

Indications in Music Therapy:

Evidence from assessment that can identify the expectations of music therapy as a treatment for Autistic Spectrum Disorder (ASD): meeting the challenge of Evidence Based Practice.

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ARTICLE ABSTRACT

When children with autistic spectrum disorder (ASD) are assessed in music therapy, significant strengths, potentials and resources emerge that may remain hidden in other, more formalised assessments. Therefore it is becoming more necessary to develop a systematic method of describing this responsiveness, in order to define the expectations of therapy. Music therapy is a particularly important intervention for children with ASD to engage and nurture their capacity for flexibility, creativity, variability and tolerance of change, in order to balance the more structured and behaviourally driven education that is currently popular. The potential of treatment can be defined within the context of meeting healthcare needs. A case study will illustrate a model for defining 'expectations of therapy', by drawing on one child's awakened capacity for interaction through shared, improvised music-making.

This paper includes a long appendix providing an evidence based review and recommendations regarding assessment and referral criteria based on current research and clinical evidence.

CONFERENCE ABSTRACT

(Referral for treatment in medical and paramedical professions is made when there is evidence an intervention is effective. When children with autistic spectrum disorder (ASD) are assessed in music therapy, significant strengths, potentials and resources emerge that may remain hidden in other, more formalised assessments. Therefore it is becoming more necessary to develop a

systematic method of describing this responsiveness, in order to define the expectations of therapy. Music therapy is a particularly important intervention for children with ASD to engage and nurture their capacity for flexibility, creativity, variability and tolerance of change, in order to balance the more structured and behaviourally driven education that is currently popular. Research studies and clinical reports have shown that music created spontaneously and creatively through structured and flexible improvisation attracts the attention and provokes engagement in such children, and promotes the development of reciprocal, interactive contact and play (Edgerton 1996, Oldfield 2001, Wigram, 1999,2000). The potential of treatment can be defined within the context of meeting healthcare needs with effective intervention - a pre-requirement in Evidence-Based Practice. Case material will illustrate a model for defining 'expectations of therapy', by drawing on childrens awakened capacity for interaction through shared, improvised music-making.)

This article is about music therapy for people with autistic spectrum disorders. But some of the frameworks proposed can be applied to other clinical populations. I have heard in Denmark and England that music therapy is not considered by some people as a useful treatment for autism, because it is too unstructured. In the USA there was a report in New York State recently that there was not enough evidence to support music therapy as a treatment for autistic children under three. In Denmark, England and the USA, very structured therapy and education such as TEACCH and LOVAAS are popular for people with autism. They are effective interventions for many, there is no doubt, and I have seen good developments with both systems.

But to say that music therapy is not effective is untrue. In fact, the contrary is true – music therapy has a proven record of effect with the pathology of autism.

So let's examine the problem, and also the evidence.

I will start with a focus on the main impairments of children and adults with autistic spectrum disorder. In the diagnostic and assessment clinic based at Harper House Children's Service, Radlett, we refer to Lorna Wing's triad of autistic disability (Wing 1976, 1987), and for diagnosis this is also congruent with the criteria listed in both DSM4 (1994) and ICD10 (1992). There are three main social disorders, impairments in social communication, social interaction and social imagination. In addition to this we usually find unusual, repetitive patterns of self-chosen activity. There is also a tendency for various psychological functions to be affected including language, motor co-ordination, and responses to sensory stimuli and cognitive skills. As music therapists, we should take note of the fact that there is increasing evidence of abnormal perception, resulting in hyperacusis – a hypersensitivity to certain sound. High functioning autistic people such as Temple Grandin and Donna Williams describe this. It is an area in which music therapy can have an important role to play, and I have seen many children with this problem. However when they make sounds in music therapy, and are in control of them, the problem is no longer there.

In order to argue that music therapy should be prescribed for people with autism, we need to use the literature and our own experience to describe the potential benefit of music therapy in treating these specific problems? Over the last 18 months I have prepared a

review summarising some of the relevant studies and clinical reports (Appendix 1). There are over 100 papers on work with autism on the CD-ROM Info 2 Endnote database from Herdecke University in Germany, and more than 125 on the American Music Therapy Association's Database: Music Therapy Research: Quantitative and Qualitative Foundations CD-ROM 1. In April I prepared a similar review supporting the use of Vibroacoustic therapy. I call this process "collecting the evidence", and I give these documents to people who pay for therapy services in the UK. It is important to summarise in 4-5 lines the method and outcome of the work, and some details of the clients. As we all know, administrators and senior clinicians do not have time or the inclination to read many pages, and we need to give them a quick and clear overview of the evidence.

