapist is to be containing and acting, i.e., being the helping ego.

2. The patient succeeds in transforming the pathological trauma to common human misery when he/she is able to express despair and is

ready to meet the therapist through traumatic aspects of the patient´s lifeworld that were not accepted previously. The possible position of the therapist is to be empathic, exploring and challenging – holding the anxiety for both parts.

3. The illness comes to an end, and a healthier state begins when the patient gains an awareness of his/her own weaknesses; this makes it feasible for him/her to take hold of some possibilities in life through these weaknesses. He/she can look through the scar in the pathology, and this can provide an insight that eliminates or regulates the pathology itself. Opening to spiritual experiences can occur! The possible position for the therapist is to be encouraging and confirming. A recovery perspective is possible.

It is important to note that, in understanding the dynamic in this relationship, it is almost impossible to start in phase 3 before phases 1 and 2 are worked and lived through (Thorgaard, 2006, p 200).

Should Music Therapy Focus on Symptoms, Resources – or Both?

Two ways of understanding the healing processes of people suffering from schizophrenia have been highlighted in Europe during the last few years. The first, the *resource-oriented focus,* places a strong emphasis on patients´ strengths and resources and on recovery processes and empowerment theories as the primary focus for music therapy; this is also known as the salutogenetic perspective on practice, This perspective was first developed by the medical-sociologist, Aaron Antonowsky (2000) and is concerned with a movement away from the illness and towards health. Collaboration with and the experience of the patient/service user is at the forefront of treatment.

A manual has been developed for providing resource-oriented music therapy for mental health issues, including low motivation; the clinical issues addressed in this manual are also relevant to the negative symptoms of people suffering from schizophrenia. In Resource-Oriented music therapy, the therapist focuses primarily on the patient´s strengths and resources. (Rolvsjord, Gold, & Stige, 2005). This core attitude and approach to music therapy is certainly typical in music therapy practice around the world, regardless of the phase of the patient's illness; it is also used with persons suffering from schizophrenia. For Antonowsky himself, a salutogenetic perspective was meant as a complementary understanding of pathology – not as an alternative to it.

A second, salient focus for clinical practice has been *psychodynamic* based on a pathological perspective, wherein the primary focus of music therapy is on the vulnerabilities and problems of the patients. Accordingly, goals include symptom reduction, facilitating insight regarding pathologic traits and lifestyle, and supporting the acquisition of a personal identity as a whole human being even while suffering from a mental illness. A mutual negotiation between the therapist and patient is at the forefront of the process. This perspective, when applied

without paying attention to the phase of the patient´s illness, can underestimate the importance of the therapist's role as bearing hope for the healing process of the patient. This approach is also often offered as a core attitude and approach no matter the phase of illness.

Personally, I think a future imperative for music therapists, especially when working with people suffering from schizophrenia, is to ensure that they are trained to work competently in both resource-oriented and psychodynamic ways depending on the phase of the patient's illness. I have written about this issue in the *Nordic Journal of Music Therapy* (Pedersen, 2014).

I also think that, as music therapists, we must work to understand the position of the therapist in the music therapy processes. In my Ph.D. thesis on countertransference in music therapy in mental health, an important finding was that music improvisations promote the process of making countertransferential reactions conscious, and that this process can provide a tool for the therapist to know when to make a change in his/her position with regard to the patient. Significant as well is the issue of phase-specific treatment, wherein the therapist changes positions in different phases of the work according to the developing processes of the patient. These changes can include both pathological and a salutogenetic perspectives. Thus, a change in the position is not led by a certain overall theoretical orientation, rather, by the development and need of the patient.

Specific Recommendations for the Future of Music Therapy for People Suffering from Schizophrenia

Based on the research, theory and clinical practice described in this chapter, I have the following recommendations for the future of music therapy with this population:

*Many more large RCT rigorously designed and implemented studies are needed, i.e., studies that use guidelines, such as the CONSORT statement (Moher 2011) and which are considered appropriate for inclusion into meta-reviews.

*Many more qualitative studies that focus on how and why music therapy has an effect are needed. There is a need for the development of therapy manuals concerning different diagnoses of the mental health population that incorporate an integrated perspective (both pathological and salutogenetic perspectives)

*Phase-specific music therapy practice based on the individual needs of the patient should be better understood; this should involve an integrated approach and consider timing as an essential element

*Many more full-time music therapy training programs need to be developed wherein students can specialize in certain clinical practice areas, including schizophrenia.

*There needs to be a greater cooperation between music therapists and

neurobiologists to uncover changes in the brain during music therapy treatment

*A biopsychosocial model of understanding schizophrenia with a strong focus on the vulnerability–stress balance needs to be acquired.

Conclusion

As music therapists, it is essential that we identify ourselves as bridge builders, i.e., building connections between natural science and humanistic science and between research rigor and clinical flexibility. My personal preference is building bridges between the pathological and salutogenetic perspectives and applying a phase-specific and integrative approach to practice in a way that can preserve treatment fidelity on both sides of the bridge.

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3

The Future of Music Therapy for Persons with Depression

Jaakko Erkkilä

Introduction

Depression is a psychiatric disorder that has had an increased focus recently in music therapy research. As in many other Western countries, the prevalence of depression in Finland is high. Because of funding from the European Union[2] and the Academy of Finland,[3] it became possible to conduct the first Finnish randomized controlled trial (RCT) in clinical music therapy. Thus, depression was selected as the clinical condition studied in this trial, not only because of its prevalence, but also because of promising results of previous RCTs (see Maratos, Gold, Wang, & Crawford, 2008). Furthermore, the treatment model called "Improvisational Psychodynamic Music Therapy"[4] (Erkkilä, Ala-Ruona, Punkanen, & Fachner, 2012), developed at the Music Therapy Research and Training Clinic at the University of Jyväskylä, Finland, appeared to be a suitable clinical model for the treatment of depression – with some adjustment and elaboration.

Although the positive effects of music therapy for depression was demonstrated in previous studies, little was known about the effect of specific music therapy approaches or techniques. In addition, many of the previous studies had methodological shortcomings. Thus, we decided to focus only on the effects of one music therapy approach, clinical improvisation, on outcomes in working age adults (18-50 years old), the target group, which is under-researched in this context. Our RCT "Individual Music Therapy for Depression" was published in 2011 (Erkkilä, et al., 2011); its main findings indicated that music therapy plus standard care, when compared with standard care only, significantly reduced depression and anxiety, improved general functioning, and caused a better treatment response in relation to depression than standard care alone. In the present chapter, research activities, clinical practice and theory related to our clinical model subsequent to the publication of this study is described.

[2] The project was called "Tuning the Brain for Music" under NEST program (New and Emerging Science and Technology) of the European Commission (2006-2009).
[3] Centre of Excellence in interdisciplinary music research (2008-2013)
[4] The current name of the model is Improvisational Integrative Music Therapy

Current Status of Improvisational Integrative Music Therapy (IIMT)

Psychodynamic theory has had a strong influence on Finnish music therapy. This is due in part to the long tradition of music therapy in psychiatric treatment contexts, where psychodynamic theory has had an important role. However, music therapy clinicians and theorists often have modified their theoretical thinking according to the various needs of their clients as well as the unique qualities of music, which sometimes are difficult to harness within a single theory. Rather than "psychodynamic," many clinicians have identified their theoretical framework as "eclectic," for example, as a way to describe their basic attitude towards theoretical flexibility.

An example of such theoretical flexibility can be seen in the clinical model of our depression study. Instead of the typical emphasis on the client's psychohistory and past, we encouraged our research clinicians to focus on the "here and now" when appropriate. In addition, we encouraged the clinicians to utilize resource-oriented methods with those clients who had obvious problems in recognizing their own resources and capacity due to long-term illness. On the other hand, many clients wanted to deal with their childhood, with their relationships to their family of origin, as well as with conflicts and traumas that they connected to the illness. Thus, there was room for a psychodynamic approach as well.

The concept of integrative, instead of psychodynamic, was a welcome change or "paradigm shift" for describing something we were already doing. We also received extra support and training in the integrative psychotherapy framework from the Department of Psychology at the University of Jyväskylä (see Norcross & Goldfried, 2005). Integrative psychotherapy combines different theories and techniques according to the needs of the clients. The growth of integrative psychotherapy is based on RCT findings in psychotherapy which show that good effects cannot be explained by any single theoretical standpoint.

In Finland, due to health care practices and regulations as well as to some unfinished processes, establishing connections between music therapy and psychotherapy has been an ongoing strategy to raise the sometimes unclear professional status of music therapy. Of course, music psychotherapy is only one part of the discipline of music therapy, but it provides a pathway for potential recognition similar to that enjoyed by psychotherapists. It takes 4 additional years of study in Finland for a music therapist to achieve the designation as a music psychotherapist; the Faculty for Social Sciences has now accepted the curriculum for a new track under integrative psychotherapy training called "Integrative Improvisational Music Therapy (IIMT)." We look forward to getting this new track established, and we believe that if early-stage difficulties can be overcome, the IIMT will grow and develop well in terms of theory, research and clinical practice (methods, new client populations, etc.).

IIMT Practice Challenges

The relationship between music and talking

One of the principles of our IIMT model is that it is a combination of improvising and talking. According to Bruscia's definition (1998), the model is perhaps closest to "music in therapy." Sometimes, and with some clients, music may be more present and salient. But it may also be the other way around so that long conversations, possibly originating from musical shared experiences, take place. The salience of music may also vary within a single music therapy process and be, for instance, very salient at the beginning of the process and later yielding to more space for talking once the client is better capable of verbally addressing the issues connected to the illness. In training, there is a need to coach the students regarding how to meet different clients with different needs, expectations, qualities and attitudes. In particular, the shifts from music to talking and vice versa are challenging, not only to the client, but to the therapist as well. This is mainly because musical expression and interaction often represent deeper and different states of consciousness (Erkkilä, et al., 2012) than talking, the latter being typically a more controlled form of expression and interaction.

Learning to manage different phases of a therapeutic process is a challenge as well. In particular, the beginning of the IIMT process requires a specific attitude and sensitivity from the therapist; for many clients, it may be their first time in music therapy, and some clients may have had no musical background at all. Free improvisation, the starting point of IIMT, has many advantages especially when the process progresses, but it may be very challenging for a clinician to manage at the beginning.

Another issue with IIMT is also how it works and how it must be adjusted when working with clients from different diagnostic populations. Currently, we know relatively well how the model works with people with depression, anxiety and undefined stress and anxiety-related problems. But we do not have much experience in knowing how IIMT works with people with schizophrenia, schizophrenia-like disorders or personality disorders. Here, collaboration with other clinics internationally is important to make necessary adjustments to the method.

Music as a therapeutic informant

In IIMT, the meaning of music, as an essential part of the therapeutic process and as an essential source of clinically-relevant information, is important. Therefore, we aim to develop ways of looking at improvisation from an analytical point of view by utilizing methods that are as objective as possible to gain a better understanding of something that is highly abstract in nature.

At the moment we are employing two approaches. The first one is behavioral and is based on computational analysis of clinical improvisations, first recorded and stored on the computer's hard disk. The second one, for which we have less experience, is physiological measuring. The measure we are using is heart rate variability (HRV). Both the therapist and the client wear HRV belts during music therapy sessions and, thus, it becomes possible to look at the effect

of different activities, such as improvising, within a session as well as to compare HRV between improvisers.

For analyzing music, we typically employ the Music Therapy Toolbox (MTTB), which has been developed at our Department (see Erkkilä, Ala-Ruona, & Lartillot, 2014). The strength of the MTTB method is in providing objective information on musical behavior even as visualization[5] (see figures 1 and 2).

Figure 1

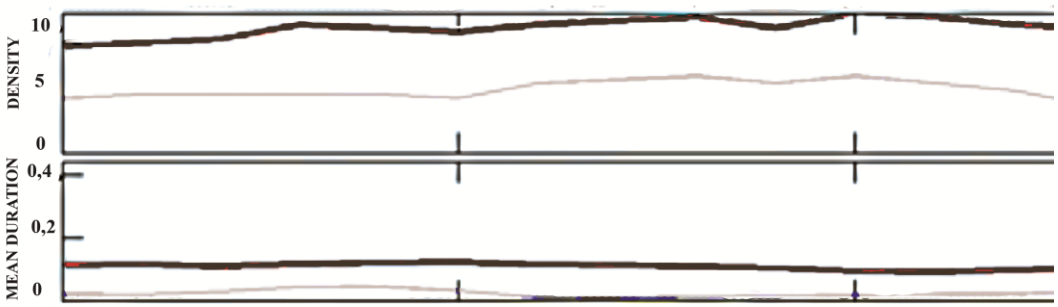

Figure 1. An example of MTTB visualization based on two musical features: density and mean duration. The darker line represents the client's musical behavior, the lighter line therapist's. In this excerpt, we can see that the client's music is denser with longer note duration. The horizontal axis is based on time, this excerpt being some 23 sec long.

Figure 2

	A	B	C	D	E	F	G	H	I	J	K	L
1	parameters	sesno	clientno	itype	resp	subject	av_dens	var_dens	av_dur	var_dur	av_meanp	var_meanp
2	0201250408a_JE,mid	1	2	1	1	1	8,561	3,564348	0,311366	0,000836	70,260747	7,495538
3	0201250408a_JE,mid	1	2	1	1	2	1,983	0,19829	0,38749	0,001369	60,108331	11,958862
4	2202250608c,mid	2	22	1	2	1	0,960	0,067606	0,403434	0	62,84252	10,139292
5	2202250608c,mid	2	22	1	2	2	2,470	0,216022	0,392485	0,00044	54,813399	5,656302
6	2203010708,mid	3	22	1	2	1	1,218	0,154283	0,403164	0	64,202164	13,918638
7	2203010708,mid	3	22	1	2	2	1,604	1,423676	0,392239	0,000458	61,167439	66,151857
8	2205160708b,mid	5	22	1	2	1	2,592	1,3639	0,382922	0,001683	54,049248	11,818341
9	2205160708b,mid	5	22	1	2	2	5,497	10,347335	0,352414	0,000968	58,280507	24,316079
10	22090508b,mid	9	22	1	2	1	1,142	0,250793	0,398333	0,000374	65,064869	13,278896
11	22090508b,mid	9	22	1	2	2	1,185	0,603646	0,401946	0,000065	60,718785	36,668437
12	2210060808a,mid	10	22	1	2	1	2,260	0,801131	0,389886	0,001158	55,788677	3,124091
13	2210060808a.mid	10	22	1	2	2	1.915	1.6619	0.385891	0.001079	57.099818	28.349589

Figure 2. An example of a data matrix created by the MTTB. The number of improvisations (see column A) can be presented on a data sheet for further statistical analysis. Each of the columns (from column C on) represents a musical feature as mean, variance or standard deviation. The user can manually add columns for other relevant information, such as session number, client identification number, etc. according to the needs of the research**.**

[5] A kind of a graphic notation including musical behavior of both of the improvisers as various, selectable musical features. From the point of view of research, the visualization mainly supports amicroanalytic, qualitative approach.

Through the MTTB method, it is possible to analyze a number of improvisations and run complex statistical operations. This, in principle, makes possible comparisons within a clinical group based on certain sub-group variables, such as severity of illness and so on. For instance, we found that the severity of developmental disability causes certain musical behaviors that are generalizable across populations (see Luck, et al., 2006). With this method, it is also possible to study the effects of illness on musical behavior between diagnostic groups, such as people with depression and people with personality disorders. However, this kind of research would require a multi-site collaboration and the creation of consistent standards between the sites in terms of data collection, musical instruments employed, clinical methodology and "thinking," as well as various aspects of analysis.

An even bigger challenge for the entire music therapy community is understanding the meaning of musical behavior from psychological and/or physiological perspectives. There are various questions to be answered, such as how an illness affects musical behavior in general, whether the process of recovery can be detected in one's musical behavior, or whether there are diagnosis-specific patterns in musical behavior in the population. With regard to depression, we hope to be able to answer these questions, at least in part, in the near future.

From an HRV analysis perspective, it will be interesting to see how the act of clinical improvisation is or is not comparable to other music therapy-related or everyday activities. HRV analysis is widely used for investigating issues, such as quality of sleep, stress levels, relaxation, etc. If we believe that clinical improvisation is a powerful therapeutic method that enables the investigation of deep mental processes not easily accessible through other techniques, HRV analysis might tell something about the uniqueness of improvisation. Here, the basic assumption perhaps for many clinicians is that clinical improvisation frees and relaxes the mind in a specific way, thus enabling a spontaneous freeing of emotional experiences and images to be further analyzed and interpreted.

In a pilot study, conducted by our Ph.D. student, Olivier Brabant, we found something very interesting about clinical improvisation and HRV. The study participant was a university student with no specific diagnosis, but who was suffering from stress-related problems which occasionally disturbed her studies and everyday life in general. She was not very expressive verbally, especially at the beginning of the therapy process (the therapy process consisted of 11 sessions), but she typically had long improvisations with her therapist (they played mainly xylophone-like instruments). What was interesting, if not surprising, were her HRV results while improvising.[6] First, her heart rate was different and clearly salient from all the other music activities within the session, and second, it appeared that her stress levels were highest while improvising.[7]

That clinical improvisation can be stressful and anxious for the client is perhaps a paradoxical finding. It is, of course, possible that something may be

[6] Here I only refer to one session from the beginning of the process

[7] Heart rate variability typically is lower in a stressful situation, which was the case with the client when she improvised

wrong with the overall management of the clinical session by the therapist, and the therapist perhaps has not been able to ensure adequate safety for working improvisationally. Perhaps the working alliance has not yet been formed. But, it may also be so that our conception of the effects of clinical improvisation is fundamentally wrong. What if the power of clinical improvisation is – at least sometimes – that it forces the client into unpleasant areas that are emotionally and even physically stressful and anxious? This particular client became more emotionally and verbally expressive later on in her therapy process. She also started to talk about the images and emotions that clinical improvisation triggered, although it was difficult for her to talk after improvising at the beginning of the process (and at the time of the HRV session mentioned above).

So, it was necessary to conclude that music therapy possibly, and clinical improvisation in particular, may help the client confront the negative emotions connected to the illness, but is not necessarily an easy and relaxing method. This seems to be the case especially at times where mental processing is the most active and the proximity to the illness is still tangible.

Regulating the client's anxiety and stress levels in improvisational music therapy may sometimes be important for avoiding harmful effects of therapy, such as prolonged negative transference. It is also important for a music therapy clinician to be aware of the sometimes anxiety-provoking and stressful effects of clinical improvisation, and to understand it not only as a liberating and relaxing method.

Future Directions

In terms of training, we will concentrate on maintaining and further developing our Music Therapy Master's training. At the moment, we have students from 10 different countries, and we look forward to maintaining this international trend. A big challenge is to begin to establish music psychotherapy training in collaboration with the Department of Psychology. We look forward to considering the possibility of opening this track also for international students.

We are continuously writing grant applications for new RCTs. Depression is still a diagnostic population of particular interest for us, but we are considering the possibility of expanding our research activities to other psychiatric groups as well. A promising collaboration is going on/under discussion between Aalborg University, LUCA School of Arts, Anglia Ruskin University, Temple University and the University of Jyväskylä concerning improvisational music therapy for different psychiatric groups. The collaboration covers aspects such as theory development, improvisation analysis, and guidelines for clinical practice.

A specific area of interest in the University of Jyväskylä is research on clinical improvisation, primarily in the field of psychiatry or music psychotherapy, but broader as well to include the field of developmental disorders. In addition to the computational analysis of clinical improvisation, including the development of analysis protocols, we are interested in researching in depth the essence of clinical improvisation. Of importance are internal mechanisms of clinical improvisation, its behavioral and physiological

dimensions, as well as its connections to emotional processing from a therapeutic viewpoint.

As an example of the latter, we are currently continuing pilot studies where to investigate and improve the optimal session structure, as well as to further explore the dimensions and characteristics of clinical improvisation. Depression and anxiety are a clear focus, and by connecting HRV measures to other clinical data, we hope to determine to what extent our preliminary pilot findings can be generalized across the population of clients with depression. The meaning of negative and positive emotions/emotional processing in the treatment of depression and anxiety will also be a focus. Our group (comprised of professor, Ph.D. and master's students) aims at completing several more pilots, as this can be accomplished without external funding. However, a large-scale research project necessarily would need external funding. Currently, there is one application pending (Academy of Finland). Our work is thus connected to the development of the IIMT model as well both from the theoretical and clinical practice development points of view.

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4

The Future of Music Therapy for Persons with Eating Disorders

Gro Trondalen

An Overview of Eating Disorders

Eating disorders (ED) are understood to be psychiatric in nature—that is, they arise when thoughts and behaviors in relation to food and weight begin to restrict the development of life and impair the quality of life itself (Skårderud, 2000, p. 11). Diagnostic criteria are provided for pica, rumination disorder, avoidant/restricted food intake disorder, anorexia nervosa, bulimia nervosa, and binge-eating disorder.[8] The latter three are the most common.

Epidemiology

Incidence. Anorexia nervosa *(*AN) is relatively common among young women. While the overall incidence has remained stable over the past decades, there has been an increase among the high-risk group of 15-19 years old girls. The occurrence of bulimia nervosa (BN) has decreased since the beginning of the 1990s. Compared to the other ED, binge-eating disorder (BED) is more common among males and older individuals (Smink, van Hoeken, & Hoek, 2012). All EDs are associated with an elevated mortality risk, with AN as the most striking. As far as gender is concerned, females are much more likely to suffer from an eating disorder. An estimate 10% of reported cases of ED are however, male, and this estimate may be low due to underreporting (Fairburn & Beglin, 1990).

Prevalence. Lifetime prevalence estimates of AN, BN, and BED from population-based studies of adults indicate the following: AN: 0.3% (0.5%-1.0%) (females 2.2 % and males 0.24). Until the 1970s, in Europe there was evidence of an increase in the registered prevalence of AN (Espie & Eisler, 2015), 0.9% (0.5%-3.0%), and BED, 1.6%, respectively (Swanson, Crow, Le Grange, Swendsen, & Merikangas, 2011). The prevalence of eating disorders in non-

8 http://dsm.psychiatryonline.org/doi/full/10.1176/appi.books.9780890425596.dsm10

Western countries is lower than that of Western countries but appears to be increasing globally (Makino, Tsuboi, & Dennestein, 2004)

Mortality rate. Among all psychiatric disorders, AN is often reported to have the highest mortality rate. Standardized mortality ratios appear equal between males and females (Espie & Eisler, 2015). One meta-analysis of 36 studies estimated the population mortality rate (Arcelus, Mitchell, Wales, & Nielsen, 2011) per year at 5.1 of which 1.3 was due to suicide. The weighted mortality rates (i.e., deaths per 1000 person-years) were 5.1 for AN (higher for men than women), 1.7 for BN, and 3.3 for eating disorders not otherwise specified (EDNOS). The standardized mortality ratios were 5.86 for AN, 1.93 for BN, and 1.92 for EDNOS. One in 5 individuals with AN who died had committed suicide (Arcelus, et al., 2011). The aggregated estimated mortality rate for subjects with AN is substantially greater than that reported for female psychiatric inpatients and for the general population.

Treatment. There are a variety of theoretical orientations and treatment traditions for ED (Claude-Pierre, 1997/99; Garner & Garfield, 1997; Lask & Bryant-Waugh); however, cognitive traditions (Fairburn, Shafran, & Cooper, 1999; Hoffart, et al., 2002; Rø, Martinsen, & Rosenvinge, 2002; Vitousek & Watson, 1998) and Mentalization-Based Therapy approaches seem to be on the increase (Fonagy & Bateman, 2006; Skårderud & Fonagy, 2012). In addition, creative arts therapies are offered to people suffering from an ED (Brooke, 2008; Dokter, 1994; Heiderscheit, 2015a; Hornyak & Baker, 1989; Minde & Jennings, 1994; Tisera-López, 2000).

Music Therapy and Eating Disorders: Music Therapy Offers Hope

An eating disorder can be a life threatening condition as it links to food and nutrition. In addition, it concerns the human being's inner feelings and the experience of being valuable as a person. It also links to the intoxicating power of shame (Skårderud, 2007). An ED threatens life itself.

Music therapy seeks to activate the client's personal resources. I suggest music therapy to be a *life giving* condition. Music therapy supports a link between inner and outer space, while allowing for appreciative recognition at an existential level. I suggest music therapy to be a creative health resource, which supports life itself (Trondalen, 2005). According to D. Aldridge (1996, p. 241) creative arts activities (hence, music therapy) then, offers a unique opportunity: "To be remade anew in the moment, to assert identity which is aesthetic in the context of another person, separate yet abandoned, is an activity invested with that vital quality of hope"

Theoretical orientations in music therapy for ED include: analytical, analytically-oriented, psychotherapy (for example, mentalization-based), as well as cognitive and humanistic / existential orientations.

Music therapy settings

Music therapy for people suffering from an ED takes place in a variety of different treatment traditions and settings. Examples are private practices,

outpatient clinics, inpatient, residential and somatic institutions (see, for example, Desjardins, 1994; Dokter, 1995; Heiderscheit, 2008, 2015b; Hilliard, 2001; Hornyak & Baker, 1989; Krantz, 2007; Loos, 1989; Meyberg, 1989; McFerran & Baker, 2011; McFerran, Baker, Kildea, Patton, & Sawyer, 2008; Pavlakou, 2009). Music therapy can also be provided individually (Austin, 1999; Heiderscheit, 2013; Justice, 1994; Trondalen, 2004), in family therapy sessions (Noer, 2015; Torbergsen, 2009) or in group sessions (Loth, 2002; McFerran, 2005a).

Clinical approaches

Expressive approaches to music therapy involve improvisation, re-creating and composing (see, for example, Neugebauer, Gustorff, Matthiessen, & Aldridge, 1989; Robarts, 2000; Smeijsters, 1996; Baker, 2015), all of which may be followed by a verbal processing (Eckhoff, 1997; Frederiksen, 1998; Heiderscheit, 2008; Lejonclou & Trondalen, 2009; Loos, 1994; Nolan, 1989; Sloboda, 1993; Trondalen, 2015b). Receptive music therapy approaches include 'self-listening,' GIM, and listening to relaxing and/or favorite music (Clark, 1991; Esplen, Garfinkel, Olmsted, Gallop, & Kennedy, 1998; Frohne-Hagemann & Pless-Adamczyk, 2005; Heiderscheit, 2013, 2015b; Trondalen, 2003), 'body-centered' techniques (Heiderscheit, 2008; Justice, 1994; Tarr-Krüger, 1997) and 'need-adapted therapeutic and motivational attunement' (Bauer, 2010).

Research & Literature

Before 1988, there were very few publications that presented systematic work, as well as relatively few presentations at conferences. In the following paragraphs a representative overview of literature is listed, including clinical and theoretical texts.

PhD studies on music therapy and eating disorders (see, for example, Loos, 1994; Stene, in progress; Trondalen, 2003, 2004, 2005, 2006, 2011; Trondalen & Skårderud, 2007).

Studies informed by research (Frederiksen, 1997, 1999; Loos, 1989; McFerran, Baker, Patton, & Sawyer, 2006; Robarts, 2000; Rogers, 1995; Smeijsters & van den Hurk, 1993; Tarr-Krüger, 1989, 1990; Trondalen, 2003). Group work: (Hilliard, 2001a; Loth, 2002; McFerran, 2005a; 2005b; McFerran & Baker, 2011; McFerran, et al., 2008; McFerran, et al., 2006; Pavlakou, 2009) and family-based treatment (Dimitropoulos, Farquhar, Freeman, Colton, & Olmsted, 2015).

Systematic analysis of cases, individual or in group, from clinical practice (Bauer, 2010; Bobilin, 2008; Frank-Schwebel, 2001; Franko & Rolfe, 1996; Heal & O'Hara, 1993; Heiderscheit, 2008, 2013; Justice, 1994; Langenberg, 1989; Lejonclou & Trondalen, 2009; Neugebauer et al., 1989; Nolan, 1989; Parente, 1989a, 1989b; Reynaga-Abiko; Robarts, 1994; Robarts & Sloboda, 1994; Sloboda, 1993, 1995; Smeijsters, 1996; Tisera-López, 1996).

Agenda for Future Music Therapy Clinical Practice with Eating Disorders

***Focus on resources and collaboration**

It is essential to emphasize the collaboration between the therapist and the client, aimed at encouraging the client to release self-healing forces and promote self-agency and empowerment (Rolvsjord, Gold, & Stige, 2005a; 2005b; Trondalen, 2015a). C. Schwabe, who explored a resource-oriented music therapy in the early 1960s, states: **"**[…] I would like to emphasize that it is not less difficult to activate self-healing forces in the patient than to treat the pathological aspects of his or her personality." (Schwabe, 2005, p. 49). With reference to resource-oriented impulses in psychotherapeutic thinking, he continues: "Of course, resource-oriented action approaches have not been invented by music therapy, but as I said they constitute an essential aspect, an essential treatment mechanism that can be derived from the nature of the music itself" (Schwabe, 2005, p. 50).

I concur with Rolvsjord and her colleagues' argument (2005a, p. 24): "To focus on the client's strengths and potentials or to focus on problems and pathology are not seen as mutually exclusive alternatives, but might be interacting processes." If possible, music therapy should include clients' partners, family, study mates, etc., as eating disorders often lead to isolation and loneliness. Playing music or listening to music together contradicts loneliness.

***Focus on regulation of emotions through music and verbal exchange**

In music therapy sessions, relational and musical experiences provide opportunities to find meaning and to co-create through the active interplay innate to the therapy; this generally encompasses a procedural dialogical-construction process, with 'feelings described' as the primary agent (Trondalen, 2008). People suffering from an ED seem to struggle with emotional and food regulation. The client-therapist relationship itself is seen as the driving force of human development and change, the (musical and verbal) dialogue takes place within an *intersubjective* framework. Exploring the musical relationship allows for a regulation of feelings, while supporting new narratives to emerge through new relating experiences within the musical field (Trondalen, 2015b).

It seems as most analytically-oriented approaches include both music and verbal exchange. I suggest including words to support the fragile link between inner and outer space. People suffering from an ED often state that they struggle to find words for feelings, or don't recognize their personal feelings at all (alexithymia). The therapist and the client have experienced a joint, but not identical, interplay. Such a joint experience, allows for exploration of the experience through mutual sharing. Such a sharing supports mentalization (Fonagy, Gergely, Jurist, & Target, 2002).

***Focus on both expressive and receptive music therapy, individually and in groups.**

Currently with ED clients, expressive approaches appear to outnumber receptive approaches in music therapy. I recommend including a variety of

receptive approaches such as 'self-listening,' individual GIM and adaptions of GIM to support the link between body experiences and mentalization.

***Focus on aesthetics in treatment.**

Art is multilayered. The aesthetics of music therapy matter. The aesthetics of the setting of music therapy treatment is important because many of clients are especially occupied with aesthetics in various ways. For example, the reader is referred to the cultural and treatment possibilities offered to people suffering from an ED in Norway: *Villa Sult* (*Villa Hunger*: http://spiseforstyrrelser.no/about/about-us-more/)

***Support the client's daily musical activities.**

Most people listen to music every now and then, and some use music rather actively and frequently to regulate emotions and/or energy level (Bonde 2009; Sloboda & Juslin 2011). Musical self-regulation is largely a positive act, even for people with an ED. However, 'alone-listening' on the subway with an iPod, for example, also perpetuates a feeling of loneliness and creates an experience of being separate from others. Offering the possibility of *sharing* these musical experiences within a therapeutic framework supports a link between therapy and daily life. In addition, upgrading the value of personal listening promotes self-healing forces and a 'normal' life. Singing in a choir, for example, may afford new relating experiences through performance, and enhance the dream of a 'normal' – not perfect - life.

***Self-care for the music therapists.**

The world is a changing scene, and so are EDs. Working with people suffering from an ED is challenging, as the illness itself evokes many feelings and emotions related to body and 'perfectionism' — also for the music therapist. As music therapists, we need to take of ourselves and to expand our comfort zone through different self-care procedures, self-exploration and most importantly, supervision to be able to meet the needs of the future (Trondalen, 2016).

Agenda for Future Developments in Music Therapy Theory for Eating Disorders

***Explore a variety of theories.**

In spite of training and experience in a particular theoretical framework, music therapists should allow themselves to be open to new theories, including contextual and neuroscientific theories.

***Explore relational theories in depth.**

Relating closely to another is frightening for a person with ED. Music therapy offers relating experiences through music. An encounter with a sensitive and emotionally present music therapist affords experiences analogous to real life. My experience is that people struggling with EDs *are* able to regulate and explore life in new ways through music therapy. By being present in the moment, I suggest both

the client and the therapist to be nurtured through music. An *intersubjective theoretical framework* focuses joint attention in the here and now, while seeking to support hope for an anticipated future. The latter is indeed important in light of the high mortality rate for those with ED.

***Explore the link between music therapy and mentalization.**

I suggest linking theories from music therapy with mentalization (Fonagy & Bateman, 2006) and to explore the potential space between them. Mentalization refers to the process of recognizing and seeing oneself from an outside perspective, and the other person from an inside perspective, while interpreting implicit and explicit utterances as meaningful expressions of inner life. In expressive music therapy, the mentalization process is emerging during the interplay through the encounter of intentional mental states of thoughts, intentions and feelings, desires, needs, beliefs and reasons, audible and/or visible in the music making. It is verbally investigated after the joint music creation. In receptive music, such as mentalization- based GIM, the mentalization process also emerges during the music journey through the meeting of mental states. Mentalization is thus a spontaneous and implicit (unconscious) process emerging from the encounter with self and other's actions and feelings.

Agenda for Future Research in Music Therapy for ED

***Distinguish between creative art therapy, music medicine and music therapy in research endeavors.**

It is important to actively investigate the influence and components of the client-therapist relationship, music and process on research outcomes. Music therapy has to be investigated independently to be able to support meta-studies and comparisons between the different approaches.

***Investigate the outcome of a broad range of musical experiences in music therapy.**

The primary methods for music experiences include listening, improvising, re-creating and composing (Bruscia, 2014, p. 41). As many of the publications include narratives and case studies, *research* is needed in all methods of music experiences with the present client population.

***Investigate the outcome of music therapy alone versus its combination with other modalities.**

To be able to argue and offer cost effective and useful therapy approaches, multi-modality studies are needed because music therapists within ED treatment often work in conjunction with other professionals.

***Utilize a variety of research paradigms as well as more rigorous research designs to best understand the effects of music therapy approaches on various outcomes, including short-term versus long-term treatments.**

Music therapy research should utilize a range of methodologies (Wheeler & Murphy, to be published 2016): Objectivist approaches (Empirical studies, Including RCTs and meta-studies) and Interpretivist positions (qualitative research, case studies), phenomenological and hermeneutic perspectives, feminist and more contextual designs as well. In addition, mixed-methods studies linking empirical research with interpersonal & musical processes in the data analysis are also needed. We need more research on *outcome* and *clients' narratives* within music therapy through Ph.D. studies, cross-country studies, RCTs and meta-analysis.

***Identify social context variables that may influence the outcome of treatment in enhancing aspects of social relatedness.**

Some years ago, an ED was a visible way of expressing oneself as special and unique. Today it is a (Western) cultural ideal to be slim, which means that being thin has lost its exclusivity. Accordingly, reasons for developing an ED are more varied than before (Bruch, Czyzewski, & Suhr, 1988). Developing an eating disorder is for some about wanting to die; for others, it is cry for help because they want to choose to live. The body itself is a means of expression; it is the person expressed as a concrete metaphor which has lost its *as if* character. "The body is stiff and hard, and that is *me*," one client said. According to Røer (2006), an eating disorder is closely related to identity—that is, to the personal narrative itself.

***Investigate the influence of music therapy on the larger and most significant health issues (i.e., AN, BED) & identify together with other professional what outcome variables are to be studied for AN, BN and BED.**

Obesity (BED) is a prominent health issue, and an increasing number of people are affected by for example, diabetes due to overweight, including children. Embedded is also the need to investigate the potential role of music therapy in the *prevention* of illness (family investment). From a theoretical point of view, health in music therapy is viewed as an experience – both a resource and an act of participation that changes over the course of one's life (Trondalen, 2015b). It is a resource everyone possesses and administers in different ways within different contexts—even people suffering from an eating disorder. Supporting creative health resources can be linked to "an assemblage of activities designed to promote health and prevent sickness" (Aldridge, 2004, p. 37).

A link to databases on music and health at the Norwegian Academy of Music: http://nmh.no/en/research/centre_for_music_and_health/databases

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5

The Future of Music Therapy for Persons with Personality Disorders

Niels Hannibal

Introduction

This article focuses on the use of music therapy with people who suffer from personality disorders (PD). This population has until recently been regarded as very difficult to treat or even resistant to psychotherapeutic treatment. Characteristics of PD include difficulties in establishing functional relationships and acquiring a stable sense of self; these may lead to self-destructive behaviors during treatment. Persons with PD have a pressing need for support from others, and their difficulty in getting this support can led to a negative spiral of regressive behaviors, for example, an "I hate you – don't' leave me" ambivalent state of mind.

Bateman & Fonagy (1999) have described a new and different approach to the treatment of people with PD which involves intensive therapy provided daily on an outpatient basis. This treatment integrates both traditional and new therapeutic theories and practices and is called *Mentalized-Based Treatment* (MBT) (Bateman & Fonagy 2005). This approach has caused a shift in psychiatric treatment with this population.

This article provides a short overview of qualitative and quantitative research on music therapy with people with PD, followed by a short presentation of the Mentalized-Based Treatment model (MBT) and some discursive remarks on how suitable MBT is as a theoretical and clinical framework for music therapy with this population. Finally, I give suggestions for how this could have an impact on music therapy in the future.

Research on Music Therapy and Personality Disorders

Qualitative research

It appears from several case studies that persons with PD may benefit from music therapy. Several case reports are described below.

Pedersen (2003) describes a treatment process wherein a man with PD, through the intensive use of music improvisation, heals and integrates parts of his psyche that were hidden deep in his unconscious. The creative and explorative process helped him to reacquire a sense of self.

Hannibal (2003) details a case with a woman who was unable to verbalize her internal states. In music therapy, she developed the ability to dialogue about her internal states, develop better emotional regulation and achieve a more positive sense of self.

In a 2009 case with a sexually abused girl, Strehlow illustrated how music improvisation can activate and facilitate different processes. The author presents nine different ways that music provided a therapeutic space for the child, for example, music as a way out of silence; as a space for good and secure experiences; and as re-enactment of traumatic relationship patterns through musical interactions (p. 181). These three cases focus on the music as a means for interaction and communication outside of words and language. It is the activity and the actual process of playing that seems to provide the experience of new and different ways of being together, and this new togetherness functions as a reservoir for correctional experiences.

There are also other case studies that describe music therapy with this population (e.g., Dvorkin, 1991; Hannibal, 1999; Kupski, 2007; Odell-Miller, 2011 & in press; Schmidt 2002,).

Hannibal investigated the concept of pre-verbal transference in his Ph.D. dissertation from 2001. This thesis included two case studies of people diagnosed with PD. Transference patterns were analysed from a preverbal perspective as they unfolded before, during and after musical improvisation. The theoretical frame for the study was based on Daniel Stern's theory (2000) of preverbal relational dynamics concerning how real-world lived experiences are the basic elements of building the sense of the self and the sense of how to be with other people. The research revealed that clients repeated transference patterns in their music improvisations and that musical interaction could both activate conflict issues as well as change the context of intersubjectivity after playing.

Rolvsjords (2007, 2010) completed a case analysis of a woman with PD using a treatment approach she developed: *Resource-Oriented Music Therapy* (ROMT). In ROMT, the primary objective is to empower the client, so that the therapy enhances the client's sense of mastery, increases self-efficacy and self-esteem and provides a therapeutic setting where the client can develop a more positive sense of self. ROMT is a constructivist-based approach that changes the therapist's focus from the client's pathology to the client's resources. Thus, music therapy is not concerned with fixing what is not working, but instead with developing and nurturing the potential resources already there. The ROMT model has been tested in a randomized controlled trial involving clients with low motivation (Gold, et al., 2013), and also including a small sample of people with a PD diagnoses. ROMT was shown to be superior to treatment as usual (TAU) in reducing participants' symptoms and increasing their function.

Strehlow and Lindner (2015) conducted a study "to identify typical interaction patterns, arising from the relationship between patient and therapist and also from the significance of music" (p. 1). The study involved an analysis of 20 cases of music therapy with people with borderline personality disorder (BPD); 10 typical interaction patterns within music therapy were identified. The relational patterns reflected typical BPD themes, such as regulation of proximity

and distance, splitting phenomena, trauma genesis, aggression and mentalization. A mentalization-based treatment model was used, and this model has been used also in other recent studies (Hannibal, 2011; Hannibal, et al., 2012a; Hannibal, 2014; Odell-Miller, in press).

Quantitative research

There is very little quantitative research examining the effects of music therapy treatment on clients with personality disorder. Hannibal, et al. (2011) used an existing data set from a larger sample to examine changes in clients with PD. Music therapy was provided along with other interventions, such as individual and group therapy, psychoeducation, body therapy, medical consultation and support form staff. The sample contained 53 clients. The result showed that the group had reduced symptoms and increased function similar to patients that received art therapy instead of music therapy, but there were also some noticeable findings in this study. When looking at individual groups, larger differences were evident. Some groups had high attendance, some the same attendance and some groups showed very low attendance compared to verbal therapy. This indicated that for some clients music therapy treatment was challenging.

Hannibal, et al. (2012b) published a small study looking at adherence to individual music therapy treatment in 27 clients with either schizophrenia or personality disorder diagnoses. Findings showed high adherence to treatment for both groups and a low dropout rate. The study also examined predictors for low adherence and dropout, but found none.

From 2012 to 2014, a pilot study (n = 4) looking at music therapy for clients with personality disorder was conducted in Aalborg. The findings haven't been published yet, but the following is a brief summary. Results indicate a change in participants' attachment patterns as measured by the Revised Adult Attachment Scale (RAAS), and these were considered positive results. But there are also many unanswered question such as: did the treatment manual work and did the therapist adhere to the Process Oriented Music Therapy (PROMT) manual? Should a future research design include both expressive and receptive interventions or should only one intervention be included as it was done in the Finnish study on the effect of musical improvisation on clients with depression (Erkkilä, et al., 2011)? Is it possible to create a research design that can work in an international, multi-centre study? These questions need to be addressed before a larger study can take place.

Mentalization-Based Therapy

The Mentalization Based Therapy (MBT) model is seen as a new treatment model in music therapy in Denmark, Germany and England. Mentalization refers to the process by which we make sense of each other and ourselves, implicitly and explicitly, in terms of subjective states and mental processes. When mentalizing is compromised, subjective, internal experiences and the interpersonal world stop making sense (Daubney & Bateman, 2015, p. 132). This is actually the central problem for people with PD. The reason for this is that vulnerability to a frequent loss of mentalizing and slower recovery of

mentalization in the context of interpersonal relationships is the fundamental pathology (ibid, p. 132). So in a sense the client lives in an almost permanent non-mentalizing mood, where interpersonal relationships create a personal state where, for example, anxiety, emptiness, confusion, loneliness or a combination of these is the dominant experience. So the focus of treatment is to develop the client's ability to regain the capacity to mentalize when it is lost. For further information, the reader is referred to: Bateman & Fonagy (2012).

MBT and Music Therapy

In 2007, Odell-Miller's research found that music therapists in three European music therapy centers were implementing an MBT approach. In Denmark, the MBT model is integrated in a treatment manual, Process-Oriented Music Therapy (PROMT) (2012a). This manual was used in a pilot study mentioned above for people with personality disorders. In Germany, Strehlow has published on MBT and music therapy from an MBT perspective (Strehlow, 2009, 2011, 2013, 2014 & 2015). She claims that music therapy is especially suitable for stimulating the capacity for mentalization (2014). In 2014, a music therapy annual publication, *Mentalization and Symbol Formation in Music Therapy Practice* contained 9 articles that examined mentalization in relation to music therapy practice.

Both Hannibal (2013, 2014) and Strehlow (2009, 2011, 2013, 2014, 2015) have discussed how music therapy can adapt MBT's theoretical framework regarding the therapeutic process as well as how the techniques and interventions of both approaches can be integrated. These authors have also discussed how MBT in music therapy is different from MBT done in a solely verbal context. Music adds something to the therapy that MBT theory has yet to formulate. Hannibal (2013 & 2014) argues that music enhances the implicit level of relational knowing, and makes it available for both implicit and explicit processing.

It is my opinion that the MBT model fits very well with music therapy practices as will be described below. But it is also important to state that there are new elements in MBT that music therapists need to learn. The MBT community states that MBT is actually not new in many ways (Bateman & Fonagy 2005). As this model integrates many different therapeutic models such as psychodynamic thinking, attachment theory, evolution theory, neuropsychology and systems theory and adapt these theories to each other. For example, the therapeutic process is always viewed from the here and now perspective; whatever happens between the client and the therapist is related to the ongoing interaction between them. Activating the attachment system increases arousal and too much or too little arousal decreases the mentalizing capacity. The therapist takes the role of not knowing, implying that the therapist facilitates the client's ability to mentalize and make sense of what is going on.

An important question to pose is: how are music therapy and MBT alike and different? The following elements are characteristic of music therapy: music therapy is unfolding in the moment (here and now); the creation of music happens in the therapy context (Rolvsjord & Stige 2015); and it is an enterprise where both client and therapist contribute. Music evokes and enhances implicit procedural

doing (the "know how" level) and also explicit symbolic, narrative, episodic, verbal, symbolic knowing (the "to know" level) (Hannibal 2001, 2014). Music can activate the attachment system, and this can be both supportive and challenging. Music can both increase and decrease arousal.

There are also differences between MBT and analytically-oriented music therapy: in music therapy, it is necessary to mentalize the client in the session. This means that the therapist has to keep a focus on the client's mental state and sense when the arousal level is optimal; if there is too much intensity, the neuro-cortex may lose the ability to mentalize. Therapists also have to learn the "not knowing" stance. They have to understand and be able to identify when the client exhibits a low level of mentalization, for example when the client appears to reflect but it does not change anything.

What does not exists in MBT is a theoretical understanding of how mentalization unfolds in music therapy. For example how can we monitor the mentalizing capacity in the music? Sometimes engagement is there, and the client uses the music to explore himself or the relationship. The client might be very insecure and shy, so the music might sound like the client is detached, but in reality the client is risking and daring to express himself in the music. The ability to tell the difference is important. Sometimes clients are very dependent in their relational style, so detaching from the therapist and playing more separately might be a sign of implicit mentalization in the music. Detachment is a sign of low mentalization, and in these situations the therapist has to change the way he or she perform in the music so we can get the client back in a mentalizing position.

Conclusion

What are the implications for the future music therapy in the treatment of clients with personality disorder? First of all, there is a need for more research focusing on the effects of music therapy with this population. We need to know more about what changes as a result of therapy and how it changes; if there are client groups where certain music therapy methods are contraindicated; if music therapy develops the person's ability to function in interpersonal relationships; if it helps the client to regulate his emotional state, and if music therapy can help clients to mentalize better.

Secondly I believe that MBT and music therapy seem to fit very well together. MBT provides a conceptual framework that is relevant, and music can help to develop both implicit and explicit mentalization. However, we need to investigate how music can help improve one's capacity to mentalize both within and outside of music in much greater detail. Further questions are: is there a difference between improvisation, song writing and song performance and how does receptive music therapy help and so on? Finally, we need to train music therapists in the theory and practise of MBT. I expect that in the future, therapeutic skill in MBT is something that will be considered fundamental for all personnel working in health care.

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6

The Future of Music Therapy in Forensic and Criminal Justice Settings.

Helen Odell-Miller

Introduction

This paper considers the status of music therapy in the criminal justice system with a focus upon music therapy clinical approaches and research in prisons and high secure psychiatric units. A current dilemma for music therapists is whether to focus their services upon people with identified mental health problems, where therapy would be indicated, or whether to focus treatment upon non-clinical populations found in prisons. There are differing opinions about this. Gold, et al. (2013) concluded that the focus for music therapy should be upon those with psychiatric diagnoses and mental health problems, a position also taken by Compton-Dickinson (2015) and Compton-Dickinson, Odell-Miller and Adlam (2013). In contrast, Hakvoort (2013), Leith (2014) and Chen (2014) have researched more general populations in secure settings and have found emerging themes and diagnoses, such as depression and personality disorder. Further, political issues drive forward priorities, for example, in the USA where the death penalty exists, there is still more emphasis placed upon continued custody and safety in holding a person, rather than on rehabilitation and recovery. This is because following recovery, there is a risk of being seen as responsible for a crime, and therefore other threats such as death as punishment are real. Very recently in the UK, a report was given by the Ministry of Justice raising concerns about the rising number of suicides in prison and custody, particularly for younger people, thus emphasizing the negative effect of prison. These phenomena of risk-need-responsiveness affect the way services are provided cross-culturally. In all countries, the percentage of mental health problems is reported as higher in prison populations, including across special secure hospitals, than in normal settings.

According to a report by the advisor on terrorism to the US government, J. Reid Meloy, in his keynote lecture (Compton Dickinson 2015a) to the International Forensic Psychotherapy Conference in March 2015, 75% of the prison population suffers from Anti-Social Personality Disorder (ASPD), and 2 out of 3 prisoners are not 'psychopathic,' but suffering from often undiagnosed mental health disorders. Further, there is no known treatment for psychopathy, i.e., no specific RCT trials, and therefore any research showing the benefits of therapies, such as music therapy, is much needed and would be important in the

21st century. Music therapists need to take into account these factors when planning music therapy services.