As an example, I would like to shortly focus on one example for autism, a study by Cindy Edgerton (1994) on the effect of improvisational music therapy on the communicative behaviours of autistic children. This is one of the few research studies that have looked at the effect of improvisational music therapy. She chose to measure musical and non-musical communicative behaviour during individual music therapy sessions. Her results showed that improvisational music therapy is effective in increasing autistic children's communicative behaviour. She also showed that when music therapy was withdrawn for one session there was a big decrease in communicative behaviour in all 11 subjects. Communicative behaviour increased over the period of 10 sessions.

11 children from 6-9 years old were included as subjects in the study. Their language ability ranged from 0-5 years and 5 subjects had no language at all. The therapy was carried out as individual sessions, and Piano, drum, and cymbal were used as Cindy works using Nordoff-Robbins methods. She analysed videos and developed a Checklist of Communicative Responses and Acts Score Sheet which included 107 items – 91 musical items and 16 non-musical items. Inter-Observer reliability was established. A Behaviour Change Survey questionnaire was given to parents, teachers and speech therapists. The children had a 30-minute session once a week for 10 weeks. Session 6 was not a music therapy session, making this a research using a reversal design. 10 minutes sections were randomly sampled from each 30-minute session for video analysis.

The results show a consistent increase in communicative responses and acts over time. It is important that a marked fall in communicative acts and responses during the non-music therapy session (session 6) was revealed. It is also important to see that a consistent increase over time tells us that the children were learning and developing greater communication from session to session. It supports the argument that in music therapy we build up a "shared repertoire of events" (Bunt, 1982) between therapist and client that involves meaning and understanding.

Providing examples from the literature of good practice and good research is only part of the process by which we can clarify the value and effect of music therapy for people with autism. We also need to answer the question:

What can music therapy offer to people with autism and Asperger Syndrome?

If we are to convince health institutions and educational institutions that music therapy should be a valued and effective intervention for ANY pathology, we need to define the following criteria quite carefully:

1. **Criteria for referral: Needs which will be met by music therapy**
2. **Expected length of intervention**
3. **Areas of assessment and evaluation: Expectations of therapy**

I am applying this to autism and Asperger Syndrome, but the principles can also be applied to the promotion of music therapy with any clinical group. After our 50-year "honeymoon" the people who buy therapy services and the professionals who refer clients to therapy expect some answers to these questions. It is still typical in many countries that professionals from other disciplines may not know why they should refer someone for music therapy. If you have a language disorder or delay, it is obvious to refer to speech and language therapy, and if you have cerebral palsy or some other physical handicap or disability physiotherapy is clearly indicated. But some people may still think they are referring someone to music therapy for musical activities, development of musical skills, or just to make them happy. Many of you may have already formulated referral criteria, but here is a list I would use for autism that gives criteria, and also describes the needs of the person. They are closely connected to pathological indicators, and are all aspects of autism, which form the working goals of music therapy

1. **Criteria for referral and needs that will be met by music therapy:**

- Difficulties with social interaction at verbal and non-verbal level
- Lack of understanding or motivation for communication
- Rigid and repetitive patterns of activity and play
- Poor relationships
- Hypersensitivity to sounds
- Lack of ability or interest in sharing experiences
- Significant difficulties in coping with change
- Apparent lack of ability to learn from experiences
- Lack of emotional reciprocity and empathy
- Poor sense of self

Expected length of intervention

The second criteria involve trying to define the expected length of therapy. It is difficult to predict the amount of therapy needed to achieve progress and development and to meet the above needs. But health and education systems cannot write a blank check for an indefinite period of treatment. Parents of autistic children I have talked to will argue that

music therapy is a more relevant and fruitful intervention than some of the subjects they are required to be taught in England in the school system. However we need to offer a framework for assessment, treatment and evaluation over time in order to start, and then continue therapy. This proposal can be supported by the results documented in the literature for assessment, short-term therapy and long term therapy.