Benefits of Music Therapy to Persons within the Criminal Justice System

Music therapy provides an emphasis on nonverbal communication and nonverbal interaction. Further, it provides possibilities for distancing when words and thinking, particularly around the index offense, may be too painful or traumatic. Further, Leith (2014) and Compton-Dickinson, et al. (2013) have focused upon the unique possibilities of music therapy to improve empathy, self - concept and relatedness.

Managing and channelling aggression is also mentioned repeatedly in the literature, specifically suggesting that aggression and conflict can be expressed through music (Pool & Odell-Miller, 2011; Compton- Dickinson, et al., 2013; Chen, 2014). Anger management is another overarching theme emerging from existing from research and clinical examples in the literature. Redirection of anger is facilitated by changing musical form, idiom or mood. Trained therapists are able to accept and engage with anger, and this is central for this population. Music offers possibilities for reflection, containment and expression of angry feelings, with the therapist providing further processing and finding of meaning in a safe environment.

Regarding music therapy approaches, Hakvoort & Bogaerts (2013) focused on the importance of cognitive-behavioral change, whereas Sleight & Compton- Dickinson (2013) and Compton-Dickinson (2015) have focused on Group Cognitive Analytic Music Therapy (G-CAMT). Research also shows that music therapists support and advise staff on how the pathology of patients/prisoners can affect them (Hakvoort & Bogaerts, 2013; Hervey & Odell-Miller 2013). Community music therapy and music for health approaches are also reported in the literature (Benisom & Gilboa 2010; Cox & Gelsthorpe, 2008; Maguire & Merrick 2013) and relate to the Recovery Model. Musical ensembles, i.e., bands, are also common in prisons, for example 'The Recovered' band (John, 2014), and Gold, et al. (2013). Playing in bands was a popular music therapy approach chosen by group members in Gold's RCT study investigating effects of music therapy for prison populations.

Previously Codding (2002) provided a review of the most common treatment goals based on an overview of the literature of music therapy on this topic. These goals include: providing a non-threatening motivating reality focus for use of leisure time and release of energy, improving self-esteem, enhancing the ability of self-control, reducing stress and anxiety, developing coping skills.

More recent reviews (Gold, et al., 2013; Leith, 2014) have cited over 61 studies relating to music therapy in the criminal justice system. Fifteen of these studies involved *music* rather than *music therapy* interventions in prison (Leith, 2014, and, prior to 2013, only two were controlled trials (Johnson, 1981; Thaut, 1989). These two studies indicated respectively that music therapy has promising effects, but there were study limitations, such as no pre- and post-tests (Thaut, 1989).

In terms of prison age groups, Hakvoort (2002) has described the use of music therapy to develop core self-awareness for younger offenders, and Smeijsters, Kil, Kurstjens, Welton, & Willemars (2011) have also described their work with a younger population.

Recent Research

Recently, three Ph.D. studies have been completed in the forensic field. Chen (2012, 2014) conducted an RCT with 200 Chinese prisoners. Her results indicated that music therapy reduced anxiety and depression in these prisoners. Compton-Dickinson and colleagues conducted a mixed-methods study with 20 male inmates in a high-security prison. Results showed that the intervention, G-CAMT (Group Cognitive Analytic Music Therapy) was a useful tool and increased relatedness in these men. Leith (2014) also implemented a mixed-methods study with 10 female prisoners. Her results indicated that music therapy improved the women's self-perceptions as well as their readiness to engage in prison rehabilitation programs.

All three of these studies used live, active music-making including improvisation. Leith (2014) found that songwriting emerged as the most effective method. Compton-Dickinson investigated G-CAMT, and Chen had her participants select among improvisation, music imagery and songwriting. She found no significant difference among these three approaches.

In addition, Leith's (2014) findings included a summary concerning the type of songwriting indicated as most helpful for her small sample of 10 participants. Features in the songs included predictable harmonic progressions, popular music idioms, phrases where emotional dynamics increased, and the use of humor. She found that participants used the songwriting process to address in-depth, difficult themes from their lives, and that putting these into songs also enabled links to be made to the outside world, including messages to family and friends. Empathy seemed to increase for family members of some participants who were dealing with their loved one's offenses.

In summary, there are some strong and significant indications that music therapy is beneficial for persons in the criminal justice system. However, music therapy quantitative research in this field is sparse in relation to other areas, such as schizophrenia and autism. More research is needed as reflected in the following ten recommendations.

Recommendations to Advance Music Therapy Research and Practice in Forensic Music Therapy

1. More knowledge and additional research studies are needed to find what works best in this field.

Research should include both qualitative and quantitative studies, including mixed methods designs. More and larger studies are needed. Study designs should reflect cultural specificity across and between countries, based on current literature from the US, China, the UK, the Netherlands and Norway. A multi-centered RCT trial should be considered.

Financial resources are spent on keeping more people in prison in countries where the death penalty exists. This means that because of differences in criminal justice systems, for some countries there is a greater emphasis needed on rehabilitation, and in some on re-settlement and rehabilitation recovery, owing to different criminal justice systems. Music therapists need to adapt research designs across and within countries to reflect this. Research needs to be shared and compared across countries, and priorities should be linked to priorities for criminological outcomes in each country.

2. A focus is needed on prevention of crimes, especially with younger persons in the community.

There is a key role for music therapy in the area of prevention. Therefore music therapists should work within rehabilitation programs outside the secure environment, including undertaking preventive work and research as suggested by Derrington (2012, 2013) in her work within pupil referral units to reduce exclusion from school and prevent future criminal patterns.

3. Research and clinical practice should focus on evolving and testing models for both group and individual music therapy.

Currently both group and individual music therapy structures have been studied, but there are no general guidelines from the research about what works better and when. Compton-Dickinson (2015) found a high level of engagement in men who are normally hard to engage in music therapy G-CAMT groups. There was also an indication that music therapy groups may reduce the length of stay (Compton-Dickinson 2015) and that men in the standard care alone group became more hostile.

Treatment interventions through music therapy groups can improve sociability. In secure psychiatric settings this is well demonstrated, perhaps because a high proportion of people in U.K. high security units suffer from schizophrenia; there is already evidence that groups using active music-making are effective for people with this diagnosis (Gold, et al., 2009). In a similar manner, Chen (2014) showed that group music therapy was effective for increasing offenders' self-esteem and social functioning while reducing anxiety and depression. Moreover, effects of music therapy increased with the number of sessions.

On the other hand, Leith's 2014 study has indicated that, in a women's prison, individual music therapy helped improve self-concept and identity. More studies in both genres are therefore needed.

4. Consider the appropriate approach for the context, including moving between music-making and talking.

Music therapy should encourage reflection when appropriate, for example, music can be a form of distancing, which helps people who do not do well in verbal psychotherapies. In Chen (2012) and Compton-Dickinson (2015), group treatment protocols included verbal reflection by members regarding the musical processes at the end of each session. No sustainable psychological effect was

shown from combo playing and receptive listening delivered by non-music therapists in Compton-Dickinson's study (2015). However, more evidence and additional studies are needed using various verbal vs. musical approaches as there is inconclusive information currently available about the best approaches. It is possible that using culturally-appropriate active music interventions and, unless contraindicated, facilitating reflections on what music therapy experiences add to spoken language and thinking, and vice versa, would be most helpful for people with forensic histories.

5. There should be a wide range of music therapy techniques available and suitable for a wide range of participants.

Music therapy techniques used with this population should include songwriting, individual- and group-structured improvisation, therapeutic performance, and receptive techniques (Codding, 2002; Compton-Dickinson, et al., 2013; Gold, et al., 2013). Chen (2014) found that allowing prisoners choices between receptive and active techniques was helpful, but that no significant difference between approaches occurred.

Compton-Dickinson, et al. (2013) have described various approaches including psychoanalytically-informed improvisation, performance-based, resource-oriented and community music therapy approaches as well as music therapy techniques adapted from psychotherapy, such as G-CAMT.

Gamelan instruments using non-music therapy approaches may be useful for prisoner populations (Cox & Gelsthorpe, 2008). Loth (2015) recently indicated that such multicultural approaches by music therapists using the gamelan in prison and high-security settings would be helpful.

6. Music therapy approaches as informed by various theoretical models should be considered.

Research should be undertaken to compare effectiveness of music therapy based on different theories and psychotherapeutic approaches, sociological models and other new models, such as Mindfulness and Mentalisation.

7. Music-based movement should be further explored and is crucial for those in secure settings.

Emphasis upon physical exercise has always been at the forefront in criminology settings. Music therapists' clinical experiences with prisoners who have committed minor crimes suggest that movement in music is a safe and appropriate activity for them and fits their physical and psychological needs, as found in Chen's (2014) research in Chinese prisons.

8. Music therapists have a role to support other staff, and this aspect of their role should be further studied.

Music therapy can confront and explore unbearable emotion and difficulty, even when killing and violence is involved. This means that services need to include robust individual supervision and regular staff group supervision, or supportive staff meetings that facilitate reflexivity.

The prospect of death for the perpetrator of a violent offense can be contemplated and expressed within a music therapy group through group improvisation, musically structured by the therapist (Compton-Dickinson, 2015). Contemplating the realities of death is necessary in this field, but requires music therapists to deal with disturbances arising for them and for prisoners. Sleight and Compton-Dickinson (2013) considered the risks and effect of these issues on therapists. Hervey and Odell-Miller (2012) have discussed music therapy, personality disorders and the impact on the forensic mental health team, and Odell-Miller has detailed the particular aspects of supervision necessary in this field. More research is needed in this area to prevent stress and burnout for staff, including music therapists.

9. Music therapists need to address gender-specific elements in their research and practice.

Leith (2014) researched individual work with women using song methods primarily; Chen (2014) found significant reductions in depression and anxiety for men in a Chinese prison using primarily percussion, relaxation imagery, song methods and art work, and Compton-Dickinson (2015) found that G-CAMT helped improve relating to others for men in a high security psychiatric hospital environment.

Leith (2014), in addition to finding positive effects of songwriting on self-concept, also found that engagement in music therapy appeared to translate into behavioral change outside the music therapy room, leading to a reduction in self harm. The 10 female participants showed an increase in self-confidence, self-esteem, self-efficacy, achievement motivation and a number of other areas relevant to successful resettlement. Leith points out that women form a minority (5%) in the U.K. prison system, which is predominantly designed for men, and the women bring experiences of trauma and abuse with them. Given the results of these three studies, which have focused on a single gender, it is highly likely that there is much more information needed about the gender-specific issues in these settings and the implications of these for music therapy. This is indeed a priority for future research.

10. Music therapists should consider manualizing treatments for research and practice.

Some music therapists have reported the manualization of music therapy treatments as helpful (but with flexibility). The results of Compton-Dickinson's (2015) research using G-CAMT-based interventions showed that *jointly-created musical improvisation* when delivered by music therapists who followed the treatment manual appeared to help patients to safely develop greater awareness of their feelings, and to help instill confidence in the therapists. The success of other manualized models of music therapy, e.g., in neurodisability and adult mental health, point to the need to further assess the importance and effectiveness of manualized treatments.

Conclusion

It is clear that music therapy has the potential to enhance life for those in prison, bring about psychological, behavioral and social change, help prevent crime, contribute to recovery and resettlement, provide staff support and training and help build bridges between the 'inside and outside.' More research is still needed and suggestions above include priority areas for this in the future.

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7

The Future of Medical Music Therapy for Children and Adolescents

Claire M. Ghetti

Current Status of Pediatric Medical Music Therapy

Music therapy within pediatric medical contexts is growing richly in various healthcare cultures worldwide. Music therapists with a broad range of clinical orientations engage in clinical practice of increasing depth and breadth within the pediatric healthcare environment, and contribute to the construction of theory and advancement of research in this area. It is important to reflect on the current state of clinical practice, theory and research in order to identify areas that will benefit from continued development and maturation.

Clinical Practice

The practice of music therapy within pediatric medical settings is occasionally misrepresented as being simple, straightforward and perhaps therapeutically superficial. In actuality, music therapists working effectively within this context are engaging in increasingly sophisticated levels of practice, in line with the increasing acuity of these young patients' health status and their rich and complex context-dependent needs. The nature of the work in this context has evolved along with changes in healthcare practices. For example, Beth Dun (2011), the first music therapist to practice in a pediatric hospital in Australia (Royal Children's Hospital in Melbourne), reflects on 20 years of music therapy practice there, revealing a corresponding shift from primarily group-oriented sessions to individual sessions as patient acuity has increased. Pediatric medical music therapy is a challenging area of practice due to the diversity of needs among children and their families, the need for substantive knowledge related to the medical context, the fast-paced and demanding nature of hospital culture, and the need for the therapist to attend to her or his own emotional and professional well-being (Bradt, 2013).

There has been a significant expansion in the clinical literature base within pediatric medical music therapy during the past two decades. For example, comprehensive descriptions of specialty practice areas within pediatric medical music therapy are detailed in the edited volume, *Guidelines for Music Therapy Practice in Pediatric Care* (Bradt, 2013), and an edited compilation of case

studies exploring advanced practices comprises *Advanced Practice in Medical Music Therapy: Case Reports* (Dileo, 2015a). A variety of special topic areas that reflect the evolution of current practice, such as the use of electronic music technologies in pediatric medical settings (e.g., Whitehead-Pleaux, Clark, & Spall, 2011), are now addressed in publications that help support clinicians' ongoing development in this area of practice.

With advancements in technology and the development of a broader literature base, music therapists who once worked in relative isolation to develop practice in this area are now virtually connected with others at national and international levels. Social media has created avenues for virtual networking, resource sharing and problem-solving that is making significant impacts on individual clinicians and administrators who are developing and implementing pediatric medical music therapy programs. Specific platforms for networking and professional development have arisen worldwide, such as the Australian Music Therapy Association's *Pediatric Health Reference Group*.

Theory

Theory development within pediatric medical music therapy has been influenced by recent conceptual advancements in the understanding of mechanisms of related therapeutic processes, such as multidimensional understandings of pain processing, neurobiological understandings of traumatization and the impact of the creative arts therapies to buffer against traumatization (e.g., Malchiodi, 2015), and psychoneuroimmunology. Though it is beyond the scope of the present paper to detail each one, various music therapists have developed theoretical frameworks related to specific areas of practice within pediatric medical contexts. Examples of such theoretical development include the contextual support model of music therapy (Robb, 2003), the role of music therapy for children and adolescents with cancer (e.g., O'Callaghan, Baron, Barry, & Dun, 2011), music entrainment for pain management (e.g., Bradt, 2001), music therapy as procedural support (Ghetti, 2012), impact of rhythm, breath, and lullaby including a 'song of kin' method within a trauma-informed approach to working with premature infants and their caregivers (e.g., Loewy, 2015), and trauma-informed music therapy for hospitalized children and adolescents (Ghetti & Whitehead-Pleaux, 2015). Though this list of theoretical frames is by no means exhaustive, it serves as an indicator of the development of theory specific to this area of practice.

Research

In an effort to be concise, the current state of research in this area will be considered as studies and reviews that were conducted within the past 10 years with hospitalized children and adolescents excluding the neonatal period, with an emphasis placed on comprehensive systematic reviews. Recent systematic reviews of music-based interventions with pediatric medical populations tend to include both music medicine and music therapy interventions. Hospitalized children are also included in some reviews that assess the effectiveness of music-

based interventions with children in a variety of contexts (e.g., healthcare, educational, etc.). Overall, it is difficult to make conclusions about the impact of music therapy in particular or of music therapy in comparison to music medicine, since there are currently very few randomized controlled trials of pediatric medical music therapy, and there is considerable heterogeneity among those that do exist.

A rigorous systematic review of 17 randomized controlled trials of music therapy and music medicine used within pediatric healthcare (including educational, outpatient, inpatient, and research contexts) of children aged 1 to 18 years found evidence of greater impact of music on the areas of 'stressful life events' and 'acute and/or chronic physical illness' (Treurnicht Naylor et al., 2011). Furthermore, sessions led by music therapists (as opposed to other health professionals or researchers) were more likely to yield significant results (Treurnicht Naylor, et al., 2011). A systematic review of 19 randomized controlled trials of music medicine and music therapy for pain and anxiety in children aged 1 month to 18 years undergoing medical procedures demonstrated a small to moderate effect size for 'passive' music approaches (i.e., music listening) (SMD 0.35; 95% CI, -0.55 to -0.14: $N = 704$), but not for 'active' music approaches (i.e., active engagement in musicking) (Klassen, Liang, Tjosvold, Klassen, & Hartling, 2008). Though such results seem to suggest that passive experiences of music were more effective than active ones, it is important to note that only two of the seven studies included in the analysis were 'active' approaches, and one of those studies included a significant therapist effect with one therapist being associated with better outcomes than the other therapist. As demonstrated by the results of the Klassen, et al. (2008) review, more high-quality experimental studies using active music therapy approaches are needed in order to make trustworthy comparisons between active and passive experiences of music.

Swedberg Yinger and Gooding (2015) conducted a rigorous systematic review of the impact of music therapy and music medicine interventions on pain and anxiety in children and adults undergoing medical procedures. Eight of the 50 included randomized controlled trials studied pediatric populations, with six of those pediatric studies classified as music medicine and the remaining two as music therapy. The two included music therapy studies were assessed as being at high risk of bias, meaning that results needed to be interpreted with caution. Though they were not able to conduct a meta-analysis on the data due to heterogeneity of the studies, Swedberg Yinger and Gooding (2015) identify one pediatric music medicine study with low risk of bias (as opposed to the high risk of bias in most of the included studies) with a large effect size for pain and anxiety reduction given patient-selected music listening during lumbar puncture (Nguyen, Nilsson, Hellström, & Bengston, 2010).

Within the cost-conscious healthcare environment of the United States, there is a demand to identify and support cost-effective treatment approaches. As evidenced by discussions in virtual and conference-based networking forums, music therapists are called upon to provide evidence demonstrating the cost-effectiveness of their services. DeLoach Walworth's (2005) often-cited cost-effectiveness study is one of the few published examples of the cost analysis

process in a pediatric medical context. Through a comparative analysis of the cost-effectiveness of music therapy as procedural support for non-invasive procedures, DeLoach Walworth (2005) demonstrated that music therapy led to the elimination or reduction of sedation, reduction in procedural times and a decrease in staff member time, and she calculated cost savings per procedure. Expansion of research that examines the cost-effectiveness of music therapy may provide helpful resources for music therapists working in pediatric healthcare contexts where such considerations may be paramount.

An additional area of research that requires further development relates to exploring hospitalized children's views of engaging with music and music therapy. O'Callaghan, et al. (2011) provide one of the few recent studies that specifically targets children's and parents' perspectives about music and music therapy within the context of cancer care. By exploring multiple perspectives through a mosaic research approach, O'Callaghan, et al. (2011) found that musical interactions within families, social networks and electronic connection were perceived as being helpful, and that music therapy and hospital arts were helpful and supportive for families. This study provides an important reminder that hospitalized children and families benefit from engaging with music in multiple ways including music in everyday life and hospital arts, in addition to music therapy services.

Recommendations for Future Development

Considering the current state of practice, theory and research helps clarify which areas of pediatric medical music therapy will benefit from increased scrutiny and advancement.

Clinical Practice

Acknowledging that music therapy clinical practice has evolved and developed significantly within pediatric medical contexts during the past two decades, it is important to stress that theory development and research must also keep pace in order to optimize the development of knowledge in this area (Ghetti, 2015). Music therapists are demonstrating clinical evidence of advanced practices in this area (Dileo, 2015b), and are articulating the need for trainings that impart advanced clinical competencies for a diverse scope of pediatric medical music therapy practice. There is growing need and demand for feasible and sustainable networking opportunities and support systems, as well as assistance and mentoring related to advocacy and program development.

A continual challenge for pediatric medical music therapists in at least several different countries (e.g., United States, Australia, Norway) is the establishment of hospital-funded music therapy positions. Use of 'soft funding' (such as grants and endowments), can be helpful for introducing new programs, but continued reliance on such funding sources can contribute to the marginalization of music therapy within the hospital hierarchy and in some cases may undermine sustainability. An additional consideration for the future growth of pediatric medical music therapy is the need for music therapists to feature more prominently in positions of leadership within medical contexts, while not losing

their close ties to music therapy clinical practice. Individuals in positions of leadership may have a greater ability to be heard by key stakeholders, to make the works of music therapy more visible, and to contribute more pervasively to sustainable growth initiatives.

Theory and research

Since the development of theory often involves systematic philosophical research processes, future recommendations for theory and research will be discussed in combination. Ongoing development of theory in the area of pediatric medical music therapy is important as it should naturally be grounded in actual practice, and it should also integrally inform research. Robb (2012) calls for a shift away from an exclusive focus on studying disparate outcomes of music therapy to instead use theory-based approaches to research that examine theoretically-sound interventions and enable the examination of mediators and moderators that impact the relationship between music therapy and outcomes. For example, when considering how music therapy functions to provide support during invasive medical procedures, researchers will need to determine if the factor of 'engagement' is the primary means for therapeutic outcomes or if it is specifically 'engagement in music therapy' that results in positive change. Theory-informed research enables more sophisticated examination of the mechanisms underlying the complexity of music therapy, to help us understand "how" and "why" questions. A theory-based approach to research also helps pinpoint variables that are amenable to change through certain music therapy interventions, and may therefore be more meaningfully translatable to clinical practice (Burns, 2012).

As noted in the systematic reviews mentioned previously, there is a marked need for a greater number of high quality research studies in pediatric medical music therapy. In reference to experimental research, more rigorous studies of the impact of children and adolescents engaging actively in musicking during music therapy are greatly needed in order to meaningfully compare music therapy to music medicine interventions. Research methodologies with constructivist orientations can contribute to the understanding of child, parental and systemic perspectives on the experience of music therapy and its role within the pediatric medical music therapy context. In addition to exploring user perspectives, qualitative and mixed methods research will be important avenues for examining the reasons why pediatric patients respond variably to music therapy (e.g., attitudes toward the therapist, influence of patient preferences and history, cultural differences).

There is a great need to examine the differential impact of long-term (or 'longer term') music therapy intervention and to determine carry-over effects. Studies should assess durability of change beyond the immediate end of music therapy treatment (Treurnicht Naylor et al., 2011), as there are currently very few examples of music therapy research that has included distal outcomes or has determined the long-term impact of the intervention (e.g., Oelkers-Ax, et al., 2008; Robb, et al., 2014). Assessing the impact of music therapy over time for hospitalized children and adolescents would enable the exploration of whether or

not music therapy acts to buffer against potential traumatization during and/or following hospitalization, and whether positive impacts are maintained over time. Long-term interventional studies and studies with long-term follow-up measures can require more resources than short-term studies, and thus may necessitate larger and more diverse research teams and/or more significant funding.

In addition to considerations regarding long-term follow-up, other methodological factors may improve the quality and integrity of pediatric medical music therapy research. With all forms of research, it is important to engage in transparent reporting of study procedures, including methods of randomization, allocation, and blinding (for randomized controlled trials), and clear description of all aspects of study methods (for all research designs). Similarly, researchers should adhere to respected reporting guidelines such as the CONSORT guidelines for randomized controlled trials, PRISMA statement for systematic reviews and meta-analyses, EPICURE (Stige, Malterud, & Midtgarden, 2009) for qualitative music therapy research studies, and the Reporting Guidelines for Music-based Interventions (Robb, Burns, & Carpenter, 2011). In reference to randomized controlled trials, authors of music-based intervention systematic reviews have identified the following aspects to improve methodological quality: adequate concealment of allocation (Klassen, et al., 2008; Swedberg Yinger & Gooding, 2015), use of control interventions similar to treatment (Klassen, et al., 2008; Swedberg Yinger & Gooding, 2015), blind outcome assessors (Klassen, et al., 2008; Swedberg Yinger & Gooding, 2015), quality statistical analysis and reporting, and adequate powering of studies. Multisite trials may be required in order to provide a large enough sample size to assure an adequately powered study, thus it is likely that there will be continued expansion of international and national multisite studies in the area of pediatric medical music therapy. International multisite cooperation enables cross-cultural examination, increased sample size and broader expertise (Mrázová & Celec, 2010).

In order to enable the completion of a rigorous, contextually-broad research study, it may be helpful to increase the interdisciplinarity of one's research team. Research teams can benefit from the complementing competence of different disciplines as well as the richness and validity of including end users in the process of research development, implementation and/or analysis. Interdisciplinary dialogue and collaboration can promote the cross-pollination of ideas, lending richness and depth to research efforts. An example of such an effort is Music and the Neuro-developmentally At-Risk Infant (MANDARI), a research and clinical practice collaboration promoting international dialogue to expand the theoretical and methodological foundations informing the potentials of music used within the newborn period.

Summary

When considering current obstacles that have slowed or interfered with the development of music therapy in pediatric medical contexts, several different recommendations for future advancement are evident. It will remain important to identify pathways for leadership within pediatric medical music therapy practice, as such pathways may prove to be crucial precursors to enabling future expansion,

while assuring quality and sustainability of music therapy practice and research in this context. An attitude shift may be necessary in some environments where music therapy is currently viewed as an entertaining supplemental service, by providing concentrated efforts to advocate for music therapy as an essential humanizing interaction that enables hospitalized children and adolescents to experience health. As clinicians, researchers, educators, administrators and advocates, we must ensure that the development of theory, practice, and research keep pace with one another to promote optimal development of the profession. We must promote, engage in, and use methodologically-rigorous interdisciplinary research in music therapy, and we must embrace the benefits and potentials inherent in diverse research teams and with diverse research methodologies to enrich our understandings. The field of pediatric medical music therapy is diverse, complex and sophisticated. We are well-posed to build off of current knowledge and take our practice, theory and research to new levels of rigor and evolution in order to better understand and appreciate the rich meaning that music therapy can hold for all involved in the pediatric healthcare context.

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8

The Future of Medical Music Therapy for Adults

Cheryl Dileo

Current Status of Medical Music Therapy in the USA

In this section, a brief overview of medical music therapy in the U.S.A. is presented to provide a context for envisioning and making recommendations for the future.

Breadth of practice

When examining the current status of medical music therapy, one is struck by the breadth of its clinical applications, and specifically the diverse range of medical problems among persons receiving music therapy. These medical problems may be viewed according to the medical specialties within which treatment is provided. Examples of these medical specialty areas are shown in Table 1, but this list is far from complete and continues to grow.

Table 1
Examples of Medical Specialty Areas

Anesthesiology/Pain Medicine	**Neurology**
Cardiology	**Oncology**
Critical Care	**Orthopedics**
Endocrinology	**Otolaryngology**
Gynecology/Obstetrics	**Palliative Care**
Immunology	**Physical Medicine and Rehabilitation**
Internal Medicine	**Pulmonology**
Nephrology	**Radiology**

Stages of treatment

Music therapy is used in all stages of treatment within these specialties as follows: 1) in the prevention of an illness or maintenance of health; 2) in medical diagnostic procedures; 3) in inpatient, intensive and outpatient treatment; 4) in rehabilitation; 5) in palliative care; and in 6) in end-of-life care.

Clinical goals

Physiological or medical goals may be the focus of medical music therapy. However, other clinical goals/outcomes are typically addressed in conjunction with or in lieu of physiological/medical goals. These include: psychological, spiritual, social/familial, cognitive, existential, quality of life and treatment compliance goals. Moreover, an acknowledgement of the interrelationship between medical, psychosocial and spiritual factors may be a core aspect in music therapy assessment and goal-setting.

Theoretical foundations

Medical music therapists base their work on a range of theories. Examples of these theories are presented in Table 2.

Table 2

Examples of Theoretical Foundations Informing Medical Music Therapy Practice (Dileo, 2015)

Biopsychosocial	**Psychophysiological**
Humanistic	**Transpersonal**
Psychodynamic	**Developmental**
Aesthetic	**Medical**
Cognitive-Behavioral	**Systems theory**

Levels of practice

Medical music therapists work at basic and advanced levels of practice. Several authors have proposed levels of practice in music therapy and/or medical music therapy (see Table 3). Furthermore, various factors are used for categorizing levels of practice (Table 4).

Table 3

Examples of Levels of Practice in Music Therapy/Medical Music Therapy

(Dileo & Dneaster, 2005) (End of Life)	(Bruscia, 2014)	(Wheeler, 1983)	(Dileo, 2012) (Pain)
1.Supportive	1.Augmentative	1.Supportive	1.Distraction/ Refocusing
2.Communicative/ Expressive	2. Intensive	2. Re-educative	2.Supportive
3.Transformative	3.Primary	3.Reconstructive	3. Cathartic/ Expressive
			4. Existential
			5.Transformational

Table 4
Factors Used in Determining Level of Practice

Patient Factors	Therapist Factors	Process Factors	Contextual Factors
Clinical Needs	Training and autonomy of therapist	Role of therapist, client, music	Relationship of music therapy to medical treatment (complementary, integrative, etc.)
Preferences Regarding Treatment	Theoretical Orientation	Breadth/depth of treatment goals (As determined by therapist and client)	Length of Treatment Process
Patient's Own Goals	Knowledge (Medical, etc.), Skills		
	Reflexivity		
	(Bruscia,2014; Dileo, 2015)		(Bruscia, 2014; Dileo, 2015)

Other music practices in medical settings

During the past 20 years, a number of other music practices for medical patients and medical settings have emerged. These music practices may be provided by medical professionals or by musicians who may or may not have special training to do so and who may be volunteers or paid staff. These practices are described in Dileo (2013) and Dileo & Bradt (2010).

Current Status of Research in Medical Music Therapy

There are hundreds of studies concerning the effects of music on various outcomes in medical patients. Two approaches comprise the bulk of this literature: music therapy and music medicine. A comparison of these approaches is given in Table 5.

Table 5
Distinguishing Features of Music Therapy and Music Medicine

MUSIC THERAPY	MUSIC MEDICINE
Trained music therapist	**Medical professional** **No specific music therapy training**
Therapeutic process of assessment treatment and evaluation	**No therapeutic process**
Relationship through music	**No relationship through music, although relationship may exist**
Range of music experiences	**Primarily music listening**

Evidence-based practice has been an imperative in the field of medicine in the U.S.A. especially during the past ten years, and this need for evidence has inspired numerous publications of systematic reviews with and without meta-analyses in various journals and also in the prestigious Cochrane Library.
The current Cochrane publications involving medical music therapy and/or music medicine are presented in Table 6.

Table 6
Systematic Reviews Concerning Medical Music Therapy and/or Music Medicine Published in the Cochrane Library

Music interventions for mechanically ventilated patients (Bradt & Dileo, 2014)
Music interventions for improving psychological and physical outcomes in cancer patients (Bradt, Dileo, Grocke & Magill, 2011) (Update in Progress)
Music for stress and anxiety reduction in coronary heart disease patients (Bradt, Dileo & Potvin, 2013)
Music interventions for preoperative anxiety (Bradt, Dileo, Shim, 2013)
Music therapy for acquired brain injury (Bradt, Magee, Dileo, Wheeler, McGilloway, 2010) (update in progress)
Music during caesarean section under regional anaesthesia for improving maternal and infant outcomes (Laopaiboon , Lumbiganon, Martis, Vatanasapt, Somjaivong, 2009)
Music for insomnia in adults (Jespersen , Koenig , Jennum, Vuust, 2015)
Music therapy for end-of-life care (Bradt, Dileo, 2010)
Music for Pain Relief (Cepeda, et al., 2013)

Because the research in medical music therapy is broad and diverse and because there is an increasing number of meta-analyses and systematic reviews, the findings from published studies and reviews is extremely difficult to summarize in this brief article. However, the following very general observations can be made concerning this literature:

1). There are variable degrees of effectiveness or no effects at all reported for music therapy as an intervention with medical patients. When effects are found for music therapy, heterogeneous results typically exist.

2). Most if not all meta-analyses on the effects of medical music therapy point to the need for more studies and more rigorously designed studies.

3). Music medicine studies far outnumber music therapy studies. In addition, besides the Cochrane Library publications which attempt to do so, there are only a few meta-analyses that compare the effects of music therapy vs. music medicine (e.g., Dileo & Bradt, 2005 and Lee, 2015).

4). Most music therapy studies suffer from small sample sizes, lack of follow-up/assessment of long-term effects, lack of attention to potentially significant moderator variables (e.g., culture, musical training, preference for coping), and insufficient attention to cost-effectiveness and safety, important components of evidence-based practice.

5). There is a dearth of research regarding the use of music therapy with some critical and widespread health problems.

Recommendations to Advance Medical Music Therapy in the Future

Theory

It would be helpful to identify if there is an overarching theory that might embrace the diversity of practice in medical music therapy. Might Biopsychosocial theory (Engel, 1979), Integral theory (Bruscia, 2014) or another integrative theory explain the multi-faceted effects of music therapy with medical patients and also function as a meta-theory that can subsume the current range of theories being used? It is essential also to consider theories (and their corresponding research) in the behavioral medicine literature, e.g., especially topics concerning pain, the relationship between personality & illness, and psychological factors that can contribute to or result from specific illnesses.

Research

The following topics/questions should be included in a research agenda for medical music therapy:

1. How music therapy works, including

    -The biomarkers of its effects
    -The mechanisms of action involved
    -The active elements of music therapy

2. The best utilization of music therapy for medical patients, e.g.,

    -How it can be used to the most optimal benefit of patients
    -Potential points in the trajectory of an illness at which music therapy can be most effective
    -The medical conditions, ages, clinical needs, etc. that are best served by music therapy

-the effects of music therapy on the music therapist, e.g., the types of entrainment that may occur between client and therapist

3. The development and standardization of assessments and outcome measures for medical music therapy, including

    -A relevant quality of life assessment
    -Other outcome measures in various domains that are sensitive to music therapy's effects

4. More and more rigorous research

    -An increase in all types of research (quantitative, qualitative, mixed methods, arts-based, etc.)
    -Increased rigor in quantitative research design (e.g., minimizing risk of bias, appropriate randomization methods, allocation concealment, blinding, etc.)
    -Focus on clinical relevance and clinical significance
    -Research that assesses moderator variables, such as culture
    -Use of a theoretical framework in designing research

5. Establish research priorities and new initiatives according to salient population health issues (e.g., governmental priorities)

6. Conduct research on important medical topics for which there is little research

    -Inflammatory processes
    -Diabetes
    -Heart disease (especially as it relates to depression)
    -Women's health issues
    -Hypertension
    -Sleep disorders
    - Patients with combined medical and psychiatric issues; developmental disabilities and medical issues
    -Medical trauma

7. Assess important outcomes not typically included in music therapy research

    -Contraindications of music therapy
    -Cost-effectiveness of music therapy
    -Patient compliance with medical treatment and regimes
    -Outcomes that traditional medical treatment does not or cannot influence (e.g., sense of coherence)
    -Long-term effects of music therapy; mortality
    -Outcomes that assess overall wellbeing, e.g., number of unhealthy days, self-perceived health status, social participations, etc.

8. More research in the role of music therapy in the prevention of disease.

    -Effects of music therapy on health risk factors (e.g., depression)
    -Effects of music therapy on health protective factors (e.g., social integration)
    -Potential effects of music therapy in health screening compliance.

To accomplish some of the aforementioned goals, there will be a pressing need for governmental funding of music therapy research, e.g., for large RCT's, and large multi-site and international studies.

Medical Music Therapy Practice

The following recommendations are made to address clinical and professional issues of music therapy practice in the future.

A focus should be on the development and testing of new and creative music therapy interventions for medical patients, fine-tuning existing music therapy interventions for medical patients, and translating research evidence into practice. There is a need to continue to expand the range of clinical applications of music therapy, populations served and strategies for illness prevention.

As mentioned previously, there are other types of music practices in medical settings offered by medical professionals and/or musicians. In the light of potential and ongoing confusion regarding the differences among these practices, it will be increasingly necessary to articulate to the medical community and to potential consumers music therapy's uses and benefits based on quantitative and qualitative evidence and how music therapy differs from other music practices. It is important to situate music therapy within the range of these practices and determine how music therapy is best used. For example, will a function of the music therapist include assessing patients to determine the type of music practice that is most appropriate for them? It will be important for music therapists to determine how to work most effectively with other practitioners to best meet the needs of the patient.

Training in Medical Music Therapy

Because of the complexity of practice as well as the breadth and depth of knowledge and skill required for competent practice, medical music therapy should be designated as an advanced practice. Training for medical music therapy will thus comprise an advanced degree, advanced specialty training and clinical experience beyond the entry level. Competences for medical music therapy have been published (Dileo, 2015; Dileo & Loewy, 2005).

There is also a need to educate medical professionals regarding music therapy, and formal training programs (e.g., continuing medical education courses) need to be forthcoming. There is also a need for music therapists to develop and offer training programs for medical professionals who want to use or incorporate music in their practices, as well as musicians who are interested in performing in healthcare settings.

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9

The Future of Medical Music Therapy In Neuro-Rehabilitation

Wendy L. Magee

Background

Acquired Brain Injury (ABI) is an umbrella term that includes a range of conditions stemming from rapid onset of brain injury. The underlying causes range from: traumatic injuries, caused by head injury or postsurgical insult; vascular accidents including hemorrhagic or ischemic strokes and subarachnoid hemorrhage; cerebral anoxia caused by a starvation of oxygen within the brain; toxic or metabolic events such as hypoglycemia; and viral infection or inflammation (Royal College of Physicians, 2004). Other conditions that involve acquired brain injury to some degree, but follow a different trajectory from ABI from rapid onset and may be neuropalliative in nature, include Parkinson's Disease, Multiple Sclerosis, Huntington's Disease and Amyotrophic Lateral Sclerosis/Motor Neurone Disease (also known as Lou Gehrig's Disease)..

The purpose of rehabilitation with people with rapid onset ABI is to restore the person's functioning to levels comparable to those the person had prior to brain injury, and to enable optimal levels of independence. This is different from the goal of rehabilitation with a person with a degenerative disease. In these cases, the purpose of rehabilitation is to maintain the person's current level of functioning for as long as possible and to provide technological aids as functional levels degenerate. This paper will only discuss music therapy with people with ABI from non-degenerative causes.

People with acquired brain injury through accident or disease can be affected across the physical, communication, cognitive, psychosocial and sensory domains. As physical function is important for individuals to optimize their independence and quality of life, improving walking gait and upper extremity (hand, arm, shoulder) function is a priority for people with ABI (Bradt, Magee, Dileo, Wheeler & McGilloway, 2010). Cognitive deficits are very common but less visible and therefore can go undetected. Difficulties with attention, memory, learning and executive functioning (the ability to plan and execute tasks) can all be impaired thus affecting one's ability to manage the environment, everyday tasks and hold down a job. Communication difficulties are common after brain injury: speech and language (expressing and understanding) are often impaired as well as social pragmatic communication skills. Mood and behavior disorders remain one of the greatest barriers to reintegration back into the community (Giles

& Manchester, 2006), as these impairments affect motivation to engage in rehabilitation. When combined with deficits in reasoning and insight that can limit the recovery of lost functions, the individual is at risk of entering into a cycle of depression (Bradt, et al., 2010). Behavioral disorders stemming from frontal lobe involvement can result in serious limitations, including irritability, aggression, disinhibition, reduced anger control, rigidity, social awkwardness, impaired social awareness and egocentrism (Magee, et al., 2011). The combination of any of these impairments across domains risk leaving the person isolated with a reduced quality of life.

The Current Status of Music Therapy in Neuro-Rehabilitation

A number of models influence music therapy practice in neuro-rehabilitation including music-centered (Gilbertson, 2006), psychotherapeutic (Jochims, 2004), neurobehavioral (Magee et al., 2011), and neurological (Thaut & Hoemberg, 2014) models. The most influential model at the current time is Neurologic Music Therapy (NMT, Thaut & Hoemberg, 2014)) as this model provides standardized goal-oriented methods that aim to address functional needs stemming from neurological injury. As the methods have been standardized, they are well suited to both practice and to research for which standardized protocols are required. NMT methods span three primary domains: sensorimotor, speech and language, and cognitive. NMT requires advanced clinical training at the current time, meaning that it is not within a music therapist's scope of skills following entry-level training.

The Cochrane review of music therapy with acquired brain injury (Bradt, et al., 2010) provides an overview of the research status of music therapy with this population, current to 2010. Cochrane reviews provide meta-analyses of quantitative research (predominantly randomized control trials) on a specific intervention with a defined population. Although Cochrane reviews have been considered contentious in music therapy as they exclude designs and methodologies that are favored in music therapy research (e.g., single subject designs; qualitative methodologies; mixed methods approaches) they are considered the highest level of evaluative evidence for a health care intervention in medicine for a number of reasons. First, rigorous criteria to minimize bias are used for evaluating studies to be included, such as procedures for randomization, allocation concealment, and blinding of data collectors. Second, only studies with relevant and meaningful outcomes for the population under investigation are included and only studies that use standardized measures. Lastly, analyzing combined studies increases the number of cases being examined thus providing greater power in the results. This paradigmatic stance is the point of contention for music therapy, and yet these reviews provide succinct overviews that are helping to identify problems with research on this topic. The importance of Cochrane findings in rehabilitation should not be underestimated.

As the future of music therapy in neuro-rehabilitation will continue to rely on these important meta-analyses, I have used these as a guide in this paper. Also, the existing review (Bradt, et al., 2010) is in the process of being updated at the

current time (Magee, Clark, Tamplin & Bradt, in preparation) and therefore provides a guide to recent developments and future directions.

Bradt, et al. (2010) included just seven studies from an initial pool of 3855 citations that emerged in the search for studies on music therapy with acquired brain injury. Three of these studies examined Rhythmic Auditory Stimulation (RAS) with people with stroke. RAS is an NMT method that uses the physiological effects of rhythm to drive motor control, particularly functional, stable and adaptive gait patterns in people who have significant gait deficits due to neurological impairment (Thaut & Hoemberg, 2014). The meta-analysis of two studies with 98 participants indicated that RAS *may* be effective for improving gait velocity, cadence, stride length and stride symmetry in stroke patients. The third RAS study examined its effects on upper extremity function and a meta-analysis found that RAS may also be useful in improving upper extremity function in hemiparetic stroke patients. Both of these functional motor outcomes are important for people who are in rehabilitation and working towards improving their independence to return home and back to work. The support for using music to improve movement was furthered by one more study that examined playing music using music technology devices that encouraged functional arm movements. The overall recommendations were "….that rhythm may be a primary factor in music therapy methods facilitating functional gains with this population" (Bradt, et al., 2010, p. 11)

Other outcomes that were included in the Cochrane review, in addition to gait and upper extremity function, were communication, behavioral outcomes (specifically orientation and agitation), and pain. These studies (n=3) could all be included because they met the rigorous criteria of the Cochrane reviews. However, as each study was the sole study to examine a specific outcome, the results could not be pooled. Herein lies the benefits and drawbacks of using this type of evidence. It can be beneficial to conduct reviews of this type as they identify research on the topic and they clarify the most relevant outcomes for music therapy. However, the drawback is that if meta-analysis is not possible, the results indicate that there is "no" evidence. Bradt et al. (2010) determined that the evidence at that time did not support the use of music therapy to address neurocommunication disorders, mood states or interpersonal skills: "In the absence of sufficient evidence, recommendations for clinical practice cannot be made for these outcomes" (p. 11).

Recommendations for future research indicated that RAS studies should examine dosage and treatment effects, compare RAS with other gait-training methods, and examine treatment in long-term outpatient or community-based settings. Quite plainly, it was identified that more music therapy research with ABI was needed, but that a number of design issues needed to be addressed. These included ensuring that control groups be used in studies, using larger samples sizes and employing designs that minimize bias. A call was made for research that examined the effects of music therapy on agitation, cognitive orientation, mood and emotions, social skills, activities of daily living and adverse events.

Update to the Status of Research in Music Therapy in Neuro-Rehabilitation.

As the Cochrane review is being updated at the moment, insights from the update (Magee, Clark, Tamplin & Bradt, in progress) can be provided to indicate how the field is progressing and the future directions it is taking. In a significant change from the previous review, this updated review includes studies in which music-based interventions have been delivered by professionals other than music therapists. The decision to open up the review in this way was made as we believed that studies from the related fields of neuroscience and music psychology might improve the overall quality of the studies and also increase the number of studies for inclusion. In addition, we believed that including studies that focused on ***music interventions*** rather than ***music therapy*** interventions would provide better evidence for the effects of music, rather than examining the effects of "music plus a therapeutic process."

The updated review will include a larger number of studies (n=25 at the time of going to press), with pooled results (and thus meta-analysis) from a total of 19 studies. This means that any "evidence" for music therapy will be based on larger numbers and therefore be stronger. The number of outcomes has also been expanded from just gait and upper extremity function to include communication (naming and repetition), cognition (memory and attention) and mood state. The increased range of outcomes is promising and more reflective of clinical practice as it is taking place in rehabilitation settings. However, it is still disappointing that a greater number of studies could not be included in the meta-analysis. In some cases, studies could not be included simply because the outcome measures have been used slightly differently across studies. For example, four studies used the same outcome measure to examine mood state. However, each study used a slightly different version of this measure and provided only scores from subsections of the measure rather than providing total scores. Thus, although we will have some support for using music therapy to address mood states in ABI, it seems that the evidence for music therapy as a psychotherapeutic intervention with this population remains elusive.

Future Needs

The Cochrane review update (Magee, et al., in preparation) points us in the direction that music therapy is progressing in neuro-rehabilitation. The theory underpinning the use of music as a treatment intervention in neuro-rehabilitation will continue to draw from allied fields and epistemologies, particularly physiology, neuroscience, medicine and the communication sciences. Clinical practice for music therapists working in neuro-rehabilitation will continue to require advanced skills training in order to meet highly complex needs of neuro-rehabilitation populations and because music therapy interventions in these settings demand the clinician to be versed in methods that cross the boundaries of allied professionals. An expanded scope of skills is required in order to address outcomes in the domains that are meaningful to the patient, that include motor functioning, cognition and communication, in addition to emotional functioning.

A number of recommendations can be made for research in this field considering current trends in clinical practice and the emerging research. In line with several existing research studies, future music therapy research in neuro-rehabilitation should continue to pursue neurophysiological outcomes in addition to behavioral outcomes, including (but not limited to) heart rate, respiration rate and electroencephalogram (EEG) responses. This will broaden the evidence base to support the use of music with brain-injured populations. Future research needs to examine outcomes that can be compared *between* studies so that the results of specific outcomes can be pooled in meta-analyses and contribute to the evidence base. That is, it would be beneficial if the same outcome measures are used consistently across different studies. Research is needed with larger sample sizes to increase the power of the results, suggesting that investigations that span multiple sites are needed. Lastly, more research is needed that reflects clinical practice and shows the benefits of music therapy across a range of functional domains. A study by Paul & Ramsey (1998) that examined the effects of instrument playing on active range of motion in arm movements, illustrates how interdisciplinary collaboration between occupational therapy and music therapy not only identified meaningful outcomes (range of motion), but measured these outcomes effectively. More interdisciplinary collaborations in research will help to improve the relevance of music therapy in rehabilitation, thus supporting a case for including it as a standard part of rehabilitation programs.

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10

The Future of Music Therapy for Persons with Dementia

Hanne Mette Ridder

Dementia

Dementia is a syndrome affecting memory, thinking, behavior, and activities of daily living, and is one of the major causes of disability and dependency among older people (World Health Organization, 2015). The physical, psychological, social and economic impact of dementia on the individual is massive. This disease also affects the individual's caregivers, family and community; with 47.5 million people with dementia worldwide, the impact on entire societies is thus substantial. Accordingly, the World Health Organization (2015) has called for a global and coordinated action to increase the awareness and understanding of this public health challenge.

Agitation is the most significant behavioral and psychological symptom that contributes to patient distress and caregiver burden in nursing home residents (Brown, Howard, Candy, & Sampson, 2012; Cohen-Mansfield & Libin, 2004; Zuidema, Koopmans, & Verhey, 2007), with agitation seen in the majority (48%–82%) of nursing home residents (Zuidema, et al., 2007). The manifestations of agitation include aggressive or inappropriate behavior, such as hitting, screaming, repetitive conduct or wandering, and are thought to be caused by neurocognitive disorders or pain (Cohen-Mansfield et al., 2012.

A Biopsychosocial Perspective on Agitation in Dementia

Understanding agitation in dementia as purely a result of neurodegeneration often leads to treatments that focus primarily on symptom alleviation, such as behavior management and/or psychotropic medication, especially antipsychotic drugs (Ballard, Waite, & Birks, 2012; Bergh, Engedal, Røen, & Selbæk, 2011; Rolland, et al., 2012). Treatment with psychotropic medication shows a modest reduction in symptoms, but may lead to severe, adverse effects and increased mortality (Ballard, et al., 2012). The addition of a psychosocial and person-centered perspective to the biological explanation of agitation may bring new insights, for example, the understanding that agitation is also caused by the person's reactions to unmet psychosocial needs and attempts to deal with or communicate these needs (Kitwood, 1997; Woods, 2001). This understanding is supported by the fact that the prevalence of agitation is predicted

by the culture of care in the nursing home (Stein-Parbury, et al., 2012; Zuidema, et al., 2007).

Person-Centered Care and Music for Decreasing Agitation

From a biopsychosocial perspective, psychological interventions and staff-training programs that focus on all aspects of the person are recommended and useful for decreasing agitation (Ballard, Corbett, Chitramohan & Aarsland, 2009; Guthrie, Clark, & McCowan, 2010; Seitz, et al., 2012; Stein-Parbury, et al., 2012). In their health technology assessment which included a review of 160 studies, Livingston and colleagues (2014) investigated the clinical and cost-effectiveness of sensory, psychological and behavioral interventions for managing agitation in older adults with dementia. The researchers concluded that "Person-centered care, communication skills and Dementia Care Mapping (all with supervision), sensory therapy activities, and structured music therapies reduce agitation in care-home dementia residents" (p. vi). Further reviews on non-pharmacological interventions highlight the positive effects of music and music therapy on agitation (Hulme, Wright, Crocker, Oluboyede, & House, 2010; Kverno, Black, Nolan, & Rabins, 2009; Spiro, 2010; Wall & Duffy, 2010).