An initial baseline assessment of 2-3 sessions is a critical period when you can see both the potential of the child and the potential of music therapy treatment. The need for this is supported by people who have described assessment work (Di Franco, 1999; Oldfield, 2000; Schumaker & Calvert-Kruppa, 1999). This assessment gives the criteria for the first period of therapy, which should be 10-12 sessions. This is supported by the results gained by Edgerton in her study. There should be a mid-therapy assessment to report on the progress and process of therapy, which will provide evidence for the need of a longer period of therapy. We know that it can take months to see substantial and lasting results. The second period of therapy could be a further 20 or more sessions. There are many case studies in the literature by Alvin & Warwick (1991), Clarkson (1991), Di Franco (1999), Brown (1999), Robarts (1998) and others showing effects over an extended period of time. Howat (1995) documented a case study of an autistic girl who had music therapy for more than five years – that was a continual process of development. Finally, an End-Therapy assessment with a report on the outcome of It is very important to define a period of therapy, for example 4-6 months, and then offer a report giving the results, which should be related closely to the referral criteria, the needs of the client and the expectations of the therapy. There will be improved credibility of the treatment, and recommendations to continue the treatment will be taken seriously.

Areas of Assessment and Evaluation: Expectations of Therapy: Outcome

Music Therapy's weakest area is our lack of standardised tools for assessment and evaluation. If we could show everyone video's of our work acceptance of its value may be higher. But this doesn't mean we can't use a systematic method for reporting progress and change to validate our work. We do have some tools that we can use:

Assessment and evaluation tools:

Juliette Alvin gave us a criteria for describing listening Responses, Instrumental responses and vocal responses that looks at both musical and psychological process in a qualitative way (Bruscia, 1987, pp. 73-112). Ken Bruscia developed a comprehensive and complex method of analysing and interpreting improvisation – the Improvisation Assessment Profiles (IAP's) (Bruscia 1987, pp. 401-496) . These look in detail at musical parameters and provide a framework for psychological, psychoanalytic and existential interpretation. Edgerton developed a quantitative tool as I described earlier. Paul Nordoff and Clive Robbins worked out different scales: the 13 Categories of response, the Child-therapist Relationship, Musical Communicativeness and Musical Response Scales III (Nordoff & Robbins, 1977). Amelia Oldfield has developed a Diagnostic assessment method (2000). Mercedes Pavlicevic developed her Musical Interaction Ratings (MIR's) for her research in schizophrenia, that is a nine-point scale

for describing the nature of inter-personal and inter-musical relatedness (1995). Karin Schumacker & Calvert-Kruppa have recently published their tool – the Analysis of the Quality of the Relationship (AQR) (1999). Anne Steen Møller has developed a method for describing 5 Levels of Contact (1996). I have published a method of diagnostic assessment (1997, 1999b), and I have also adapted Bruscia's IAP's to make a more practical, focussed and quantitative tool for evaluating improvisation (1999a, 1999b).

These evaluation methods are specific to what happens in the music therapy situation. Two of them use quantitative methods of evaluation, while the majority use qualitative. But they nevertheless are a systematic way of recording and documenting aspects of change that occur in the therapy.

There are other standardised tools, such as the Child Behaviour Checklist or the Susan Spence Social Skills Questionnaires that can be used to look more generally at behaviour and emotional problems.

What can a music therapist propose as their expectations of therapy – what hopes have they for the outcome of therapy? This is a difficult question. It is not like giving medication, although results cannot necessarily be guaranteed even with pharmacological intervention. Speech and language therapy and educational approaches such as Lovaas and Teacch are clearly aimed at developing:

Communication and language

Learning skills

Reduction of bad behaviour

Personal autonomy

Structured activity

The therapy or education is mainly behavioural, and the client learns through a structured and systematic approach, which is both useful for the teachers and helpful for the client. Results in the development of learning skills and communication skills have been good, especially with the Lovaas method. However there is a minimum level of cognitive ability in order to benefit, and people falling into the severe end of the autistic spectrum may not even be included in some of the programmes.

Music Therapy can offer a complimentary list, which includes similar items, but also items with a different focus and expectation. Yes ...we also work on communication and social skills, and development generally, but we also work with the other side of the coin. Music Therapy has been criticised because it is not structured. That is not true, because often music therapy is structured, and we have found that autistic people often need a degree of structure in the music. In fact they make it themselves, and we have to work hard to break down the rigid patterns they develop out of musical structure. Nevertheless, it is a false reality for the autistic person to live inside a structured predictable world, because the world and the people in it are not like that. Music can be structured and safe, and also unstructured. So our list for the expectations of therapy may include:

In the area of Communication:

- Activating intersubjective behaviours
- Spontaneous initiation of contact
- Development of meaningful gestures and signs
- Development of communicative vocalisation
- Emergence of language in songs

In the area of Social development:

- Motivated interaction
- Shared and understood experiences
- Relationship building skills
- Tolerance of change
- Entrained responses
- Flexibility

In the area of Emotional needs:

- Developed and Increased sense of self
- Empathic synchronicity – shared emotions
- Containment of emotional expression
- Emergence of insight and self-esteem

In the area of Cognitive development:

- Development of awareness, attention and concentration
- Development of organisational skills
- Development of memory

In General:

- Tolerance of sounds (increasingly identified as a problem of perception by Donna Williams, Temple Grandin)
- Meaningful use of objects – from stereotyped and unimaginative use of part-objects
- To divert away from habitual, stereotyped, ritualistic, perseverative or obsessive behaviours.