Evidence-Based Research on Music and Music Therapy

The positive effects of music on agitation or other behavioral and psychological symptoms in dementia could not be confirmed in a 2011Cochrane review on this topic; the authors of this review indicated that the quality of the ten included studies was too poor methodologically to draw conclusions (Vink, Bruinsma, & Scholten, 2011). However, in a later narrative synthesis systematic review, McDermott, Crellin, Ridder, & Orrell, (2013) concluded that music therapy reduces short-term agitation, Furthermore, in their meta-analysis, Ueda, Suzukamo, Sato, & Izumi (2013) found a moderate effect of music on anxiety and behavioral symptoms, specifically if the music intervention was implemented for more than three months.

Effects of music interventions on various outcomes in persons with dementia are also emphasized in interdisciplinary studies. It has been found that music increases engagement and engagement duration, specifically in "one-on-one socializing" (Cohen-Mansfield, et al., 2011, p. 863) and that music listening or singing in daily care situations reduces agitation (Brown, Götell, & Ekman, 2001; Casby & Holm, 1994; Gerdner & Swanson, 1993; Hammar, Emami, Götell, & Engström, 2011; Remington, 2002; Sung & Chang, 2005; Tabloski, McKinnon-Howe, & Remington, 1995; Thomas, Heitman, & Alexander, 1997; Zare, Ebrahimi, & Birashk, 2010) and leads to a higher degree of compliance (Clark, Lipe, & Bilbrey, 1998; Thomas, et al., 1997).

Recent RCTs point to the effects of group music therapy on reducing depression (Chu, Yang, Lin, Ou, Lee, O'Brien, & Chou, 2013) and for reducing agitation at the same level as occupation therapy (Vink, Zuidersma, Boersma, de Jonge, Zuidema, & Slaets, 2013). In addition, an explorative RCT showed that

agitation disruptiveness increased during standard care but decreased after six weeks and 12 individual music therapy sessions. This difference was significant ($p = 0.027$), with a medium effect size (0.50). Furthermore psychotropic medication was prescribed significantly more often during standard care than during music therapy ($p = 0.02$) (Ridder, Stige, Qvale, & Gold, 2013).

As the positive results of these recent RCTs concerning the effects of music therapy in dementia care are not yet included in updated meta-analyses, clear evidence is still missing at this level, however, it is expected that these new findings will help provide greater support for and more precise answers to questions regarding treatment and effects. In addition, these promising results may influence national clinical health guidelines, where music therapy and other types of non-pharmacological treatment are not yet included, thus rendering medical treatment as the only recognized treatment option.

Clinical Music Therapy Practice and Theory

Music therapy clinical practice with older adults or in dementia care is described in recent music therapy handbooks by Bunt & Stige (2014), Eyre (2013) and Wheeler (2015) in chapters by Abbott (2013), Young (2013) and Ridder & Wheeler (2015). Other seminal books serve also as resources for clinical applications of music therapy in dementia care (Aldridge, 2000; Belgrave, Darrow, Walworth & Wlodarczyk, 2011; Bright, 1997; Clair & Memmott, 2008).

Music therapy clinicians have described specific methods and techniques in dementia care, e.g., the use of singing and voice work (Ridder, 2003, 2011) and clinical improvisation (Ridder & Gummesen, 2015). McDermott, Orrell & Ridder (2014) have suggested a psychosocial model of music in dementia care based on qualitative interviews with care home residents, relatives, staff and music therapists on meaningful musical experiences. This model proposes that persons with dementia preserve individual preferences, and by sustaining musical and interpersonal connectedness, the person feels valued and quality of life is maintained.

Two recent assessment tools have also been tested for both community and clinical contexts respectively. Vanstone and colleagues (2015) have developed an informant-report questionnaire for measuring engagement with music through the following six subscales; Music in Daily Life, Emotional Listening Experience, Musical Performativity, Musical Consumer Behaviour, Responsive Music Listening, and Musical Preference. In addition, McDermott, Orrell & Ridder (2015) have developed the *Music in Dementia Assessment Scales* that measure five visual analogue scale items: Levels of Interest, Response, Initiation, Involvement and Enjoyment either pre/post music therapy by proxy raters or during music therapy by the music therapist.

Bunt & Stige (2014) have described the growth of music therapy and have emphasized the sustaining of collaborative, cross-professional work. They suggest that professional music therapists involve something more than competent performance of prescribed procedures. Music therapy practice is therefore seen to balance between direct and indirect work in community as well as in clinical

contexts. As an example, direct music therapy work often implies referral of a person with dementia to music therapy treatment with an expected outcome on e.g., agitation, and based on establishing a relationship through music. On the other end of the continuum is indirect work that includes the music therapist's guidance and supervision of caregivers in how to integrate music in daily activities and in care. The music therapist aims at supporting the relationship between the person with dementia and relatives, caregivers, and/or the community.

Other Current Developments in Music

Technological development has given new perspectives to research in music and the brain and body. In neurocognitive science particularly, new knowledge has been gained from research on the healing power of music (Altenmüller & Schlaug, 2012; Thompson & Schlaug, 2015), brain correlates and music-evoked emotions (Koelsch, 2014), and insights into music, emotion and dementia (Särkämö, et al., 2012). In a review of the literature, Croom (2015) explores how music practice and participation can function as useful means for positively influencing emotions and well-being. Although not music therapy, the *Music and Memory Project* developed by social worker, Dan Cohen, has attracted worldwide interest, and the documentary *Alive Inside* (2014) about this project received the audience award at the Sundance Film Festival in 2014. This seemingly global interest in and increased awareness of the function of music from very different professions and scientific fields has contributed to the development of a rich body of knowledge of great value for the music therapy profession.

Recommendations

The increased body of knowledge on how music affects consciousness, wellbeing, physiological arousal, memory, cognition, and social cohesion in people with dementia and their caregivers points to music therapy as an important intervention in the global action for persons affected by dementia. As a consequence, there is a need for the integration and amalgamation of recent evidence-based research and the rich knowledge base of music applications. This puts a demand to interdisciplinarity within a biopsychosocial approach to dementia care. For the music therapy profession this demands competences to build links within the multidisciplinary team and between various approaches to music therapy. Bunt & Stige (2014) describe this as relying on a culture of hybritidy, striving towards reflective integration of theory and practice. This may involve defining music therapy within a broad biopsychosocial understanding, approaching each person with dementia from a person-centered approach. The consequence is increased demands on specialized professional music therapists who are well-informed by the body of knowledge within the music therapy discipline, but also within the culture of dementia care. The music therapist must have the competences to carry out music therapy treatment carefully tailored to

the person with dementia, but also to advise and guide other professionals and caregivers in how they can support and communicate with the person with dementia and increase quality of life. The music therapist must be able to work directly with each person as well as indirectly; in clinical contexts as well as in community contexts.

In summing up, an overall integrative approach is important in order to continue the promising development of music therapy in dementia care. This can be summarized in the following recommendations:

1. Person-centered approach to the individual with dementia
2. Biopsychosocial approach to dementia care
3. The music therapist as a specialized professional
4. Interdisciplinarity
5. Integrative approach to research, theory and practice

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11

The Future of Music Therapy for Persons with Autism Spectrum Disorder

Amelia Oldfield

Introduction and General Literature on Music Therapy for People with Autism

Music therapists have been interested in working with people with autism for many years. In the 1970s, both Alvin (1975) and Nordoff & Robbins (1971) wrote about their clinical experiences with children with autism, highlighting the special interest shown to music by these children. Stevens and Clark (1969) wrote about the positive effects of a research investigation where five children with autism received music therapy treatment.

Since that time, there have been numerous publications, including general texts and case studies on this subject from all over the world; indeed it is probable that this is one of the clinical areas that has received the most attention in the music therapy literature. Examples of publications in the last 50 years include: Euper (1968), Mahlberg (1973), Birkeback & Winter (1985), Gustorff & Neugebauer (1988), Mengedoht (1988), Weber (1991),Toigo (1992), Gembris (1995), Howat (1995), Storey 1998, Jones & Oldfield (1999), Woodward (1999), Warwick (2001), Bailey (2001), Bull (2008), Oldfield (2008), Oldfield (2011), and McTier (2012).

Literature on specific approaches

In addition to these publications, some music therapists have elaborated specifically-focused approaches for working with people with autism. In the 1970s and 1980s, Benenzon (1982) developed a music therapy approach based on his particular understanding of autism. One of his beliefs was that children with autism had missed out on the full spectrum of sensory experiences while they developed in utero. He opened several clinics in Argentina where children with autism and their parents received music therapy treatment which included natural sounds, such as running water, for example, to replace the 'missed' sensory experiences.

Other music therapists, such as Lecourt (1991), Kim (1996) and Levinge (2015) have used psychoanalytic or psychodynamic music therapy approaches to working with people with autism, whereas Nordoff-Robbins-trained music therapists, such as Brown (1994) and Robarts (1996), have used music-centered approaches.

Schumacher (1994) developed an approach in which the music therapy treatment is linked to children's developmental stages and sensory development, and Ruyters & Goh (2002) employed visual aids and structures within music therapy sessions for children with autism within the context of a special school. A number of music therapists have been particularly interested in vocalizations or speech development in their work with people with autism. Staum (2002) and Miller & Tocca (1979) used sung speech and adapted forms of melodic intonation therapy in music therapy sessions. Clarkson (1998) incorporated guided imagery and music into her work.

Wigram (2000) and Oldfield (2006b) developed different music therapy assessments to help multidisciplinary teams diagnose autism. Music therapy often sheds new light on people's strengths and difficulties, and these assessments are particularly useful for 'borderline' cases where professionals may disagree about diagnoses.

Carpente (2009) developed a specialized way of working with children with autistic spectrum disorder where he combined a Nordoff –Robbins approach with a developmental, individualized and relationship-based intervention. More recently, there has been an emphasis on the importance of including parents in the treatment of young children with autism (Oldfield 2006a; Thompson, 2012).

Textbooks and research reviews

During the last 15 years, there have also been a number of published music therapy textbooks devoted to working with children with autistic spectrum disorder (ASD). Berger (2002) has based music therapy practice with children with autistic spectrum disorder on theories of sensory integration. Oldfield (2006a) has described an interactive and positive approach using live, improvised music-making with young children with ASD and their parents. Kern & Humpal, (2012) have edited a book that gathers together descriptions of a range of music therapy interventions with young children with ASD with an emphasis on evidence-based practice.

There have also been a number of published research reviews including the following.

- Whipple, (2004): a meta-analysis of articles refereed or published in the USA. 10 articles that met criteria were included.
- Gold, Wigram & Elefant, (2006): Cochrane Review: Music Therapy for autistic spectrum disorder (Review). Criteria resulted in the inclusion of only three articles.
- Simpson & Keen (2011): Music Interventions for Children with Autism: Narrative review of the literature. 20 articles between 2009 and 2010 were included.
- Geretsegger, Elefant, Moessler & Gold (2014): Cochrane review (update of previous 2006 review) Music therapy for people with autism spectrum disorder. 10 studies with a total of 165 participants were included.

All of these reviews concluded that while there were indications that music therapy was effective with children with ASD, more research with larger numbers of participants was necessary.

New Initiatives: the Time A investigation

This is an ongoing, randomized controlled trial (RCT) of improvisational music therapy's effectiveness for children with autism spectrum disorder (Geretsegger, Holck & Gold, 2012). The project is headed by Christian Gold at the Grieg Academy Music Therapy Research Centre (GAMUT) in Norway. Its aim is to include over 300 children with ASD between the ages of 4 and 7 from 10 different sites across the world (USA, Australia, Brazil, Korea, Israel, Norway, Austria, Italy, and 2 sites in the UK: London Imperial and Anglia Ruskin University, and Cambridgeshire Schools). It is anticipated that this will be the largest non-medical RCT trial to be undertaken so far with children with autistic spectrum disorder. Half the children enrolled in the study will receive music therapy treatment for five months and the other half of the children will serve as controls. For those who receive music therapy, half will receive weekly sessions, and the other half will receive three sessions per week. The parents of all the children will receive three counselling sessions. Change is being evaluated through the Autism Diagnostic Observation Schedule Tests (ADOS) and the Social Responsiveness Scale (SRS). Testing takes place: pre-treatment, after 3 months, at the end of treatment (after five months) and after a year.

Reflections on a clinical example

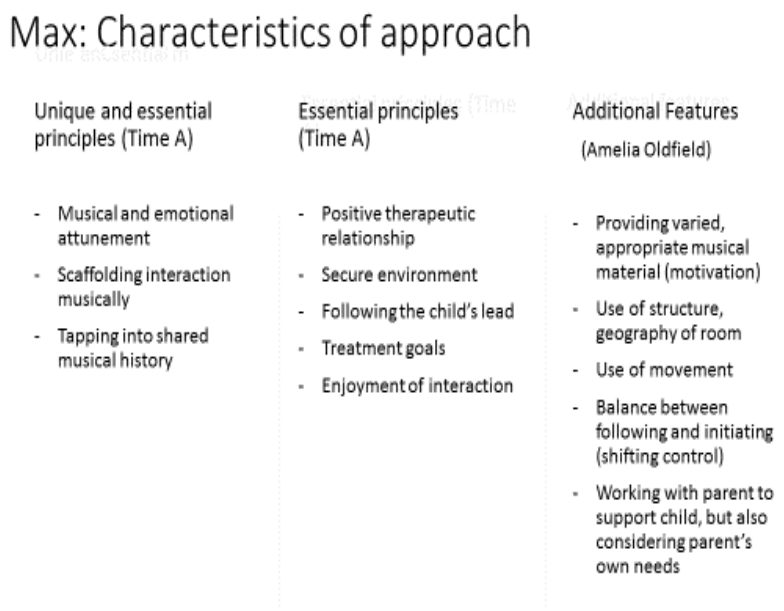
Max was three years old when he started weekly, individual music therapy sessions with his mother and with his music therapist, Amelia Oldfield. He already had a diagnosis of autistic spectrum disorder. Initially he was very reluctant and fearful to engage in any way and had no language and very few vocalizations. Initially, he would not play anything except very tentative, occasional single notes on the piano. However, it was clear that he was aware of the structure of tunes, as he occasionally clapped hands at the ends of phrases. Right from the beginning, although he did very little, the music therapist felt that he was very aware of and engrossed in her music making, easily recognizing familiar tunes and phrases.

The following descriptions that accompanied two short video clips of music therapy sessions show how both Max and his mother progressed during the music therapy sessions.

Clip 1: After 2:5 months	Clip 2: After 1 year
-Max plays the piano and the music therapist tries to give his playing a shape. Then he pushes her hands away, and the music therapist tries to engage in a playful exchange of single notes.	-Max plays the drums very enthusiastically with both hands and then the beaters. -His interest is intense and sustained.
-The music therapist gets up to dance singing that Max is playing for her. He then briefly joins in the dancing.	-He is aware of the music therapist's piano accompaniment and their phrases are synchronized.
-Mum observes and watches, but is shy about playing herself. The work is discussed after each session and she seems positive-but the music therapist is not always sure what she thinks.	-During their clarinet/dancing exchange, he follows, initiates and takes turns.
- A week after this session, Max's mother asks whether Max could have several music therapy sessions each week instead of just one.	-He follows verybal instructions and makes verbal comments: "Marching stopped." -Mum is engaged in playing and gently encourages Max. She tells the music therapist that she tries some of the music interactions with him at home.

Max made a great deal of progress during the eighteen months he attended music therapy sessions. He became more engaged, more spontaneous in his communication and developed vocalizations and then speech. His mother gradually became able to trust the music therapist and developed new playful ways of communicating with her son; she used these both during the music therapy sessions and at home.

When reflecting about the future of improvisational music therapy with young children with autistic spectrum disorder, it is interesting to think of the case of Max in relation to the comments made by Geretsegger, et al. (2015) regarding the specific characteristics of this music therapy approach with young children with ASD. In this article, the authors identified some aspects of the work that they consider "unique" and others that they consider "unique and essential." The following table identifies that the work with Max covers most of the "principles" identified in this article, but that there are a number of "additional features" that are important to this work and but are not specifically mentioned in the article.



Most of these additional features are also mentioned in the music therapy literature describing case studies with this client group (for example: Oldfield, 2006a; Oldfield,Tomlinson & Loombe, 2015). Considering the large number of music therapists in nine different countries engaged in working with children with ASD between the ages of 4 and 7 for the Time-A RCT trial, it is likely that the characteristics of improvisational music therapy with these clients will become clearer, leading to better practice and enhancing the quality of music therapy interventions. Many of the music therapy clinicians involved with this Time-A investigation train music therapists as well: this implies that these new methods of working will be taught to students, and the ideas will spread quickly into clinical practice.

Thoughts for the Future

Overall, the outlook for music therapy with people with ASD looks positive. This is partly because of the relatively long history of music therapy interventions in this area which have resulted in a large body of literature and a wide range of interest in this field. This is supported by two Cochrane reviews and many research investigations including the current International Time-A Randomized Control Trial.

People with autism along with their relatives form a a large lobbying group. This means that it is possible for music therapists to get direct feedback from families and clients who may be exceptionally able and outspoken. However, music therapists working in this area should be aware that their work may be affected by shifting definitions of autism. For example in the USA the DSM5 recently changed to "autistic spectrum disorder" rather than separating autism from Asperger syndrome. The World Health Organisation is currently

updating ICD10. Similarly, ongoing research into ASD may have an influence on what treatment and services are considered important in the future.

Finally, the results and literature that will come from the music therapy Time-A Music Therapy RCT trial in the next few years are likely to have a strong impact on work in this field in the future.

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12

The Future of the Bonny Method of Guided Imagery and Music

Denise Grocke

Introduction

Guided Imagery and Music (GIM) is an umbrella term that covers a range of approaches in receptive music therapy. Originally the acronym GIM was associated solely with the model developed by Helen Bonny (Bonny 1975/2002); however, as many types of GIM were being practiced in the 1990s, there was an impetus to give the model her name, and in 2000, it became known as the Bonny Method of Guided Imagery and Music.

The Bonny Method GIM session protocol is recognized internationally and is practiced widely in the US, Europe, the UK, South America, Canada, Australia and Asia. A session comprises several segments:

1. A pre-music discussion (prelude) in which client and therapist together determine the focus for the music and imagery component of the session.
2. A relaxation induction given by the therapist during which the client moves into an altered state of consciousness (ASC), with eyes closed.
3. The therapist chooses a GIM music program (of predominantly classical music) of 30-45 minutes duration; the client images freely and describes visual imagery, emotions, feelings, memories, and other phenomena that are evoked by the music; the therapist enhances the experience by asking open-ended questions, such as "what is that like for you?" The therapist does not direct or influence the client's imagery directly.
4. At the end of the music program, the client is brought out of the ASC to a "normal" state of consciousness, although the client is still altered to a certain degree by the experience.
5. There is a time for processing or integrating the experience (normally assisted by the client drawing a mandala).
6. Finally there is a discussion of the entire session, with the therapist often asking "what stands out for you from the session?" (Ventre, 2002).

Research

Early research in the Bonny Method established the therapeutic benefits for medical conditions, such as hypertension (McDonald, 1990) and rheumatoid

arthritis (Jacobi & Eisenberg conducted in 1994; published 2000-2001). A key factor in early research was the number of sessions considered essential for change to occur. Bonny herself advocated for a minimum of six sessions, and this number was adopted by McDonald. Jacobi and Eisenberg, however, extended their protocol to ten individual Bonny Method sessions.

McKinney, et al. (1997) in their study of normal healthy adults offered six sessions bi-weekly, so that the effect of the therapy extended to 12 weeks. Their study of 28 participants demonstrated lower scores on depression, fatigue and cortisol levels (indicating lowered stress) following GIM, and these benefits were maintained at follow-up.

Levels of depression were also improved in two studies conducted in Sweden by the team Wrangsjö and Körlin (1995), and Körlin and Wrangsjö (2002). Their participants were adults with mild-moderate mental disturbance who received varying number of Bonny Method sessions.

Individual Bonny method sessions have been trialled with cancer patients. Burns' (2001) randomized controlled trial incorporated ten Bonny Method sessions, and demonstrated improvements in mood and quality of life that were maintained at a 6-week follow-up. In Bonde's (2004) study of six women with cancer, anxiety decreased for five of the six, and depression was reduced for four at follow-up. Further gains were made in improved coping and quality of life (Bonde, 2005).

When providing Bonny Method sessions for clients who are vulnerable or unwell, it is common practice to adapt or modify the session according to the person's needs. Such adaptations/modifications typically include a shorter session, with a shorter music program. The music programs are shortened or adapted by the therapist through eliminating pieces, using short programs or programming extemporaneously in the moment (Muller, 2010; 2014).

Recent studies demonstrate that the Bonny Method, when adapted/modified for certain serious conditions, still demonstrates significant effects. The largest study to date was conducted by Maack in 2012, with a sample of 120 women suffering from complex Post-Traumatic Stress Disorder (PTSD). The study was designed as a multi-site, international, randomized controlled trial. An adapted form of the Bonny Method of GIM was compared with Psychodynamic Imaginative Trauma Therapy (PITT), and a control condition. Results indicated greater improvement in symptoms of Complex PTSD, dissociation, and quality of life, as well as significantly fewer interpersonal problems for both the GIM treatment group and the PITT group when compared to the control group; however, the Bonny Method was superior to PITT. Maack adopted a variety of adaptations of the Bonny Method in her approach, including verbal sessions, short pieces of music, music not from the classical tradition, short relaxation induction and dispensing with the drawn mandala.

Adults on stress leave from work (n=20) were the focus of Beck's (2012) study. She relied on an adapted form of the Bonny Method in the randomized controlled trial. In her protocol, a longer pre-music discussion was used, then a short piece of music, often not from the classical tradition. She measured mood, sleep, anxiety, wellbeing and the physical symptoms of stress (salivary IgA). The

adapted form of the Bonny Method of GIM generated significant effects when compared to the control condition. A follow-up one year later indicated that those who received the adapted form of the Bonny Method had successfully returned to work, whereas those in the control condition had relapsed with further periods of stress leave from work.

In addressing adapted forms of the Bonny Method, Summer (2009; 2015) developed a three-tier model of Music Imagery (MI) comprising supportive MI, re-educative MI and re-constructive MI. These approaches involve the client and therapist in a collaborative relationship determining an individually-tailored image for the client to use, matched with a selection of music (often drawn from the client's iPod or iPhone playlists).

Summer (2009) also introduced the notion of repeated music selections in the Bonny Method of GIM, where one selection is played several times while the client images, rather than a full program comprising multiple selections. The therapist engages in a music-centered dialogue drawing the client's attention to the music throughout the imaging experience. Summer comments that using repeated music reduces the amount of novel music experiences for the client and allows repeated hearings to deepen the client's experience of the imagery. In her study, she found that clients' relationship with music deepened, as did their sense of the "true" self.

Qualitative approaches to research have been adopted for a number of studies of clients' and therapists' experiences of the Bonny Method of GIM (Abbott, 2004; 2007-2008; Meadows, 2002; Zanders, 2008). A phenomenological study of pivotal moments in GIM found common elements in seven clients' experiences, including that pivotal moments were remembered; they were emotional and embodied experiences; and impacted clients' lives. Further, pivotal experiences often emerged from unpleasant feelings or images, which were uncomfortable, unpleasant or horrible, but they transformed in the session (Grocke, 1999).

Short (2003; 2015) studied six clients who had undergone complex cardiac surgery and who received a series of Bonny Method GIM sessions. She analyzed the transcripts of sessions for semiotic meaning in the words of clients relative to their life story. Findings indicated that the Bonny Method of GIM provided a depth of experiential meaning relevant to the clients' post-surgical recovery.

Physiological studies are also showing promising results. An early EEG study (Lem, 1995) demonstrated an increase in brain activity during moments of sudden and unexpected changes in the music. Lem explained that this finding has implications for how therapists might guide clients. Hunt (2011) adopted a neuro-phenomenological model to examine brain wave activity during GIM sessions. To bypass the problem of clients not being able to verbalize the imagery experience (as this causes artifacts in the EEG recordings), Hunt devised directed interventions representing six types of experience: Affect, Body, Interaction, Kinesthetic, Memories, and Visual, pre-recorded over two different classical musical pieces selected from the GIM repertoire for four participants. One of the interesting findings was that imagery generated brain activity in the same regions that would process information from similar real-life experiences.

Most recently, Fachner and colleagues (Fachner, 2015) have trialed EEG graphing of a GIM session in which the client was able to verbalize the experience. Advances in technology enable an analysis of data that is not contaminated by artifacts and sets the scene for investigating emotion and imagery experienced within GIM.

Agenda for the Future

The Bonny Method of GIM stands at a crucial point in its evolution, as new adapted forms of the pure method are increasingly needed to address the complex needs of clients. There is a spectrum of practice emerging that encompasses these approaches. The following table demonstrates the Music Imagery (MI)—Guided Imagery and Music (GIM) Spectrum (adapted from Grocke & Moe (2015).

Table 1. The Music Imagery (MI) - Guided Imagery and Music (GIM) Spectrum

Music and Imagery for individuals (no guiding) 15 – 20 mins.	Music and Imagery for groups (no guiding) 60 - 90 mins.	Guided Imagery & Music for groups (with guiding) 60 – 90 mins.	Shortened Guided Imagery & Music (classical music and other genres) 45-50 mins.	Bonny Method of Guided Imagery and Music (pre-dominantly classical music) (1.5 - 2 hrs)

Music Imagery (MI) for individuals can be applied across the age spectrum from young children (Reher, 2015) to palliative and hospice care (West, 2015). A relaxation induction (often short in duration) prepares the child/adult for exploring a static image/visualization, or a short journey of the imagination. The imagery is enhanced by supportive music from any genre. There may be a drawing of the imagery and discussion to follow, but in some hospital contexts the child/adult may have fallen to sleep, and they are left undisturbed.

In Group Music and Imagery (Grp MI), a number of people come together, usually with a common cause (e.g., recovery from cancer treatment, or a community group). Grp MI can be practiced as a sole session, or in a series of sessions. There is a discussion, and a theme emerges from the group members. The therapist provides a relaxation induction for the whole group and chooses the music to match the theme. In most Grp MI sessions there is no guiding; however, some therapists have used a directed approach to guiding (Moe, 2002; Moe, Roesen & Raben, 2000) or have encouraged group members to dialogue throughout the music (Pehk, 2015).

The shortened form of the Bonny Method is used in a wide array of contexts, and is most often chosen because of the client's mental, emotional or physical state. All aspects of the Bonny Method session can still be offered, but in

shortened form. Alternatively, some aspects are deleted (for example, the drawn mandala).

With this spectrum of approaches in mind, the agenda for the future is clear. We still need efficacy studies, in order to show the effect of a series of Bonny Method GIM sessions in key health areas, such as during recovery from cancer surgery, and in mental health, particularly depression. The Bonny Method has an advantage in that the protocol is practiced widely throughout the world, and therefore, the opportunities for international multi-site trials with large samples sizes are viable. In addition, qualitative studies are also needed to further understand what clients gain from the Bonny Method of GIM and its adaptations, as well as from MI.

We also need more studies that use adapted forms of the Bonny Method for vulnerable people, particularly those experiencing serious mental health problems (such as PTSD & refugees). At present, studies use a variety of adaptations, and for very traumatized individuals each session can take a different form, depending on the emotional state of the person on the day. For example, Körlin (2007-2008) has developed a specific adaptation called "Music Breathing" for use with people who are living with complex PTSD and borderline personality disorder. In a series of graded procedures, he introduces breathing with short pieces of music that are characterized as grounding, e.g., Pärt's *Spiegel im Speigel*, to help the client to control his or her breathing. This is particularly important for the person experiencing flashbacks to the trauma. Transpersonal experiences can then assist in integrating dissociated parts of the person's sense of self.

Wärja (2015) has developed an adaptation of the Bonny Method of GIM in her work with women in treatment and recovering from gynecological cancer. Her method is entitled Short Music Journeys (Korta Music Resor, in Swedish), and combines body drawings and other artwork as focus images for the music and imagery experience.

Studies using music and imagery with groups are also needed. Torres' (2015) study of group music and imagery (GrpMI) for women living with fibromyalgia shows encouraging results for wellbeing that is enhanced when the therapeutic approach involves a group context, and the support of others who are living with similar symptoms is an active component of the intervention.

Finally, in the burgeoning area of neuroscience, EEG studies in GIM promise to shed light on how music, emotion and imagery inter-relate when experienced within an altered state of consciousness to stimulate insight and resolution of life concerns.

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13

The Future of Music Therapy Clinical Improvisation

Jos De Backer
Katrien Foubert

Introduction

Improvisation always present is in our society, economy, relationships and daily planning. It is increasingly necessary to become "flexible human beings" and to "improvise life" (Weymann, 2004, p.12). This trend is set within a society where innovation and change confront us almost daily.

Engaging in music improvisation is one way of meeting the challenge to become flexible and to improvise throughout life. Moreover, the use of music improvisation as a therapeutic approach is "an autonomous clinical force" (Aigen, 2014 , p. 24). To that end, many well-known psychotherapists have written about the power of playing/improvising in a therapeutic context.

> It is in playing and only in playing that the individual child or adult is able to be creative and to use the whole personality, and it is only in being creative that the individual discovers the self. (Winnicott, 1971, p. 54)

> Play permits the child to resolve in symbolic form unsolved problems of the past and to cope directly or symbolically with present concerns. It is also his most significant tool for preparing himself for the future and its tasks. (Bettelheim, 2006, p.29)

Improvisation in music and in music therapy

Improvisation in music has a long history beginning in the late 1400s in western art music and continuing to the present time in jazz and contemporary music and dance.

Interest in the use of free improvisation in music therapy began during the 1960s, as separate from and unrelated to developments in jazz. Pioneers in music therapy clinical improvisation in the U.S. and the U.K. included Juliette Alvin (1975), Mary Priestley (1975) and Paul Nordoff & Clive Robbins (1977), all exceptionally gifted musicians: Alvin a concert cellist, Priestley a pianist and violist and Nordoff a pianist/composer. Their influences helped to establish the very music-centered nature of music therapy, and each developed improvisation methods with different goals. Priestley developed her method with adults focusing on the dynamics of a one-to-one therapist-patient relationship; Alvin's work was

specific to children; and Nordoff and Robbins used improvisation and songs initially to help children develop musical skills; they later focused on music education as a therapeutic means.

Music therapy clinicians and researchers in other countries later contributed to the development of improvisation in music therapy, including Bruscia (1987) and Wigram (2004) (through their research and publications); Schmölz (1983) (through his development of specific aspects of free improvisation), Hegi (1986) and Weymann (2004)) (through their philosophical thinking); and Lecourt (1993) (through her development of the free group improvisation model within her framework of 'Sonorous Communication').

Currently, music improvisation is part of the identity of different music therapy frameworks (e.g., psychodynamic, music-centered, gestalt, systemic, cognitive behavior, etc.) and is an important and crucial part of the way music therapists work and think. Music improvisation also distinguishes music therapy from verbal psychotherapeutic approaches because the music and musical interplay used create the possibility for clients to explore and connect with the layers of the human psyche that often remain unexplored in verbal psychotherapy.

Research in Improvisation

The use various music therapy approaches involving improvisation has been studied with patients having a wide range of clinical issues: neuro-rehabilitation (Magee & Baker, 2009); substance abuse (Albornoz 2011); cancer (Pothoulaki, Macdonald & Flowers, 2012); palliative care (Hartley 2001); mental health issues (Gold, et al., 2013; Storz, 2014); autistic spectrum disorder (ASD), attention deficit hyperactivity disorder (ADHD) (Geretsegger, et al., 2012); eating disorders (Trondalen, 2003; Robarts, 2000), forensic psychiatry care (Hakvoort, 2014) and dementia (Ridder, et al., 2013; McDermott, et al., 2013).

Moments of meeting in improvisation

In clinical improvisation, the music is located within the patient's and therapist's immediate presence. In this relationship the intrinsic value of the musical experience is the primary effect of the music itself. Music has the ability to move us on an affective, preverbal level. Oliver Sacks (2007) observed that music functions to move us, both physically and emotionally, and these levels are intimately related.

Experiences within music can also be described as vitality affects, including concepts, such as 'affect attunement,' 'moving along,' 'now moments' and 'present moments' (Stern, 1985). A number of music therapists utilize the theoretical concepts of Stern to explore qualitatively the concepts and specific phenomena in music therapy that they consider to be 'moments of meeting.' These shared moments are important in changing the relationship and moving it to a deeper level of intersubjectivity within a therapeutic process (Stern, 2010). There have been a number of studies concerning "moments of meeting." (See Table 1).

Table 1: Moments of Meeting (In chronological order according to publication dates)

Author	Phenomenon	Focus	Theoretical Basis	Properties
Amir (1996)	Meaningful moments	Adults	Humanistic approach	Occur on Intrapersonal level (12 moments) and interpersonal level (3 moments); Shared music caused inner movements within physical, cognitive, emotional and spiritual realm; Happens spontaneously, unexpected, unpredictable in the here and now
Austin (1996)	Musical moments	Adult patients	Psychodynamics	Shared inner experience; Freedom to play or improvise autonomously
Gindl (2002)	(Emotional) resonance	People with psychiatric disorders; Children with learning disabilities	Psychodynamics	Fundamental principle of the therapeutic relationship; *Resonanzbereitschaft*
Klaar (2003)	*Bedeutungsvolle Momente*	Psychosomatic	Eclectic	Therapy relevant experiences
Trondalen (2006)	Significant moments	People with Anorexia Nervosa	Developmental psychology (Stern's moment of meeting)	Sequences of regulation; Mutuality; Musical interplay
Kim (2006)	Musical attunement	Children with autism	Developmental psychology; Affect attunement (Stern); Joint attention; Primary and secondary intersubjectivity; Matching	Single and cross modality; Musical Attunement as motivational factors for joint attention and spontaneous engagement (musical synchronicity, joy and emotional synchronicity, initiation of engagement by the child)
Trondalen & Skårderud (2007)	Affect attunement	People with Anorexia Nervosa	Developmental psychology (Stern's affect attunement, unity of senses and cross-modality)	6 observable criteria: absolute intensity, intensity contour, temporal beat, rhythm, duration and shape
De Backer (2008)	Moments of synchronicity	Patients with psychosis	Psychodynamics	Shared inner experience; Freedom to

				play or improvise autonomously; Within process from sensorial play to musical form
Schumacher & Calvet (2008)	Inter-affective synchronization (affective attunement)	Children with Autism Spectrum Disorder	Developmental psychology (Stern's affect attunement)	Relevant moments; Preceded by intra-/inter-synchronization
Shoemark & Grocke (2010)	Interplay	High risk full term infants	Developmental psychology (Stern's moment of meeting)	7 markers of interplay (e.g. moving along, moment of meeting)
Coomans (2015)	Moments of resonance	People with dementia	Psychodynamics	Understanding between therapist and patient on affective/ preverbal level
Lee (2015)	Meaningful moments	Adults with profound intellectual and multiple disabilities (PIMD)	Different contexts	Interpretative phenomenological analysis

Techniques and interventions

Table 2 contains the techniques and interventions used by the European music therapists who contributed to the book, *The Music in Music Therapy,* edited by De Backer & Sutton (2014). These techniques and interventions have been categorized according to 10 themes by the current authors.

Table 2: Techniques and Interventions Used by Contributors to The Music in Music Therapy

Supporting Holding Containing	**Catching Mirroring Reflecting**	**Contrasting Intensifying**	**Structuring**	**Explorative**
De Backer Schumacher Ala Ruona Hakvoort Storz Del Campo Ronse Hannibal Paula Leite	Schumacher Ala Ruona Storz Del Campo Hannibal	De Backer Schumacher Ala Ruona Storz	Ala Ruona Hakvoort Storz	Storz Paula Leite De Backer
Listening Stance	**Attunement**	**Rêverie**	**Transitions**	**Therapist's embedded Knowledge**
De Backer Sutton Primadei Ronse Paula Leite Schumacher Storz Del Campo Ronse Hannibal	De Backer Hannibal Sutton	De Backer Sutton	De Backer Del Campo Schumacher	De Backer Sutton

The main techniques the authors described related to the use of containing, holding and supporting interventions. This is logical because in working with people, it is essential for therapists to understand clients' relational histories and patterns of relating and to adopt their responses to both internal and external worlds of the client.

There is a high agreement among music therapists in this book about the necessary listening stance of the therapist. This is not surprising, because of the detail, depth and quality of listening that music therapists use. By virtue of both their music training, i.e., needing to listen to, in an extremely detailed way, their own music, as well as their training as therapists, music therapists undoubtedly must possess sophisticated and embodied listening skills (De Backer & Sutton 2014).

Improvisation and assessment

Music therapy assessment can be divided into different categories: e.g., diagnostic assessment, general assessment, initial assessment, comprehensive assessment and ongoing assessment (Hanser, 1999; Wigram, 1999). The four main areas that are considered during assessment in music therapy include motor, cognitive, communication and emotional skills (Bruscia, 1987)

There are a number of assessment tools that have been developed for music therapy improvisation. Examples of these are:

- Nordoff-Robbins assessment tools, including: Indexing, Tempo-Dynamic Schema, Thirteen Categories of Response and three evaluation scales (NRES) (Nordoff-Robbins 1977).
- The Improvisation Assessment Profiles of Bruscia (1987) which consists of six profiles (integration, variability, tension, congruence, salience and autonomy) which are separately evaluated in rating subscales on various elements.
- The Individualized Music Therapy Assessment Profile (IMTAP) of Baxter, Berghofer & MacEwan (2007) which is organised into ten domains that evaluate a total of 375 skills. The most common musical parameters are dynamics, instrumentation, pitch, tempo, texture, timbre, and tonality.
- The Rhythmic Test (Holthaus, 1969) in which different rhythmic patterns reflect the evaluation of a musical and therapeutic process; this tool offers possibilities for clinical research.
- Schumacher & Calvet's (2011) EBQ Psycho development Scale
- Development and Evaluation of the Music Therapy Expression and Communication Scale (MAKS) (Moreau & Koenig, 2013).

For a survey of studies in music therapy concerned with the recording of emotional qualities in improvisations, see the publication of Phan Quoc (2007).

Analysis of improvisation

To have insight into the musical processes intrinsic to clinical improvisations, an analysis of the music according to its different musical parameters is necessary and useful. Improvisation analysis also allows music therapists to refine and develop their music interventions during clinical improvisation.

There are two main ways of analyzing improvisations: manual analysis and computational analysis.

***Manual analysis*.** It has been a challenge for many therapist-researchers to develop a way to study improvised music and its clinical value in a systematic way without losing sight of the nature of the improvisational interaction. The existing assessments of improvisation (see above) are all based on manual ratings. They rely heavily on the opinion of the therapist, and they are time consuming.

The various methods and approaches that have been developed to study musical improvisations require many cycles of listening and reflection in order to describe, analyze and interpret the therapeutic significance of the music (Bonde, 2005). The listening observations can be done with audio data, but the use of video data opens a new vista and provides the possibility for additional insights.

To study music improvisations in an in-depth manner, there is a need for a representation or a substitute of the 'real thing.' Representation allows a view of relevant musical structures and details in a new light and thus permits new insights. Widely used representations of music are verbal descriptions (e.g.,

phenomenological descriptions). Because of the need for clinical understanding and clinical application, the musical material is often described in a metaphoric or symbolic way (e.g., Bruscia, 1987, pp.450-455). Software tools are commonly used and very helpful for the coding and analysis of data, e.g., NVivo, ATLAS.ti and HyperRESEARCH.

Another way of representation is by standard music notation. For example, Lee (2000) and De Backer (2008) explored and developed music notation for clinical improvisation. Notation systems, however, are difficult to use when the music becomes complex, for example, when there is no clear meter, tempo, rhythm and/or pitches. Therefore, some music therapists and musicologists have created new notation systems inspired by the developments of new experimental music since 1945 (e.g., graphic notations, musical graphics, aural scores, action notation). Examples in music therapy are the graphic notation methods of Bergstrom-Nielsen (2009), The Music Therapy Analysing Partitura - MAP method of Gilboa (Gilboa, 2012), and the Dyadic-MAP method (Gilboa and Roginsky, 2010).

In music therapy research, a discussion has occurred regarding the use of music theory frameworks to analyze music improvisations. However, music theory is seen by some as a discipline concerned primarily with scales and chords and is not concerned with the effects of music. Others note that the play of concepts and conceptual structures typical of music theory is not something far away from our appreciation of music, but is instead basic to it (Zbibowski, 2002). This idea "…is based on the assumption that musical understanding relies not on specialized capacities unique to the processing of patterned sound, but on the specialized use of general capacities that humans use to structure their understanding of the everyday world" (Zbibowski, 2002, p.vii). This view supports the idea that the musical features of clinical improvisations are very valuable phenomena in research.

***Computational analysis*.** The development of computational analysis for research purposes is of particular interest. A starting point in computational analysis of music is often basic music theory, with is tradition of analyzing the music into its components. These components are perceptual aspects, such as functional harmony or rhythmic patterns (Friberg, et al., 2014).

In music emotion research, computational analysis has been successfully used for quite some time to measure imprecise overall estimations of the music. Examples are overall pitch height, overall dynamics or harmonic complexity (e.g., Eerola, Friberg & Bresin, 2013; Friberg, 2008; Gabrielsson & Lindström, 2010; Juslin & Lindström 2010).

Several tools are available to computationally retrieve and assess musical content from clinical improvisation: Music Therapy Logbook (Streeter, et al., 2012), Computer Aided Music Therapy Analysis System-CAMTAS (Hunt, et al., 2000), Music Therapy Toolbox-MTTB (Erkkilä, et al., 2004; Erkkilä, 2007).

The fast development of Music Information Retrieval in the areas of music psychology, music cognition and musicology is in contrast with the slow developments within music therapy. Hahna, et al. (2012) surveyed therapists regarding the role of technology in music therapy clinical work and concluded

that the major obstacles to the use of music technology were: limits of the facility, lack of money, lack of training and professional experience, lack of interest and the belief that music technology is appropriate for music therapy clinical work. These results were also found by Magee & Burland (2008).

Another problem is that the available computational tools and findings are often restricted to one study, not developed and validated by other researchers and not implemented in clinical practice. However, computational approaches have the potential to validate qualitative findings from clinical researchers. An example is the research of Luck, et al. (2006) wherein associations between musical interplay in clinical improvisations, emotional responses and medical conditions were established.

Recommendations for the Future of Music Therapy Improvisation

1. For clinical music therapists, there is a great need to improve knowledge regarding the use of improvisation. It is important to understand, for example, what makes improvisation effective in clinical settings, the types of musical styles used, insights into musical interventions, and theoretical frameworks used. This information can be very helpful in developing clinical knowledge.

2. Qualitative, single case research studies that explore musical interventions (specifically, improvisation) and their effects over time may contribute evidence to the literature. Additional studies utilizing musical analyses of improvisations and collaboration with composers are also needed. Their insight into complex musical material can stimulate music therapists to explore thse materials and effectively address complexities in timbre, rhythm, melody etc. The recognition of the essential continuity between clinical and non-clinical musical experiences is indeed a core aspect of music-centered thinking and one that is shared with other contemporary frameworks, such as community music therapy and resource-oriented music therapy.

3. Supervision is an act of co-creation or a process of shared composition about musical and therapeutic experiences in which the patient is absent. It is a triangular relationship involving the supervisor, supervisee and the music within a clinical context. Therefore research is needed to develop insight into improvisations used in supervision. It would be important to identify the optimal balance between verbal reflections and insight, because good supervision requires a balance between the therapist's musical intuition on an affective level and theoretical, intellectual understanding and reflection on a verbal level.

4. More outcome studies regarding clinical improvisation are needed. Specifically, therapists should identify the outcomes of clinical improvisation in and of itself, that is, how clients play with musical

structures and how the capacites that are gained in musical play help client to structure their understanding of the everyday world.

5. Computational analysis provides the possibility to measure the music's "grain," its nuances of timing, timbre and articulation which are very improtant domains in music therapy because of the communicative richness in these elements. Research studies about the specific parameters for musical interventions in music therapy, such as Erkkilä, et al.'s (2011) study can provide the field with importance evidence concerning the use of improvisation.

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14

The Future of Songwriting in Music Therapy

Felicity Baker

Therapeutic songwriting is the process of creating lyrics and music within the context of a therapeutic relationship to address a range of clinical needs in individuals or groups of clients (Baker & Wigram, 2005). Over the past four decades, songwriting has emerged as an intervention practiced with patients across the lifespan (Baker, Wigram, Stott, & McFerran, 2008), using a range of music therapy techniques, orientations (Baker, 2015a), and researched using randomized controlled trials (e.g., Grocke, et al., 2014), arts-based research (e.g., Viega, 2013), lyric analysis (e.g., O'Callaghan & Grocke, 2009), narrative inquiry (Gleadhill, 2014), action research (Bolger, 2014), grounded theory (e.g., Baker, 2015a), phenomenological analysis (Amir, 1990), case studies (e.g., Aasgaard, 2002), and mixed methods (O'Brien, 2014). In this paper, I draw on data from varied studies to identify what is known about songwriting present day, identify the gaps and limitations in theory, research, and practice and offer recommendations for advancing the discipline.

Practice Trends and Methods

Baker, et al. (2008) published the findings from a songwriting survey to identify key practice trends on a global scale. Based on data from 417 clinicians practicing in 11 different countries, they found songwriting was being used with a broad range of clinical populations for the following clinical purposes: 1) to experience mastery, develop self-confidence, enhance self-esteem; 2) for choice and decision making; 3) to develop a sense of self; 4) to externalize thoughts, fantasies, and emotions; to tell the client's story and 5) to gain insight or clarify thoughts and feelings. The survey indicated songwriting was being used most frequently in mental health. However, many clinicians (36.0%) participating in the survey reported using songwriting with people with developmental disabilities or with those on the autism spectrum. This was somewhat unexpected, as no songwriting studies involving persons with developmental disability or autism had been published. Also absent from the practice trends were data on songwriting use with adolescents who have had adverse childhood experiences. An increasing body of research with adolescents published since this survey (e.g., Viega, 2013, McFerran & Teggelove, 2011) suggests that songwriting is being widely adopted in practice.

Baker, et al. (2008) also indicated there were differences in the number of sessions needed to complete a song (1-4 or more sessions) and in the contexts where songwriting is practiced (individual, small group, large group and family contexts). Although this information is certainly of value, knowledge about what guides the therapist in making the choice to create songs in single or multiple sessions, or in individual, group or family contexts is still largely unknown. Given the noticeable increase in published studies on songwriting, it is recommended that the survey be repeated in the coming years to identify: 1) whether songwriting practice has increased globally or in some countries more than others, 2) whether the use of songwriting methods has increased for some clinical populations (e.g., adolescent populations) when compared with others, and 3) to identify whether there are other clinical areas of practice where songwriting is being employed.

Methods of songwriting have evolved over the past two decades. Baker (2015a) recently mapped the spectrum of these methods on a two-dimensional plane illustrating that songwriting methods are guided by whether there is an emphasis on lyric writing, music creation or a balance of the two. Ten methods have been identified and described in detail: parody, fill-in-the-blank, strategic songwriting, rapping over precomposed music, original songwriting, collage, rapping over original music, improvised songwriting, mash-ups and remixing original music. The descriptions of these methods in Baker's text (2015a) provide detailed clinical guidelines and rationales for selecting the different methods. Baker's studies synthesized in her book also explored the factors that influence the songwriting process including the environmental factors, sociocultural factors, group factors and individual factors (2015a). Her findings provide clinicians with important information about how these factors can inform clinical decisions regarding the songwriting methods that might suit a specific therapy context.

Research

Songwriting methods have been well described in the literature; however, they have yet to be rigorously tested in clinical trials to determine whether they are effective in achieving the aims for which they were designed. Importantly, studies that have compared differences in the effectiveness of each of the songwriting methods have not yet been undertaken. For example, a study might examine whether song parody or rapping over original music is more effective in addressing anxiety in adolescents undergoing cancer treatment. Perhaps the essential components that are common across all methods of songwriting (having a voice, being supported by the therapist to tell a story, expressing feelings, etc.) are all that is needed to achieve the desired therapeutic outcome, and the specific method of creating a song is irrelevant. In addition, it is not yet known whether a specific method (e.g., song parody) has similar effects when applied across different populations.

To address these gaps in the literature, there need to be comparative songwriting studies that 1) identify which songwriting interventions are the most effective in enhancing given wellbeing indicators and 2) increase understanding

of whether songwriting methods improve wellbeing in similar ways across different clinical populations.

Efficacy studies

There is a growing body of evidence generated from randomized control trials (RCTs) that indicate songwriting is effective in addressing quality of life (e.g., Grocke, et al., 2014), working alliance, attendance, experienced stigma and coping (e.g., Silverman, 2011) in people with mental illness, with the effects increasing with increased number of sessions attended (dosage) (Grocke, et al., 2014). Silverman found effects when using single-sessions implemented within a group psychoeducational framework, but did not investigate long-term effects, whereas Grocke's results were based on 13-weekly group sessions. O'Brien (2014) has completed a mixed methods study (with RCT) that used a three-session songwriting protocol with patients being treated for cancer. Significant improvements were found in quality of life and physical wellbeing, but not psychological wellbeing, physical symptoms or existential wellbeing. Robb, et al. (2014) studied the effectiveness of a song parody with music video protocol with adolescents and young adults undergoing stem cell transplantation. The six-session, three-week intervention led to improved coping, social integration and family environment.