Case Study: Joel

Joel was referred to Harper House for assessment to evaluate his strengths and difficulties. He was diagnosed autistic, but Great Ormand Street Hospital for Children in London where uncertain about how autistic he is.

He was described with the following problems:

- No use of non-verbal behaviour to regulate social interaction
- Does not use direct eye contact
- Bad at relating to other people – and other children
- Does not share enjoyment
- Lack of socially imitative play
- Stereotypic, ritualistic behaviour

Speech and Language therapy

In the Speech and Language therapy assessment, Joel had poor concentration, and did not take the initiative in verbal communication. There was evidence that he understood instructions, but in a test called Clinical Evaluation of Language Fundamentals (Pre-School) he achieved an age level of 3.1 years.

Cognitive Psychology

In the Cognitive Psychology assessment, a Kauffman ABC, Joel achieved an Intelligence Quotient equivalent of 79. This indicates that his overall intellectual ability is within the normal range, although poorly developed. He had Well Below Average scores in the achievement subtests of Arithmetic and Reading/Decoding.

Music Therapy:

Joel was reported to be responsive to music. Music therapy assessment was recommended to see if there were potential strengths that would not be found in other assessments. My session lasted 50 minutes. The events in the session, and Joel’s response, are closely connected to the list I presented earlier of EXPECTATIONS OF THERAPY.

	Events in Therapy Assessment	Response and Interaction with Joel	Relationship to: Expectations of Therapy
1	Speech and Language Therapy Assessment:	Joel has poor concentration, he is distracting himself, and there is a lack of initiation	Answer Questions <u>Understand language</u>
2	<u>Piano Duet</u>	I am accompanying and supporting Joel matches tempo and rhythm Joel starts to reference me by looking	<ul style="list-style-type: none">• Development of awareness• Development of concentration

			<ul style="list-style-type: none"> • Activating intersubjective behaviours
3	Piano Duet 2	<p>Pentatonic improvisation Joel references more and more He moderates tempo and volume with me: From f to p, from allegro to adagio Piano descends chromatically Joel takes over melody Joel starts moving his body Joel initiates change – kicking his legs</p>	<ul style="list-style-type: none"> • Shared and understood experiences • Tolerance of change • Flexibility • Entrained responses • Motivated interaction
4	<u>Continues Piano</u>	<p>Starts to vary – asks to stop Recognises a musical CADENCE: Stops</p>	<ul style="list-style-type: none"> • Development of organisation • Shared experience
5	Drum Duet	<p>Variable and interactive Stable tempo – great sense of timing Can play in phrases Uses Cresendos -</p>	<ul style="list-style-type: none"> • Developed sense of self • Relationship building • Intersubjective behaviour

Events in Therapy Assessment		Response and Interaction	Relationship to: Expectations of Therapy
6	Drums and Piano	<p>Watching and working WITH me Feels and plays the timing in the music Breaks his own patterns</p>	<ul style="list-style-type: none"> • Empathic Synchronicity • Organisation and structure • Spontaneous initiation of contact
7	Dropping drum sticks on the Drum	<p>Copies what I am doing Starts using language with cues Laughing when I fail to catch the stick</p>	<ul style="list-style-type: none"> • Development of meaningful gestures • Shared emotions • Development of memory • Shared experience
8	Asking him to copy rhythmic patterns	<p>Watching me carefully He is laughing at my reaction when he deliberately does it wrong Starts a repetitive pattern of behaviour – but related to me</p>	<ul style="list-style-type: none"> • Awareness, attention • Empathic Synchronicity • Relationship building
9	Imaginative game: Going to sleep, waking up and having breakfast	<p>Joel understands the idea of the game Simultaneously shares my “Ugghh” when I pretend to eat the drumstick Drinks the “imaginative” cup of tea</p>	<ul style="list-style-type: none"> • Imaginative play • Shared emotions • Understood experience • Intersubjective behaviour
10	Piano and Drums	Joel started on the piano, then	<ul style="list-style-type: none"> • Developed and increased sense

		moved to the drums and cymbal. He became independent, allowing me to accompany him..	<ul style="list-style-type: none"> of self Containment of emotional expression
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	Events in Therapy Assessment	Response and Interaction with Joel	Relationship to: Expectations of Therapy
11	Microphone duet	Joel accompanies himself on the piano Develops vocal turn-taking with me More and more spontaneous language Imaginative: Ends with "I'll kick your bottom !!	<ul style="list-style-type: none"> Development of communicative vocalisation Emergence of language in songs Developed sense of self
12	Joel singing with me on piano	Joel makes up his own words. He takes a solo role Role playing a style of singing	<ul style="list-style-type: none"> Emergence of language in songs Development of communicative vocalisation Containment of emotional expression Increased sense of self
13	"Hello" Interaction	Joel starts saying Hello to the speaker. I respond. He takes the microphone and sings Hello. He develops this, getting excited. It is like a recitative. His timing of phrases in musical structure is very developed.	<ul style="list-style-type: none"> Intersubjective behaviour Spontaneous initiation of contact Shared and understood experience Empathic synchronicity – shared emotions

During this session, Joel demonstrated many potentials. He could share, take turns, initiate, use verbal language spontaneously, concentrate for long periods – for example the first period of time he played on the piano lasted 13 minutes without stopping, and share emotions – emotional synchronicity. He could also follow musical cues, anticipate, structure, go into imaginative play, and anticipate the way I was thinking and reacting.

This doesn't mean he was not autistic, it means that in music therapy interaction the individual behind the autistic pathology was allowed to come out – and demonstrate his potential.

Conclusion

The most important thing at this moment in time is for music therapists to feel confident and valued. For the last 50 years we have been quietly developing our work - training, learning, practising, researching, and treating our clients. In 54 countries of the world music therapy training courses have been training music therapists, and there are an estimated 12,000 practising therapists all over the world. In the United States alone, there are 67 university courses in music therapy, and in many countries, governments have recognised music therapy officially as a paramedical profession.

Music therapists have been saying for last 30 years that the work they are doing has importance and value, and for once it is nice to hear the same response from our professional colleagues in medicine and healthcare. We have a record of professional competence and excellence in our work. My hope for the future is that we can document and publish that work to advance the future employment of music therapists and the scientific credibility of music therapy.

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REVIEW OF THE LITERATURE WITHIN THE PARAMETERS OF EVIDENCE BASED PRACTICE

This review sets out a limited number of references as evidence in support of the request for funded referrals for music therapy treatment. The evidence is accumulated according to the criteria defined by the King's Fund Centre for Evidence Based Practice. The author has summarised studies, papers and a range of expert comment, and while this provides a selection from the field of autism and developmental disability, it does not set out to be a comprehensive review. It was prepared under the criteria of evidence based practice.

1. Experimental Research: - Randomised Controlled Trials (RCT's) and Controlled Studies
2. Case Reports/Case Studies
3. Systematic Review/Review
4. Qualitative Studies
5. Expert Opinion

Experimental Research: RCT's and Experimental Studies:

Aldridge (1996) Creative Music Therapy in the Treatment of Children with Developmental Delay. In: Aldridge, D. Music Therapy Research and Practice in Medicine. From Out of the Silence.

Between groups cross over design involving the random allocation of subjects into treatment and control groups. Comparison of outcomes in music therapy (Nordoff--Robbins Scales) with developmental stages (Griffiths Scales). Significant changes occur in hand-eye co-ordination, non-verbal and verbal communication

Montello and Coons (1998) Effects of Active Versus Passive Group Music Therapy on Pre-adolescents with Emotional, Learning and Behavioural Disorder. Journal of Music Therapy. XXXV(1) 49-67.

Between groups study finding significant improvement in subjects after receiving both music therapy interventions. The most significant change in subjects was found on the aggression/hostility scale. The results suggest that group music therapy can facilitate the process of self-exploration in emotionally disturbed/learning disabled adolescents and provide a channel for transforming frustration, anger and aggression into the experience of creativity and self-mastery.

Buday (1995) The Effects of Signed and Spoken Words Taught with Music on Sign and Speech by Children with Autism. Journal of Music therapy. XXXII(3) 189-202.

Study on 10 children with Autism comparing the use of music and speech with rhythm and speech in learning signs. Anova revealed significant differences between conditions with more correct learning in the music condition. Results: Better pragmatic skills when using music in children with autism

Wigram (1995) The Psychological and Physiological effects of Low Frequency Sound and Music. Music therapy Perspectives. 13(1).