Baker, et al. (2015) recently published the first quasi-experimental songwriting study with 5 acquired brain injured and 5 spinal cord injured inpatients undergoing intensive rehabilitation programs. The 12-session protocol incorporated narrative songwriting approaches and was designed to explore self-concept and identity. Results indicated improvements in self-concept measures and depression and non-significant improvements in flourishing, satisfaction with life and positive and negative affect. Hong and Choi (2011) implemented an RCT with people with dementia and found significant improvements in language function, orientation and memory following 30 group songwriting sessions.

This collection of experimental studies suggests songwriting has the potential to effect depression, quality of life, sense of self, physical wellbeing, coping, therapeutic alliance, stigma and readiness for change. However, the current body of evidence is small, and more well-designed studies that test the effectiveness of songwriting with different populations are needed (e.g., eating disorders, autism). For example, researchers might explore whether the songwriting protocol in Baker, et al.'s (2015) study would also affect measures of self-concept in other populations where weakened self-concepts are common clinical issues (e.g., eating disorders, trauma victims). There is also a need to better understand which specific wellbeing indicators (e.g., depression, coping, quality of life) are the most responsive to songwriting interventions as well as to understand the optimal point in the stage of illness or of recovery for introducing the intervention. For example, in persons with drug addiction, is songwriting to stimulate readiness for change best introduced while in detox, immediately pre-inpatient discharge, or after 6 months of living in the community? Such knowledge would assist clinicians in deciding where to direct their limited time, energy and resources.

Mechanisms of change

Understanding the mechanisms of change activated by the songwriting process has until recently been neglected from the songwriting literature. Baker and MacDonald (2013) published a study that measured the experience of flow and the meaningfulness of a songwriting experience for healthy university students and retirees. Their study found that creating an original song led to stronger flow and meaning than creating a parody or lyrics alone. Importantly, the study determined that the flow and meaningfulness of the songwriting experience were highly correlated and that the degree of flow was a predictor of the strength of meaning experienced by the songwriters. Silverman, et al. (under review) found that the flow experienced during songwriting was a predictor of sense of hope in people with mental illness and readiness for change in people undergoing detoxification. Baker, et al.'s (2015) study found that the strong sense of meaning experienced during songwriting was positively correlated with negative affect, anxiety and reduced emotional suppression.

It is essential to continue to explore the mechanisms of change that are activated by a songwriting process so as to understand why some people may be more responsive to songwriting than others. It is conceivable that people who find the songwriting experience meaningful will have greater therapeutic change than those who do not. It is also likely that other mechanisms may be activated during the songwriting process. For example, studies have not yet examined the role of the narrative in songwriting and what happens to people when they tell their story of trauma, or express the feelings associated with receiving the news of a terminal illness.

The mesolimbic system may also be a mechanism activated by the songwriting process (Tamplin, Baker, Rickard, Roddy & MacDonald, 2015) that may explain positive changes reported in songwriters. This system, the pleasure-reward system, can be activated by music. Therefore, we can hypothesize that the songwriting process may stimulate pleasure-reward and in doing so, positively affect mood. An increase in positive affect is in turn likely to strengthen people's capacity to cope with and process confronting circumstances.

For individuals who have cognitive issues (e.g., a stroke), moving forward through a therapeutic process may be difficult if they are unable to retain verbally-mediated processing in memory. We need to better understand the extent to which the music-emotion-memory systems activated during songwriting enable people with cognitive impairments to recall discussions and their self-composed lyrics and music. In short, to advance our understanding of how and why songwriting affects wellbeing, more studies are needed that explore and measure the mechanisms of change and their correlation with wellbeing outcomes..

Ongoing life of the songs: Recording and performing songs

Several studies have specifically focused on the ongoing life of songs following their creation. Aasgaard (2002) studied the ongoing life of the songs with children undergoing treatment for cancer and found that they were played in many different contexts (e.g., school, home, hospital ward) and involved many

different people (physiotherapists, nurses, doctors, siblings). Day, Baker and Darlington (2009) found that for women who had experienced childhood abuse, the songs they wrote took on a positive role in their lives even at two years post creation. Songs became powerful reminders of their inner strength, and when shared with family, enabled them to communicate their feelings about their abuse. Gleadhill (2014) found that bereaved parents' relationship to parodied songs changed post creation. For example, one parent described how she had to stay and listen to a song played in a supermarket to honor the child who was deceased, whereas another parent found hearing the song in public places so painful that she had to remove herself from the environment.

A study by Baker (2013a) explored clinicians' perspectives on providing songwriters with copies of their songs post creation and identified numerous risks and benefits in doing so. It was found that when songwriters shared their songs with others, it provided space to strengthen their relationships with those listening, to increase their sense of pride and self-esteem, and to enable others to see the songwriter through a different lens. The song can also play a role as a transitional object during moments of anxiety and changing contexts. However, when songwriters retain copies of their songs, there is an inherent risk that they will 'over listen' to their songs and cause harm by exacerbating grief experiences or by fostering grandiose ideas of their skills as a singer-songwriter. There are also inherent risks associated with the distribution of recorded copies of the songs. As the song is merely the synthesis of a larger therapeutic process, there is a risk that the listener may not truly appreciate the significance of the song nor the emotional investment made in creating it. Further, once the recorded copy of the song leaves the control of the music therapist, there is a chance it may be uploaded into digital spaces for anyone to hear.

Performance of songs has been another area of interest. Studies have found that performing self-composed songs can bridge to the outside community (O'Grady, 2011) as a means of communicating experiences and of empowering people (Day, et al., 2009); these performed songs can be used to change community attitudes and lobby for social change (O'Grady, 2011). Baker (2013b) found that the performance of self-composed songs had both positive and negative influences. For example, while performance may strengthen relationships with audience members, it can also place songwriters in vulnerable positions when audiences ask them about what the songs mean and what their experience of writing their songs was like.

Baker's (2013a) study highlighted that there are several benefits and risks associated with songwriters' retaining copies of their songs. What the discipline needs now is to translate these findings into a set of recommendations so that clinicians can make clinical judgements about the appropriateness of providing clients with copies of their self-composed songs. With the exception of a small study of parents who attended the performances of the songs created by their children who had experienced homelessness (Fairchild, 2014), there is little known about the impact of performances on audience members. There is a potential for songs performed to audiences to be vehicles to change audience perceptions an attitudes of people with varying health and wellbeing challenges.

Song analysis

Lyric analysis has been the focus of research that has explored the lived experience of illness and has been used to gain insight into the inner world of the songwriter. Studies have utilized lyric analysis to gain insights into the therapeutic process and emotional expressions of people with acquired brain injury (Baker, et al., 2005), with eating disorders (McFerran, et al., 2006), at end of life (O'Callaghan, 1996), with severe mental illness (O'Callaghan & Grocke, 2009), as well as across many clinical populations (McFerran, Baker, & Krout, 2011). However, analyzing the lyrics without consideration for the music does not generate a complete picture. Research suggests that the music has the potential to add emotional backing to the lyrics, increase one's ability to decode the meaning of the lyrics and to heighten its emotional significance (Baker, 2015b). Therefore, the music needs to be analyzed in conjunction with the lyrics to provide the complete picture of the lived experience of people who have created songs as part of a therapeutic process.

Viega (2013) was the first to look more closely at the music of songs created within therapy contexts, and in his case, with adolescents who have had adverse childhood experiences. Using arts-based research methods, he studied the aesthetic components of songs including their musical elements, the compositional techniques, the affective-intuitive qualities and the interaction between the music and the lyrics. This gave Viega a unique window into the development of his young adolescent songwriters.

Viega's (2013) work is important as it opened up new possibilities for exploring the role of songs in promoting wellbeing. More studies are needed that examine the aesthetic components, compositional techniques, affective-intuitive qualities of the music and the interaction between the music and lyrics (in line with Viega's work) to gain a deeper understanding of the songs and their capacity to communicate feelings, identity and therapeutic change.

Theoretical Models of Songwriting

Recently, Baker (2015a) undertook an in-depth analysis of how songwriting is understood, applied and practiced according to different clinical orientations. In her book *Therapeutic Songwriting: Developments in Theory, Methods, and Practice*, Baker constructed twenty models of songwriting that were being practiced according to specific orientations: contingency songwriting, successive approximation songwriting, lyric repetition technique, cognitive restructuring songwriting, psychoeducational songwriting, transtheoretical songwriting, restorative songwriting, behavior recall songwriting, free association songwriting, reality contemplation songwriting, songwriting as a transitional object, insight-oriented songwriting, narrative songwriting, strengths-based songwriting, sung imaginal dialogue, existential issue based songwriting, feminist individual songwriting, feminist group songwriting, resource-oriented songwriting, and ecological songwriting. Importantly, the models were divided into three broad categories as proposed by Bruscia (2014): outcome-oriented songwriting, experience-oriented songwriting, and context-oriented songwriting.

This text provides possibilities for clinicians to define more clearly and give a name to the type of songwriting being used in their practice, and more importantly, to enable researchers to document more clearly in journal articles, the specific approach to songwriting used in their efficacy studies.

Each of the songwriting models documented by Baker (2015a) still requires investigation to determine which client populations each model will suit best, and in what contexts. The discipline of music therapy would benefit from understanding how various models of songwriting affect wellbeing differently by comparing them with each other. For example, what effects would we obtain if we conducted a randomized controlled trial with people with mental illness where the effects of psychoeducational songwriting (outcome-oriented), narrative songwriting (exprience-oriented), and group feminist songwriting (context-oriented) were comparred? How would the effects be different? This would increase our ability to decide which model should be adopted at any one time.

Key Recommendations

More research is needed to advance the knowledge about the therapeutic potential of songwriting. Specifically:

- Songwriting studies with people who have disabilities, are on the autism spectrum, or who have had adverse childhood experiences
- Studies that construct knowledge about the guiding principles therapists adopt when making decisions about the use of various songwriting methods and techniques
- A repeat of the songwriting survey to examine changes to songwriting practice over the past decade
- Comparative studies that examine the effect of different songwriting methods and/or songwriting practiced in different orientations on therapeutic outcomes
- Comparative studies that examine songwriting protocols on multiple populations
- Effect studies to determine the wellbeing indicators most responsive to songwriting methods
- Studies that identify the mechanisms of change active during the songwriting process
- Studies exploring the impact of performances of songs created in therapy on audiences

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15

The Future of Music Therapy Theory

Even Ruud

Introduction

"Theory" has to do with how we translate our observations and experiences into a language that makes it possible to explain and/or understand the phenomena under question. In music therapy, we have to answer questions such as: "How does music affect this situation and person in order to effect changes?" "Why do music and music therapy have such an impact upon our behavior and experiences?" "What is the nature of music that can afford health benefits?" Theories could be likened to a "net" we throw onto the music therapy reality in order to catch some underlying meaning, order or connection between what appears in the situations music therapists operate. The concepts and metaphors we use in our descriptions may come to determine what we are able to observe, catch and give further attention.

More formally, theory, according to Bruscia (2014)

> can be defined as a set of interrelated ideas, formulated or discerned by a theorist to: (1) identify, organize, and interpret knowledge on a particular domain; (2) explain or understand related facts, empirical data, and phenomena within the domain; and (3) offer a conceptual framework for decision-making in future theory, research, and practice (p. 199).

Such ideas have changed throughout history; they form the basis of current models of music therapy, and they will certainly change along with future developments in technology, cultural influences and changing perspectives as resulting from new philosophical insights, as well as from influences from empirical research.

From Monocausal Explanations to Complex Models

The use of music for health benefits is known throughout history in a variety of cultures. Musical healing practices traditionally found their rationale through religious or magical thinking within cultures built upon such cosmologies. In Western history, the first "rational" explanations of musical influences were found in ancient Greek philosophies. Here, music was for instance seen as composed according to mathematical laws that reflected some

higher cosmic order. The effects of music upon man were generally explained as a sort of sympathetic resonance of this higher order or harmony. When put to work in a medical context, the effects of music were paired with a medical theory of the four humors of the body. Music was thought to be able to regulate the ratios between these different bodily fluids, and thus possibly reinstall harmony in the body and mind.

What concerns us here is of course not the truth value of such a theory or other theories that followed later in history. What we may notice rather is how the question was raised and the structure of the argument that was established. It seems that this way of questioning will easily lead towards a search for something inherent in the music (numeric regularities, characteristics of scales, tempo and so on) that leads to predictable changes within the body or mind of an individual, which again will have implications for health. This line of reasoning may be paradigmatic for a monocausal way of reasoning we still might adhere to in contemporary theory building in music therapy in order to make predictable actions.

Alternative ways of reasoning put more emphasis on the range of contextual factors that might influence a situation where music is applied to benefit health. Not only will such theories attribute inherent qualities in music or specific changes in our bodies and minds when it comes to understanding musical interventions, but also that a whole range of interconnected contextual, biographical, relational, social and cultural factors have to be taken into consideration as well. This creates a paradigm of complexity (Ruud, 1988).

The Birth of Music Therapy

Theories about musical influences began to flourish and multiply when music therapy was invented as a discipline and professional practice. As Ken Aigen has proposed (2014), music therapy theory has since then evolved in three stages. In the first stage (1945-1964), theories imported from clinical psychology tended to predominate, i.e., psychoanalysis in the 1950s and behavioral learning theory from the late sixties on (ibid.). What characterize this first stage, according to Aigen, are little or no novel constructs, weak connections between theory and practice, and no specific educational/training methods connected to theory. In the second stage (1965-1981), music therapy was better integrated with treatment theories and educational philosophies. Music therapy practices and professional identities were aligned with prevailing treatment models, such as medical models, behavioral-cognitive approaches, analytic understandings of therapeutic procedures as well as humanistic and music-based approaches, as described in Ruud (1973, 1980). Aigen recognizes this stage as the advancement of four music therapy models: Nordoff-Robbins therapy, the Bonny Method of Guided Imagery and Music, Analytical Music Therapy (AMT) and Benenzon music therapy.

A personal experience might add to this picture. The first international symposium in music therapy didactics was staged by Johannes Eschen and the German Music Therapy Association in Herdecke in 1978. Its aim was the furthering of music therapy training, and it attracted representatives from university programs in music therapy and music therapy pioneers from a range of

music therapy models and approaches. What became obvious to me at that time was how many of the participants had little knowledge of what was going on in other countries, or how they were clearly not ready to enter into dialogue with other theories or to start a sort of meta-reflection (Ruud, 1978). One notable exception was probably William Sears, also recognized by Aigen in his book (2014) for his music-centered approach. Sears aspired to formulate general theories of music in therapy that could cut across different music therapy models.

However, the diversification of musical approaches, as well as the differentiation of the field into a variety of theoretical models, could challenge any overall or general theory of how music therapy may give health benefits. It could also challenge any attempts in these individual models to search for a single cause within the music itself, or in the mind or body, which "causes" changes that may result in improved health, as stated above. A paradigm of complexity thus attempts to balance different explanations or understandings where several influences or factors operate, some linked to music, some to relational circumstances, some to the context or situation, and not in the least, some to the personal interpretation of the individuals involved. This situation is sometimes met within the third stage in music therapy theory development, as suggested by Aigen and beginning in 1982 with the pioneering work of Carolyn Kenny. Aigen characterizes this stage as the beginning of indigenous theory, theories imported from social sciences, art disciplines, and biological sciences, as well as the emergence of broad-based theories relevant to multiple models and generic forms of practice (loc. cit.).

The year of 1982 also seems to coincide with another important international seminar, a symposium organized by Barbara Hesser in New York under the heading "Music in the Life of Man," which again brought together music therapy pioneers and educators from Europe and North and South America. The symposium encouraged dialogues based upon the participants' own interests and thus furthered greater mutual interest in how music therapy could be comprehended (Ruud, 1982). Some of the papers from that symposium also clearly indicated a more reflexive attitude towards music therapy theory (Ruud 1982/2006, see also Forinash and Kenny (2015).

Future Trends

As Aigen (2014) suggests, the current situation with different competing models may continue today. If we project this contemporary situation into the future, we might also predict new integrative models coming, a further differentiation of theories, increased complexity, new tensions and conflicts among adherents of different paradigms, as well as new challenges from research based upon monocausal bids of how and why music affects us. What's more, the current boom in music and brain research will certainly aim for a general, reductionist explanation of how music affects us.

Bunt and Stige (2014) suggest how music therapy theory may benefit from moving towards a more hybrid situation in the future. This would imply a more eclectic attitude and a crossover of theories and concepts from one model to the

other, thus borrowing from the concepts of ‘hybridity’ of postcolonial cultural theorist Homi Bhabha, which picture an "ongoing process of something new being developed, something that had not existed in the previously established cultures" (Bunt & Stige, 2014, p. 207). In dealing with conflicts and tensions that rise from efforts to create integrated theories, Bunt and Stige advocate the need for an awareness of ‘dialogue-enhancing tools’ to promote a culture of hybridity that ‘acknowledges ‘indigenous’ elements in this process, but should help us worry less about borrowing from other disciplines’ (p. 209).

This hybrid situation could take many forms. For instances, we have seen how approaches from improvisational music therapy (Creative Music Therapy) may be combined with a community music approach as well as with new technology (see Næss & Ruud, 2007). Or, we may imagine how theories may create a conceptual framework which will promote research within the field of medical music therapy that will be applied by music therapists. For instance, among the current models we find explanations monocausal explanations, i.e. where music is treated in a pharmacological manner and effecting changes at a synaptic level in the brain. One could speculate how, in the future, research within the field of music and the brain, when combined with approaches from cognitive music psychology, will be able to develop procedures based upon screening of clients and a mapping of musical preferences that will lead to refined programs for the use of music medicine. Such programs may be put into practice by music therapists working along models based upon relational and contextual ideas.

On the other hand, theories that emphasize how musical experiences are affected by contextual and personal factors will acknowledge the impossibility of making prediction about the outcome of music therapy procedures, especially those based upon the performance of live music or artistic approaches, as for instance in improvised music therapy. This paradigm of complexity also reflects a contemporary situation where a multitude of philosophies, values, religions and cultural practices help us to make sense of life. In a world of globalization, we will have to accept how different cosmologies, musics and human cultures will form a diversity of cultures of interpretation when we try to make sense of musical health benefits.

In this global community also, some music therapists do not want to reduce these numerous ways of life interpretations to a single model or philosophy. The field of music therapy thus has to live in a situation where different models of explanation, different theories or ways of describing music therapy practices live side by side. As a consequence of this situation, the followers of a contextual model of music therapy theory will not search for a single or general theory of how music and music therapy may affect us. As a result, theories could also become more local and based upon specific cases, rather than general explanations.

Recently, Brynjulf Stige has advocated a future “practice turn” in music therapy theory. Stige argues that an “emerging family of ‘practice turn theories’ can be appropriated flexibly to provide relevant conceptual tools when ‘zooming in’ and ‘zooming out’ in the micro and macro dimensions of practice, and when trailing connections” (Stige, 2015, p. 3).

A notable example of a multi-factorial understanding of how music therapy works is to be found in DeNora (2013, p. 111-112) in her analysis of a music therapy case with a child with burn injuries undergoing a painful treatment procedure (debridement). The music therapy is performed by Jane Edwards playing guitar for the boy undergoing the treatment, and DeNora suggests how factors such as distraction by diverted brain processes; a possible triggering of dopamine release; music's priming of the boy's anticipatory stance towards the debridement which leads to a recalibration and reframing of the event as musical; modulation of his mind-body through involvement in the music's tempi and sonic parameters resulting in changing physiological processes; the relation with Edwards creating opportunities to assume new social roles; and in sum, transforming the whole medical procedure into a larger and richer, more complex solution. DeNora suggests how this intermix of biology and social praxis resulting from a paring of music with many other factors helped to transform the identity of the boy from a hospital patient and burn victim to a person better able to cope with the pain.

Another current trend which may influence the future discipline and theory building in music therapy concerns the emergence of the new field of 'music and health' (see MacDonald, Kreutz & Mittchell, 2012). As conceptualized by Bonde and Trondalen (Bonde, 2011; Trondalen & Bonde, 2012) we will have to deal with models of music therapy which also acknowledges the folk health practice of everyday musicking for health maintenance. Music therapy may benefit from reducing the distance between the professional practice of music therapy and the everyday health musicking that takes places in the population (see Bonde, Ruud, Skånland & Trondalen 2013). However, this blurring of boarders between different disciplinary identities and practices may give rise to new conflicts and tensions.

We could also expect in the future an increased reflection concerning the concepts, metaphors and theoretical constructs from which music therapists operate. Examples will for instance be the introduction of disability theory, which may alter our understanding of diagnostic praxis, or feminist theories to study how conceptions of gender may influence our discipline. And there will be conceptual clarifications of constructs like "context," "health," "music," and so on. An example of such conceptual clarification and discussion is to be found in the third edition of Kenneth Bruscia's *Defining Music Therapy* (Bruscia, 2014).

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16

The Future of Music Therapy and Neuroscience

Jorg Fachner

Introduction

In 2012, over 28,000 participants gathered in New Orleans, USA for the annual meeting of the Society for Neuroscience. This large number of conference attendees may give an indication of the popularity of neuroscience. In a similar manner, there has been a surge in interest in music neuroscience as evidenced by the increase in the number of brain imaging studies (Zatorre & McGill, 2005). Music is one of the most interesting topics in neuroscience as it comprises cognition processes, emotion, memory, and the individual history of the development of the brain. At the same time, brain imaging methods are becoming more sophisticated and provide insights into formerly hidden cerebral processes related to human functioning and pathologies. Studies of the brain aim to show how music plasticizes fibers (Schlaug, Marchina, & Norton, 2009), sparks neurotransmitter cascades (Menon & Levitin, 2005), and synchronizes both body movement (Toiviainen, Luck, & Thompson, 2010) and biological rhythms (Balzer, 2011).

Functional magnetic resonance imaging (fMRI) is, perhaps, the most decisive yet most restricted form of neuroimaging applied to active music-making, as it is able to show blood flow within the brain with a high degree of spatial accuracy and has been used to capture jazz musicians engaging in solitary and shared music-making using specially designed non-ferromagnetic keyboards (Donnay, Rankin, Lopez-Gonzalez, Jiradejvong, & Limb, 2014; Limb & Braun, 2008). One of the problems when using fMRI to study the brain's responses to music is the delay in the measured response of the blood oxygenation level dependent (BOLD) contrast. This delay is characterized by the hemodynamic response function (HRF), which lasts a few seconds. By this time, fMRI data are more or less an indirect measure of neuronal activity and not as direct as EEG or MEG. Previous fMRI studies of music have attempted to identify brain structures involved in the perception of music-related features relying on controlled auditory paradigms in which these features (such as rhythm, pitch, etc.) have been presented in isolation and manipulated artificially. As a result, they have revealed an incomplete picture of brain function related to musical feature processing. Advances in the field of music information retrieval now make it possible to quantify acoustic features that can be correlated with the fMRI time-series to help unravel music feature processing in the brain (Alluri, et al., 2012).

Biomarkers and Music Therapy Action Mechanisms

Music therapy is increasingly recognized as an area of applied potential in the field of neuroscientific research (Dalla Bella, et al., 2009). Music therapists are attracted to brain research as some principles applied in therapy, such as the social aspects of music making (Koelsch & Stegemann, 2012), seem to be confirmed in neuroscientific research. However, music therapists and neuroscientists recognize not only the limitations of the tools and paradigms of neuroscientific heuristics, but also their potential to visualize components of a music therapy action mechanism (Fachner, 2014; Magee & Stewart, 2015). Furthermore, outcome research aims to detect biomarkers and predictors of treatment response (Fachner, Gold, & Erkkilä, 2013; Gold, Fachner, & Erkkilä, 2013). Biomarkers, such as neurotransmitters, hormones, cytokines, lymphocytes, vital signs and immunoglobulins, that indicate music-related changes of psychoneuroimmunological status are seen as promising tools to study stress reduction and wellbeing from a music psychology perspective, i.e., to use music more systematically (Fancourt, Ockelford, & Belai, 2014).

In Situ Studies, Comparisons and Approximations

When reviewing and systematizing current brain research related to music therapy, three categories may be identified: 1) accompanying in situ (in the original situation and place) studies, 2) empirical comparison studies, and 3) approximations.

There are a few accompanying *in situ* studies on brain functions during music therapy sessions or in healing settings. These studies have aimed to identify immediate change during or after interventions to distinguish an immediate but recurring action of music therapy on brain processes. So far, in contrast to active music making (Altenmuller, Marco-Pallares, Munte, & Schneider, 2009), receptive music therapy settings involving less body movement, for example lying on a body monochord (Fachner & Rittner, 2003; Lee, Bhattacharya, Sohn, & Verres, 2012), or during GIM sessions (Hunt, 2011; Lem, 1998) have been at the forefront of *in situ* brain research in music therapy.

Empirical comparison studies may describe changes in depression treatment (Fachner, et al., 2013), pain management (Hauck, Metzner, Rohlffs, Lorenz, & Engel, 2013), psychotic states (Morgan, et al., 2010) and disorders of consciousness (O'Kelly, et al., 2013) whereby brain imaging may serve as a biomarker to identify general changes in brain processes and to explore the neural underpinnings and action mechanisms of the intervention.