Within subjects, controlled trials finding significant results between conditions in the reduction of muscle tone and improved range of movement in cerebral palsied adults with severe learning disability when treated with vibrational stimuli using relaxing music and low frequency sound.

Macdonald and O'Donell (1996) The effects of structured music workshops on communication skills, musical ability and self-perception of mildly and moderately mentally handicapped individuals. In: Pratt and Spintge (Eds) MusicMedicine Vol 2.

This paper documents the findings from a controlled study replicating a previous study. A between groups design involving 40 subjects using pre- and post test criteria found significant improvement in the experimental group compared with the control group in musical ability, communication skills and self-perception.

Case Control Study/Case Reports/Case Studies

Kostka (1993) A Comparison of Selected Behaviours of a Student with Autism in Special Education and Regular Music Classes. Music Therapy Perspectives. Vol 11.57-60.

Within subject case study comparing the presence of autistic and non-autistic behaviours in two different conditions - normal music group and a social educational lesson. Results showed a significant decrease in autistic flapping and rocking, with increase in appropriate participation during the music session

Stevens, E & Clark, F (1969) Music Therapy in the Treatment of Autistic Children. Journal of Music Therapy. Winter, 1969, pp. 98-104

Research study on the effect of music therapy in promoting social behaviour. Five subjects, male, age 5-7, diagnosed autistic. Three independent evaluators rated behaviour in 1st, 10th and 18th sessions of music therapy. Observer reliability was established. Friedman Two-way Anova found significant improvement in scores over 18 sessions ($p < .039$). Instrumental, singing activities and action songs were used in therapy. Four of the subjects demonstrated improvement in their social behaviour as a result of weekly music therapy over 18 sessions, measured by the Autism Scale (Ruttenberg et al 1966) . Three were able to progress to regular kindergarten.

Wigram (1999) Assessment methods in Music Therapy: A Humanistic or Natural Science Framework? Nordic Journal of Music Therapy. (8) 1.

This article provides a quantitative framework for describing musical material in the assessment and diagnosis of Autism and Asperger Syndrome. Case studies illustrate how evidence can be found in music therapy to support or deny a diagnostic hypothesis, and how evidence of emerging skills and strengths in interpersonal interaction can be found in music therapy assessment. This article offers a model of assessment that provides evidence for the efficacy of music therapy as an intervention for this pathological group.

Edgerton, C.I. (1994) The Effect of Improvisational Music Therapy on the Communicative Behaviours of Autistic Children. Journal of Music Therapy XXXI (1), 31-62

11 autistic children (aged 6-9) received 10 individual music therapy sessions. A reversal design was used. Results strongly suggest the efficacy of improvisational music therapy in increasing autistic children's communicative behaviour. Significant differences were found between subjects scores on a measure of communicative acts when comparing the first and last sessions of therapy ($p < .01$) Substantial decreases in scores were found in reversal.

Goldstein, C (1964) Music and Creative Arts Therapy for an Autistic Child. Journal of Music Therapy, Dec. 1964 pp.135-138.

Single case study of an autistic child with violent tantrums, isolated behaviour, self-directed aggression, and emotional and mental retardation. Intolerant to sound. Results

over time showed increased tolerance and attention, progress in interpersonal relationships, reduction of rigidity and aggressive and a tested increase in developed intelligence over the 6 months of therapy that was measured as a 10 month improvement in mental age (Stanford-Binet Intelligence Scale

Systematic review

Standley, J (1995) Music as a therapeutic intervention in medical and dental treatment: Research and clinical applications. In Wigram, Saperston and West (Eds) The Art and Science of Music Therapy.

This chapter provides a meta analysis of 55 empirical studies using 129 dependent variables in controlled studies in the more general field of medicine and dentistry. Only 4 of the 129 dependent variables had negative values, indicating that for those dependent measures the music condition in the intervention was less beneficial than the non-musical condition.

Wigram, T (1995) Music Therapy, Music in Medicine, The effects of Music, Vibration and Infrasound.

Comprehensive review of the literature on music therapy and Music in Medicine undertaken for psychology doctorate with London University on the Physical and psychological effect of music and vibration. Included is a more specialised review of related literature from physics, the physics of sound, sound and vibration research.