Within the category of *approximations*, basic brain research procedures are utilized on selected musical features, and results are discussed in relation to a suggested music therapy action mechanism (Koelsch, 2009; Suda, Morimoto, Obata, Koizumi, & Maki, 2008). Koelsch (2009) referred to a 5-factor model that was proposed by Hillecke, et al. (2005) to describe current results on attention, emotion, cognition, behavior and communication modulation attributed to music therapy action. As well, Raglio, et al. (2015) investigated music therapy

interaction by contrasting two independently-rated excerpts of session material recorded in a therapy session prior to fMRI scanning. Participants listened to the two contrasts representing high and low interaction patterns from the sessions, and differences in frontal, temporal and occipital areas of the brain were described.

Interest is growing in the area of flow states, for instance, training musicians to enter a relaxed but highly concentrated state in preparation for an artistic performance in the orchestra. In jazz and rock bands, neurofeedback (NFB) methods have been successfully applied and aim to train the participant to control brainwaves that represent certain brain states, moods and emotions. However, engaging in NFB and music therapy means that people learn to perform according to rules that put the music and the body into a harmonic relationship (Miller, 2011).

The Future of Brain Imaging in Music Therapy

Music therapists focus on the interaction between client and therapist and how listening and creating music works in therapy. The client is the focus of most research on the practice of doing therapy. Improvisation is an important part of active music therapy approaches, and in most cases, the client is encouraged to play instruments that enable mutual rhythmic expression. Music therapists may want to contextualize brain activity during important moments in music therapy sessions, but attempts to capture practical music therapy in a laboratory setting often impair the authenticity of the situation. The documentation of significant moments in therapy, on recording appliances in particular, demands a sensitive approach; for example, the measuring instruments must be adjusted as close as possible to everyday practice (see Jörg Fachner, 2004) in order to generate context-sensitive authentic data. However, the technical limitations of brain imaging may impair the naturalistic settings of sessions. Particularly due to its temporal resolution, EEG has been shown to be a feasible tool in the study of music perception and cognition.

Recent developments in wireless EEG hardware have made it possible to use larger (Lindenberger, Müller, & Sänger, 2011) or smaller portable EEG units (Debener, Minow, Emkes, Gandras, & de Vos, 2012) to record data during music performance, and so forth. This is an important advancement, as most stationary recording systems require one to sit quietly. When studying brain activity during music-induced movement, however, the methods employed in sports and movement sciences need to be considered and employed. In addition, measurement of the autonomic nervous system with ECG/HRV, respiration, GSR, or skin temperature is possible (Ridder & Aldridge, 2005). For example, an accelerometer records the force with which a drum beat is played, and this may help to provide information regarding upper limb rehabilitation in people who have had strokes.

Hyperscanning – Two Brains in Tune

Individual music therapy sessions often include improvisation consisting of a dyad, most likely a client and a therapist. Numerous attempts have been made to understand musical communication (Malloch & Trevarthen, 2009; Miell, MacDonald, & Hargreaves, 2005). Synchronization and entrainment, as markers of enhanced musical communication, have been the focus of several investigations (Aaron, et al., 2013; Hari, Himberg, Nummenmaa, Hämäläinen, & Parkkonen, 2013; Sänger, Müller, & Lindenberger, 2012, 2013). One means of acquiring an understanding of what happens when individuals create music together is to analyze electrophysiologically the synchronization patterns of brain waves and heart beat during interactive music making. Such analysis of synchronous brain activity can be realized with two (or more) synchronized machines recording MEG or EEG and/or two corresponding Electrocardiographic (EKG) recording systems.

Neugebauer & Aldridge (1998) studied cardiac synchronization between two musicians improvising. Before analyzing the physiological data of the participants, an index of therapeutic events was created. This evaluation was done in keeping with standards of good practice in Nordoff-Robbins music therapy.

> Criteria for the judgment of musical relevance were concerned either with communicative interaction and/or musical events such as moments of musical interrelation, initiatives for musical change, mutual changes in the playing, changes of tempo, dynamic and mood. (p. 47)

Such indices of therapeutic events were compared to the same events identified on the timeline of the ECG. Analyzing heart rate patterns revealed a convergence of activity within dialogical events represented as parallel or opposite heart rates and simultaneous or alternating peaks indicating action-specific synchrony patterns of coordinated activity.

Pioneering music performance research examining two people playing guitar (Lindenberger, Li, Gruber, & Muller, 2009) or four people playing saxophone (C. Babiloni, et al., 2011) has shown how physiologic functions synchronize in a coherent manner to produce a social product, i.e., a piece of music performed together. This was, for the guitarists, particularly observed "during the periods of (i) preparatory metronome tempo setting and (ii) coordinated play onset" (Lindenberger et al., 2009, p. 1). Playing a piece together led to synchronous activity in frontal and central brain areas (Sänger, et al., 2012), indicating time-locked synching of planning and the creation of a shared activity. Such 'hyperscanning' research in the field of social neuroscience tries to trace how brain-to-brain coupling functions in social interaction (F. Babiloni & Astolfi, 2014). How brain-to-brain coupling aligns with body posture and movement (Hari, et al., 2013), how the temporal dynamics of musical emotions create moments of similar brain activity in listeners (Trost, Frühholz, Cochrane, Cojan, & Vuilleumier, 2015), and how brain processes between music listeners synchronize when listening to longer pieces of music are topics of vital interest in

the field of music therapy (Fachner, 2014; Fachner & Stegemann, 2013). How much of the brain coupling identified so far is applicable to clinical improvisation requires further experimental investigation. Nevertheless, Neugebauer & Aldridge's 1998 study was based on clinical scenarios as they happen in everyday clinical situations.

Recommendations for Future Research

Future music therapy research in neuroscience could focus on the following:

- Utilize and validate biomarkers to compare treatment effectiveness
- Integration of neurometrics into treatment assessment
- Realize objectivist case studies and record continuous data for time series analysis
- Identify therapy process related interplay of situated cognition and reward
- Identify *in situ* biomarkers of the music therapy process
    - Record authentic data close to practice representing real-world settings
    - Realize hyperscanning of therapist-client dyads and group
    - Data analysis follow therapist chosen selections
    - Utilize wireless wearable appliances

We need to apply biomarkers for the process and for providing evidence of music therapy. To accompany therapy processes utilizing wearable measuring applications will allow capturing the *in situ* physiological signature of important moments in therapy by integrating biomarkers into our clinical settings. For example, easy and relatively fast to administer wireless EEG headsets allow recording individual brain activity during therapy or resting states before and after sessions.

Pre/post resting state recordings can be submitted to neurometric comparisons against normative EEG databases, which allow determining individual deviations. The obtained z-scores may ideally decrease from pre to post recording or over the course of therapy, and specific brain regions of interest can be targeted and correlated with psychometric measures. Objectivist case study research settings (Ridder & Fachner, 2016 in press) may include selected biomarkers and psychometric measures that allow accumulating case results of matched client populations.

Dual *in situ* recordings of therapist client dyads can be submitted to a complex hyperscanning analysis based on a therapist's usual post-session analysis. Following the therapist's selection (unless there is chance to triangulate with others) of important parts in the development within sessions and over the time course of music therapy, we can analyze the physiological interpunction of a micro-analytic event structure. These parts that therapists may select to present in

a case study may help to identify how brains synchronize and bodies entrain in music therapy processes. Identifying a biomarker signature of music therapy action will help to explain how music therapy works and may allow prediction of specific disease treatment response and effectiveness.

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17

The Future of Technology in Music Therapy: Towards Collaborative Models of Practice

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There is a growing interest in the field of music therapy and the use of technologies. The books, *Music Technology in Therapeutic and Health settings* (Magee, 2013), and *Music, Health, Technology and Design* (Stensæth, 2014) are recent examples of this. They reveal that music therapy is rapidly moving into new areas where the use and understanding of – as well as the need for – technology in clinical practice, assessment, theory and research collaboration is explored. In these publications, there are examples of how (computer) technology is becoming an efficient way to analyze improvisations in sessions (Erkkilä, Ala-Ruona & Lartillot, 2014), and how interdisciplinary research collaboration between music therapists and technology professionals use music therapy theory as a backdrop to explore how musical and interactive media can be developed to promote health and well-being among people with special needs (Cappelen & Andersson, 2011a, b, 2014 ; Stensæth, Holone & Herstad, 2014; Stensæth & Ruud, 2014). Historically, published accounts of using technology in music therapy relate to the adoption of music technology within clinical practice to support and understand the ways in which clients express themselves. In the following sections this particular history is further described. In the last part of this chapter we will present an ongoing, interdisciplinary research collaboration project to exemplify one of many potential models for the future of technology in music therapy.

A History of Music Technology in Music Therapy

The use of music technology within clinical music therapy is not new, with the earliest research exploring its use in organizing and analyzing behaviors observed in clinical treatment (Hasselbring & Drufus, 1981). Other pioneering research on the topic examined using "microcomputers" with adolescents with behavioral disorders in school settings (Krout & Mason 1988), with children in crisis (Nagler, 1993) and with adults with complex neurological conditions (Nagler & Lee, 1987, 1988). Yet, it is perhaps surprising that music technology arrived in the field of music therapy rather late given the ubiquity of music in everyday technology and social media, as well as the historical dominance of

Musical Instrument Digital Interface (MIDI) technology, which made it possible as long ago as 1982 for digital musical instruments to 'talk' to one another and to interact with small computers.

However, the applications of music technology in therapy have developed exponentially in recent years, reflecting the development of digital technologies more widely in society (Hadley, Hahna, Miller & Bonaventura, 2013; Stensæth, 2015). While the early works on technology in therapy were research driven, the 1990's saw the emergence of a published column for clinicians in *Music Therapy Perspectives* that provided a wealth of guidance for clinicians that remains relevant to this day (c.f. Krout, 1990).

The first generation iPod was released only in November, 2001. Although this did not herald the invention of digital music or of portable "on-the-go" music listening per se, devices such as the iPod have enabled us to carry music around as a personal accessory in more convenient and compact ways than previous forms of hardware technology. Hindsight allows us to see that this specific device has revolutionized individualized access to music in our everyday lives and also for our clients (Stensæth, 2015). Soon thereafter, clients would bring their favorite songs and playlists on their iPods and mp3 players with them to therapy. Norwegian music therapists have described, for example, how this technology has been used as a door opener for identity work and mood regulation among youngsters with mental health challenges (Skarpeid, 2009; Stene, 2009).

In July 2002, a presentation was given at the World Congress of Music Therapy in Oxford, UK, where the British music therapy profession was charged with being slow to engage with technology when compared to other professionals (Swingler, 2002). It was suggested that the profession was choosing not to incorporate electronic technologies, because it shifted the power balance within a therapeutic interaction and enabled clients to find a voice within therapeutic interactions. The same tendencies were found in Scandinavian music therapy, but here the inertia was explained as a lack of interest in technology that stemmed from the field's origins in the humanities and the social sciences (Ruud, 2010), where people, not technology, were thought to dictate the relevant aspects (and impacts) of the future connection between music therapy and technology. Later on Stensæth, et al. (2014. p. 164) suggested that, this conviction did not "necessarily prohibit an interest in computers or ICT [Information and Communications Technology]"; rather it did nevertheless "privilege philosophical practices that clarify and deepen our understanding of these 'things' [sic.] as refracted through our human engagement with them."

Prompted by the charge made at the World Congress in 2002, a survey was undertaken of the Association of Professional Music Therapists in the U.K. that sought to explore to what extent music therapists were incorporating electronic music technologies into their clinical work, as well as the barriers that prevented them from using technology (Magee, 2006). At a similar time in the USA, another survey was undertaken of American Music Therapy Association approved universities and clinical training directors to review the current use of technology in music therapy research and practice in various settings for the purpose of providing information relevant to music therapy educators and

clinicians (Crowe & Rio, 2004). These two surveys provided an historical snapshot of how the profession was engaging with technology across the UK and the USA. Although the latter identified a range of technologies used in current practice, they also determined a need to identify the technologies that were most relevant to clinical practice and called for an "all-encompassing clinical survey" of its use in practice (Crowe & Rio, 2004, p. 283). Magee (2006) established that the main barriers for music therapists engaging with music technologies were a lack of training at the entry level in how to incorporate such tools clinically, and skills development at a more advanced level of training. In particular, therapists indicated that guidance was needed for incorporating electronic music technologies appropriately within the therapeutic context to meet client needs, and for which populations were most suited to technology. Crowe & Rio (2004) also recommended incorporating technology applications into entry-level training and professional practice competencies.

A subsequent exploratory study sought to define music therapy practice incorporating technology within U.K. practice (Magee & Burland, 2007). This established that the client's awareness of cause and effect was an important step in the therapeutic applications of technology when using it within improvisational work and that interdisciplinary practice could assist with providing the knowledge and expertise required in using technology with complex populations.

In mid- 2007, the first generation iPhone was released, with the iPad released in April, 2010. In between, a major piece of research and series of events funded by the Leverhulme Trust drew together interdisciplinary, international collaborators practicing with music technology in health, educational and community settings. The intent of these events was to explore the design and application of a range of music technologies with populations across the life span by professionals that included electronic sound production designers, computer music scientists, music educators, assistive technologists, occupational therapists, composers, performers and music therapists (see Magee, 2011, 2013b).

The Current Status of Music Technology in Music Therapy

Music therapists employ a wide range of technology resources for music-making opportunities in clinical practice (Krout, 2013) as well as for purposes of assessment, evaluation, and research (Hadley, et al., 2013). However, a survey with an international sample of music therapy professionals established that the concerns from the previous surveys of the profession conducted by Crowe and Rio (2004) and Magee (2006) remain (Hahna, Hadley, Miller & Bonaventura, 2012). In particular, adequate and appropriate training in music technology related to clinical practice continues to be a need that remains unmet, with attention required for making technology accessible to a variety of learners.

Age and gender are two particular factors that affect how willing and skilled professionals are to engage with technology in music therapy (Hadley, et al., 2013). The demographic of music therapists who are more likely to say "yes" to using music technology are male and born between 1970 and1989 (Hahna, et al., 2012). In a profession that is predominantly female and where many of its

educators are older than this demographic, the mismatch between clinical knowledge and comfort with technology demands collaborations that are intergenerational and inter-professional (Magee, 2013b, 2014).

Collaboration is at the center of best clinical practice when designing and applying digital music technologies and assistive devices that trigger music (Magee, 2013a). Music therapists can complement their own skills through creative collaborative practices in which they learn from other professionals with alternative skill sets and knowledge (i.e., Stensæth, et al., 2014; Stensæth & Ruud, 2014). This can help music therapists broaden their scope of skills and gain confidence using technology in clinical settings.

But what roles do such diverse players have in a collaborative model? A number of authors have suggested that, when using technology in music therapy, the therapist might serve as a witness (Whitehead-Pleaux & Spall, 2013), a sound engineer (Zigo, 2013; Street, 2013), a producer (Street, 2013; Sadovnik, 2013; Weissberger, 2013), or sometimes even a co-creator equal to the musical and technological media (Stensæth, 2013). Certainly the therapist needs to demonstrate flexibility and a willingness to be the "unskilled" partner in the therapeutic alliance, where the technology provides the common ground between therapist and client (Magee, 2013a).

The studio model proposes a relationship between producer, artist and engineer where each is an actor, positioning the client as the 'artist' and central to the process. The therapist brings a number of skills to the therapeutic alliance, but central to these is an understanding of the client's needs and having clear therapeutic goals in mind. Any one of a number of roles might be adopted by the therapist, depending on the particular music-making activity ranging from facilitator, teacher, co-creator, operator to producer. The ultimate goal is to enable the client to become an active voice in music-making as, through music-making, non-musical goals in a number of domains are addressed.

Complementing the many studies on music therapy and technology, we have also witnessed an extended interest in the field of musicology and music and health, in particular in the Scandinavian countries, wherein technologies are used as health promoters in everyday life (e.g., Beckman, 2014; Skånland, 2013). The 'need' to *share* music on social media, like Facebook and Twitter, is also becoming an important identity marker in the modern lifestyle. These phenomena create new challenges as well as new possibilities for the discipline and practice of music therapy, which we will only mention here, but not discuss at length. One question is: How can we maintain ethical standards when using from computer-mediated music therapy and social media? Bates (2015) discusses these ethical issues by exploring the benefits and risks of technology, along with guidelines that promote ethical thinking and problem-solving. Another question is: How can we maintain and develop our professional integrity among the growing number of health technology workers? This matter was part of a roundtable discussion at the Nordic Music Therapy Conference in Oslo, in August 2015. A third and final question is: How can we help our clients (and especially the most vulnerable ones) avoid exclusion from the digital world, and instead, help them participate in it? The RHYME project discussed in the next section deals with such questions.

The RHYME project: Illustrating a Model of Research Collaboration among Music Therapists and Various Technology Professionals

The large Norwegian interdisciplinary research project called RHYME (2010-2015) (www.rhyme.no), which is funded by the Norwegian Research Council and is in its final round at the time of this publication, provides a model of exemplary interdisciplinary practice in that it has explored a new model of research collaboration among fields, such as interaction design, tangible interaction, industrial design, universal design, music and health, and music therapy. The overall goal in RHYME is political: to reduce potential isolation and passivity and to promote health and well-being for families with children with severe disabilities by engaging them in musical communication, collaboration and co-creation in their everyday lives using customized, interactive and musical tangibles shaped like familiar home objects, such as furniture (e.g., pillows) or toys. The RHYME objects in this respect exceed manual musical instruments and traditional toys with regard to the potential for interactivity. As musical artefacts, the co-creative tangibles in RHYME operate more as technical and musical actors, and even as improvisers. In contrast to traditional sensory stimulation programs where the people are passively stimulated, the RHYME tangibles require active responding from the users. The designers therefore talk of the tangibles as 'co-actors' (Cappelen & Andersson, 2011a, b). Another RHYME objective is to produce theory, practical knowledge and understanding for the profiling and influence of future designers and developers of technological and musical media.

Among the many results of the RHYME projects , the aspects relevant to music therapy are summarized in the following four points:

> 1) Because there seems to be a correlation between the severity of a child's disability and her social isolation in everyday life, music therapists need to work in clients' homes, and not only in clinical settings. By preventing the child with disabilities from becoming even more isolated in her playing, and by helping her family from feeling inadequate in addressing her needs, the music therapist with the use of interactive and musical media designed and programmed for the home can contribute to promoting the family's health. Eide (2014) and Eide & Stensæth (2015) argue that rather than talking of music *as* therapy or music *in* therapy (Bruscia, 1998), the RHYME technology demonstrates that music in the future can be *one of many possible media* in music therapy. Our (interactive and musical) surrounding can act to promote health too.
>
> 2) Because there is economic interest in media, such as those developed in RHYME, it is just a matter of time before it appears on the market. Music therapists therefore need to participate in ensuring that its development matches the varying needs of a diverse society, especially those who have difficulty participating in digital innovation. The programming of the media to include many needs and subjective requests therefore should be

flexible. Music therapists can show the designers how a more individualized approach may ensure more transparency, better directions and more predictable structures.

3) RHYME shows that the health potentials deriving from the use of such media depend on the degree to which the interaction between the users and the media leads to vitalization: When the media engages the users creatively and aesthetically to explore through their basic senses like hearing, sight, tactile sense, kinesthetic sense, proprioceptive sense, and vestibular sense, they are aroused both bodily and mentally. This is basic, and from this, their sense of agency is often strengthened too. At its best, it may enhance users' feelings of bonding and belonging. The design of such media, in that it entails sensory stimulation, represents something promising for clinical practice in music therapy compared to more traditional musical instruments.

4) Music therapists need to collaborate with many professionals to develop interactive and musical technology for the benefit of people's health and well-being. Multidisciplinary discussions and insight from other disciplines and paradigms along with close dialogues with the users has been essential in RHYME to create a common ground of understanding among the researchers. In the discussions, there has been, for example, a tendency for technology researchers to focus more on the interaction between humans and the information systems (and the construction of computer interfaces), whereas music therapy researchers have tended to focus much less on technology and computers and much more on the relationship between humans.

Summary

This chapter shows that there are both challenges and potentials in the future of technology in music therapy. We think that the potential models for the future of technology in music therapy need to take into account the following:

- In clinical practice, age and/or gender together with ethnicity, cultural background and socio-economic wealth are aspects that need careful attention due to the inequalities in cultures and countries.

- Technology needs to be included as a mandatory subject in many music therapy programs and curricula to secure that music therapists get sufficient training in the use of it.

- The field needs more theory building concerning the use of technology. Theory depends on research activity in the area, and here we are witnessing increasing interest. Because future music therapists are part of the digital generation, we think that much more research is likely to be

developed in the years to come. Topics should include interdisciplinary collaborations on development of prototypes and testing these for their clinical applications.

- Music therapy researchers need to collaborate in interdisciplinary research to gain a deeper understanding of technological development and to be able to more actively contribute to the system design of interactive and musical media (like those in RHYME). This could provide the field a better understanding of the potential use of the technology in the artefacts surrounding us daily and to allow other ways of engaging users regarding health promoting music making. Music therapists and music therapy knowledge are also sought after in interdisciplinary collaboration, not just to speak about the value of being together in music, but also to secure the programming of the technology to include subjective, intersubjective and relational aspects – and to empower the resources in our future clients, in particular the most vulnerable users'needs and interests.

Interdisciplinary collaboration can be challenging, but is nevertheless necessary for music therapy and technology to develop happily together. As music therapists, we should note the value of the close connection between humans and musical, interactive objects and how this relationship too can be potentially health promoting for them.

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18

Postlude
Reflections on the Future of Music Therapy

Cheryl Dileo

In the previous chapters, esteemed music therapy professors from around the world have presented their views of the current status of music therapy in their respective areas of expertise, as well as their recommendations for advancing music therapy theory, practice and research in the future. Of interest are the many specific ideas about the current and future needs of the discipline in each area, and the suggestions provided are extremely useful in planning for the future in a systematic and meaningful way. At the same time, it is not surprising to find some consistent ideas and recommendations among these experts, even though their respective topics are quite diverse. Therefore, the purpose of this chapter is to provide a summary of those recommendations provided by one or more authors that might be seen as relevant strategies to advance the discipline of music therapy in the future. These are presented below in an outline format.

Theory

- Theories that embrace the diversity of practice in music therapy are needed
- Biopsychosocial theory may provide an appropriate framework for understanding client needs and for developing music therapy practice with various populations (mental health, dementia, medical).
- Integrative theoretical models are relevant and useful as well as hybrid theories and theories that crossover concepts from one model to another.
- There needs to be a multifactorial understanding of how music therapy works.

Clinical Practice

- There is a need to develop music therapy strategies according to various stages of the therapeutic process; the position/role of the therapist with regard to the client at various stages of the process should be considered.

- New methods and approaches will continue to be incorporated into music therapy, such as mentalization and integrative psychotherapy. Resource-oriented approaches are useful and can be combined with more traditional views of therapy.

- Current music therapy methods (e.g., the Bonny Method of Guided Imagery and Music, songwriting and clinical improvisation) are expanding to include a greater breadth and breadth of practice and more detailed and valid methods of evaluation.

- Contextual factors as well as gender and cultural issues are important considerations in planning and implementing music therapy.

- The daily music activities of the client are important considerations alongside the music therapy process.

- The role of the music therapist may include training caregivers regarding relevant and appropriate uses of music with the clients they serve.

- Interdisciplinary collaboration is essential.

- Music therapy practitioners in mental health, medicine, neuro-rehabilitation, etc. require specialized and advanced training beyond basic music therapy training to work competently. Training in technology should be required.

Research

- More and more rigorous research (quantitative, qualitative and mixed methods) is urgently needed.

    - This includes larger samples, multi-site trials and international trials.

    - More studies that investigate long-term and carry-over effects.

    - More qualitative, single case studies.

    - To improve rigor, studies should adhere to reporting guidelines, CONSORT, PRISMA and Cochrane standards.

    - Clinical relevance and clinical significance should be assessed.

- More high-quality meta-reviews are needed.

    - Researchers should consider using the same outcome measures across studies for meta-analysis purposes

- Therapy manuals should be developed for clinical and research purposes.

- Music therapists should establish and make use of interdisciplinary research teams.

- Important topics of research should include:

    - How music therapy works
        - Biomarkers and mechanisms for music therapy effectiveness.

    - Synchronization and entrainment between therapist and client in music therapy.

    - Cost-effectiveness of music therapy.

    - Effects of music therapy on health-protection factors (e.g., social integration).

    - Prevention of illness

    - Testing of new models of music therapy.

- Use of new ways of analyzing improvisation (e.g., computational analysis).

- Implement an integrated approach to research, theory and practice.

Final Thoughts

Envisioning the future is a significant endeavor and should be ongoing in the field of music therapy. Identifying ways to advance the field in theory, research and practice is essential for moving music therapy forward in the best ways possible.

Certainly, it is impossible to predict how music therapy will evolve in the future. However, by deliberately taking steps in the present to ensure that research, theory and practice are at optimal levels and poised for growth, the field of music therapy will indeed have the brightest future possible…perhaps a future that will greatly exceed any current visions.