Hodges, D (1996) Neuromusical Research: A review of the literature In: D. Hodges A Handbook of Music Psychology (Edition 2). Institute for Music Research: San Antonio

Comprehensive review of the literature documenting the effects of music on brain function and the effects of brain impairment of musical function. Studies on hemispheric function regarding processing of musical stimuli. In combination with **Appendix A: Physiological Responses to Music. In Handbook of Music Psychology. Edition 1** provides much of the evidence from the research in the music medicine field.

Qualitative Studies

Evers, S (1992) Music Therapy in the treatment of autistic children: Medico-Sociological data from the Federal Republic of Germany. Acta: Paedipsychiatrica International 55(3), 157-158. Also in he Journal of Child and Adolescent Psychiatry.

Related to the theoretical research on the use of Music Therapy in the treatment of autism. A postal survey. Data from Paediatricians and paediatric institutions showed that music therapy is already accepted as a treatment. 2nd Postal Survey – results from 191

child psychiatrists and 127 paediatric institutions revealed that music therapy is recommended as a treatment by 14.5% of paediatricians and 56% of psychiatrists. Used in 11.1% of general Paediatric clinics and 28.6% of child psychiatry institutions

Expert Opinion

1. Dr. Hugh Jolly (Decsd.) – Consultant Paediatrician, Charing Cross Child Development Centre. Author of "The Book of Child Care" .

Dr. Jolly consistently employed Music Therapists at the Charing Cross CDC since 1978. He went on record in the 1982 BBC2 Documentaries on Music Therapy made by Keith Alexander as saying:

"I would not consider any child to have been assessed unless that assessment included music therapy. I would like to see a significant development of music therapy throughout the country, and every centre such as this one should have a music therapist on the staff."

2. Professor Colwyn Trevarthen – Professor of Psychology, University of Edinburgh .

"Music can heal, but recognition of this has not been easily won. For dedicated music therapists it has been a long struggle. But now music therapy is gaining an increasing respect of doctors responsible for care of the most difficult patients. ... Doctors treating the physical body have had to acknowledge that their work has been supported significantly by changes in a patient's emotional state, awareness of life and will to live that has been caused by the companionship of communicating with a musically able and clinically sensitive (music)therapist."

From the forward to: Wigram, T and De Backer, J (1999) Clinical Applications of Music Therapy in Developmental Disability, Paediatrics and Neurology.

3. Dr. Temple Grandin (Autist)

Toigo, D (1992) Autism: Integrating a Personal Perspective with Music Therapy Practice. Music Therapy Perspectives, Vol 10, 13-20.

This article combines the insights of Dr. Temple Grandin (Diagnosed autistic as a child) with current music therapy practice. Dr. Grandin is supportive of music therapy and recommends it in her writings. In this paper, her views about the experience of autism, the causes of autism and treatment of autism are summarised. Grandin's recommendations that music therapy can help by the following methods are discussed: rhythmic activities with musical instruments; the pleasure of music for children; the development of communication skills; the development of potential of musical giftedness in autistic people.

Relating to clinical practice and using current research, the author defines the importance of music therapy for integrating auditory, proprioceptive, tactile and vestibular stimulation; learning to control and predict the timing of sounds; calming the hyperresponsive central nervous system; acceptance and understanding for people who are at the lower end of the spectrum; toleration of sound, reduction of hypersensitivity and hyperacusis; combining language melody and rhythm to develop communication skills.

4. Relevant quotes taken from responses to the application in 1991 from the profession of Music Therapy to the CPSM, Privy Council and Parliament for State Registration :

From the General Medical Council:

”The rigorous training requirements for persons entering the field of art and music therapy are impressive.”

From the British Medical Association:

Professional Music Therapists have a code of conduct and a central register, set national professional standards for practice and training, and can cite substantial research demonstrating the value of their therapy. Considering the development they have made over recent years, their relationships with other professionals and their emphasis on their role as members of an inter-disciplinary team, it would seem appropriate for music therapists to achieve State Registration to protect their status.....”

From the Royal College of Occupational Therapists:

” The College recognises the growth and development which has taken place within the Arts Therapies in recent years and acknowledges the valuable contribution they now make to the range of therapeutic interventions available across the fields of health and social care ”

From the Royal College of Psychiatrists:

”.....The Music Therapists appear to have high training standards and good professional standards which would make them appropriate for inclusion in the CPSM. We understand that Music Therapists’ training includes a good grounding in psychodynamic principles, which is clearly of value in their work”

From the Royal College of Nursing:

“...The profession of nursing recognises the particular contribution which has been made over many years to the care of the mentally ill and mentally handicapped people by Art and Music Therapy. More recently there has been an extension into other areas of healthcare. ... The College is most impressed by the development of the educational programmes for both these groups, and by the work of their respective associations in defining standards. “

The profession of music therapy was included in the 1960 Professions Supplementary to Medicine Act by an amendment to the Act in 1996.

Issues connected to Experimental Studies and Randomised Controlled Trials

Different types of evidence are admissible, and while RCT's are considered more reliable than other forms of evidence, and sometimes called the "Gold Standard", there are frequent occasions where RCT's are not suitable or even possible.

For the efficacy of music therapy, some points need to be taken into consideration:

1. Studies measuring the effects of music therapy using recorded music within an RCT model are documented in J.Standley (Ed) *Research in Music Therapy: A Tradition of Excellence* NAMT:Silver Spring. ISBN: 0-935868-71-2
2. Music Therapy practised in Europe predominately involves techniques of active, improvisational music making. Studies using this method are difficult to control and impossible to replicate. This is particularly so with the autistic and learning disabled population.
3. Music Therapists have comparatively small case loads of any one pathology, and are not paid to undertake research. Most of their efforts over the last 35 years development within the NHS has focused on providing clinical services, recording case material and reporting on cases.
4. To support the RCT's that have been undertaken, Music Therapy Practitioners and researchers have collected a substantial number of case studies in journals and edited books
5. Evidence was presented to the Council for Professions Supplementary to Medicine in 1990/1991 on the efficacy of music therapy. As a result, music therapy was granted State registration by an amendment to the 1960 PSM Act of Parliament.)
6. If RCT's are the only criteria for funding treatments then other disciplines such as psychiatry, psychotherapy, physiotherapy, Speech and Language Therapy and Occupational Therapy will find it equally hard to provide Evidence
7. Treatment for the learning disabled and psychiatric populations is not governed alone by evidence of change, improvement or cure from experimental research. Maintaining stability and preventing deterioration is important to prevent even more costly care. Quality of life, motivation and interest in the environment is equally important.

The following two points will be addressed in relation to music therapy for children:

1. Does Music Therapy address and meet Healthcare needs
2. Future access to and provision for music therapy services

1. Does Music Therapy address and meet healthcare needs?

Healthcare needs that are typically met by music therapists are defined from the agreed, prevailing pathological characteristics of children with clear diagnoses under DSM IV and ICD10 classifications, and can be summarised as follows:

- Pervasive Developmental Disorders
- Specific Disorders of Psychological Development including:
 - Qualitative impairment in reciprocal social interaction
 - Impairment in communication
 - Impairment in imaginative activity
 - Abnormalities and disorders in cognitive skills
- Abnormalities of posture and motor functioning
- Odd responses to sensory input
- Emotional Disorders with onset specific to childhood
- Self-injurious behaviour
- Persistent and repetitive preoccupations, routines and play
- Significant difficulties in coping with change
- Poor ability to establish, build, sustain meaningful relationships with others
- Attentional problems (ADD & ADHD)
- Hyperactivity, hyper-arousal (Rett Syndrome),
- Motor disability, Cerebral Palsy
- Developmental Disorders of Scholastic Skills

Music Therapy as a treatment addresses these specific health needs, and has been demonstrating that within multi-disciplinary paediatric, child psychiatry and learning disability teams for the last 30 years.

2. Future access to and provision of music therapy services.

Consultant paediatricians are the gatekeepers of the service, and are in the most appropriate position to judge the advisability of referral and assessment through music therapy, and if subsequent treatment is recommended. In order to establish some basic priorities for referral of children to music therapy, based on their healthcare needs, the following criteria are recommended:

Criteria for referral for music therapy assessment (minimum 3 x 1 hour sessions):

1. Early intervention: children diagnosed early (aged 2-5) especially those with autism or PDD have a better long term prognosis when music therapy and other therapies are started early.
2. Evidence from diagnosis of PRIMARY healthcare needs in the following areas:
 - Pre-verbal communication development

- Development of social interaction and reciprocity
- Significant need for insight into emotional disorders
- Development of manual motor skills and reduction in arousal (Rett Syndrome)
- Motor disorders: Especially maintaining and developing range of movement in cerebral palsy

3. Diagnostic Assessment.

Criteria for Music Therapy Treatment (minimum course of treatment 10 x 1 hour/20 1/2hour sessions):

1. Evidence from assessment of significant response to the above defined assessment goals
2. Priority for children functioning at pre-verbal level or very limited language potential
Priority for children with specific emotional needs that can be addressed through a psychotherapeutic and non-verbal intervention.