

Investigating the Efficacy of Art and Music Therapy with Vulnerable Children and Young People: A Systematic Review

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1 Exec Summary

1.1 Overview

This systematic review, kindly commissioned by the Pears Foundation, evaluates the existing quantitative evidence base on the impact of art and music therapy with vulnerable children and young people.

The review discusses vulnerability in relation to five broad subject areas: adoption, attachment and parent-child bonding, mental health, behavioural and social interaction difficulties and special educational needs. Within these five categories, a total of 10 specific conditions and diagnoses are covered.

All studies explored within this review were published since the year 2000 and contain at least some statistical component within their methodologies.

1.2 Summary of findings

The review identified a paucity of relevant quantitative evidence, particularly in relation to art therapy. As it stands therefore, the conclusions drawn from this review should be treated with caution. There is a clear need for further statistical studies to be undertaken to build on the findings of existing work to substantiate their validity.

Only 51 statistical studies were identified which explored any one of the five broad areas of vulnerability and only 49 of these considered unique, original studies; two articles revisited the results of previously published research. Of these 49 publications, 36 related to music therapy and just 14 to art therapy. It is currently unclear what lies behind this imbalance, although it is hypothesised that music therapy lends itself more easily to the measurement and recording often demanded by statistical investigation.

Despite the need for more rigorous investigation, the review identified broadly encouraging results. A crude categorisation of the 49 studies surmised that 25 produced predominantly positive results. These 25 studies serve to demonstrate that art and music therapy can be effective means of supporting vulnerable children and young people. A breakdown between the two disciplines shows that 54% (7 of the 13) studies exploring art therapy were predominantly positive, slightly higher than the proportion of music therapy investigations (50%; 18 of 36).

An analysis of the volume and weight of evidence by subject area seems to indicate that the use of music therapy with children and young people with ASD is very encouraging. It would also suggest that art therapy has been shown to be particularly successful in relation to Behavioural and Social Interaction Difficulties. Meanwhile, studies identified less positive findings generally in relation to the use of therapy with children suffering from concentration and learning problems.

However, it is clear that further work is needed before any meaningful conclusions can be drawn about the impact of art and music therapy with respect to specific contexts or diagnoses. The highly complex nature of the various issues discussed within this review, combined with the wide range of approaches deployed across the 49 unique studies, create significant difficulties in drawing definitive and more specific conclusions at this stage. Many questions remain unanswered and there are substantial gaps in the evidence base. The existing evidence is patchy and tends to cluster around particular topics within each of the two disciplines; 78% of the studies identified relate to three of the ten topics.

1.3 Next steps

Therefore, with the evidence currently available, it is impossible to discern which types of children benefit most from art and music therapies and which treatment methods represent the most effective modes of delivery. There is a clear need to respond to these questions and to build upon the existing evidence base.

It is particularly important that work is undertaken in a domestic setting. Of the 51 studies evaluated in this review, only three were undertaken within the UK. During a time of unprecedented budget constraints, it has never been more important for our services to be able to demonstrate impact to commissioners.

In terms of next steps, this review makes the following recommendations:

- **Researchers and practitioners should capitalise on the opportunity to gather evidence from pre-existing, structured programmes.** The well-established, standardised approach of programmes such as *Sing and Grow* present a relatively low cost means of obtaining a large cross-country sample base. If early efforts are made to standardised outcome measures, data could be compared across regions, demographics, socio-economic factors and other sub-groups which are so often hard to analyse due to low sample size.
- **Therapists should be trained and encouraged to gather data as a matter of day-to-day practice.** Whilst Randomised Controlled Tests are generally considered to represent the more rigorous standard of research, it is unlikely that services will have the funding or the resources to undertake such ventures. Therefore, it is just as important for more cost-effective, ‘low-key’ pre and post intervention measures to be capture systematically and routinely by providers as and when therapy is delivered.
- **Wherever possible services and organisations should pool and share insight.** Positively, in recent years, there has been an increased emphasis in both disciplines on the importance of collating meaningful evidence that can be used to demonstrate efficacy. Organisations such as the British Association of

Art Therapists (BAAT) and the British Association for Music Therapy (BAMT) have spearheaded this agenda at national events but more should be done in this vein.

- **Organisations should prioritise which areas demand research more urgently.** A clear set of priorities, ideally identified and shared at a national level, would help to focus and direct funding toward clear objectives. Although ensuing debate might provoke contrasting views and opinions, it is probable that such discourse would ultimately help to raise the profile of research and evidence within the professions.
- **Mixed methodologies should be utilised (where appropriate) to offer the most comprehensive analysis.** Combined quantitative and qualitative approaches can offer the most comprehensive and holistic insight. One of the key advantages of incorporating qualitative elements is that this additional context can help to determine why results have been disappointing or failed to support research hypotheses.

2 Purpose

This literature review was generously commissioned by the Pears Foundation. It evaluates the existing quantitative evidence base on the impact of delivering music therapy and art therapy to vulnerable children and young people. In doing so, it also identifies any gaps that could be addressed by future research. This review was launched at an event at Coram in October 2017.

3 Introduction

3.1 Background

In recent years there has been heightened interest in the role of creative therapies as a treatment option for vulnerable children (Cobbett, 2016; Finnigan & Starr, 2010) and the National Institute for Health and Care Excellence (NICE) has started to recognise their value in supporting vulnerable young people (Cobbett, 2016). Music therapy and art therapy are gradually being used more commonly by UK agencies working with children and young people as a means of treating a range of social, emotional and behavioural issues (Cobbett, 2016).

Both music therapy (Bruscia, 1987; Marley, 1984) and art therapy (Larose, 1987) have been claimed to have positive calming, restorative and balancing effects on young participants and there is a multitude of anecdotal and case study evidence to demonstrate the efficacy of their use.

This qualitative work has been invaluable in developing understanding of the impact of music and art therapy in niche samples and specific cases. Qualitative research has the advantage of being able to elicit deep insight and detailed understanding of complex cases and studies have highlighted the positive effect of music and art therapies on young people. Such evidence is often particularly compelling because of the 'human' element of the work; participants are understood as individuals rather than a composite part of a larger sample group. Importantly, in this way subtle nuances and idiosyncrasies can be captured that quantitative tools simply cannot measure. Qualitative studies also have the benefit of facilitating greater flexibility of approach enabling therapists to respond and adapt to participants' needs without risking the integrity of the research. Quantitative studies, by definition, are invariably more rigid and structured and often the same is demanded of the therapy being evaluated.

There is an ongoing and legitimate debate about the use of qualitative vs. quantitative methodologies in documenting the effectiveness of creative therapies (Saunders & Saunders, 2000). In art therapy for example, Politsky (1995), Junge and Linesche (1993) and most recently, Gussak and Rosal (2015) have argued for the value for 'softer' descriptive work. In turn, Rogers (1995) has summarised both sides of the

debate within a music therapy context, highlighting the works of Ferrara (1984), Forinash and Gonzalez (1989), Tupker (1995) and Langberg et al. (1992) as proponents of qualitative work (p7).

Yet, despite the many merits of qualitative research, this review focuses solely on statistically robust evidence. Although questions should rightfully be raised about the limitations of quantitative research and the extent to which it should be used in isolation to inform practice, most art therapists today 'recognise the importance of vigorous, quantitatively based empirical research' (Gussak & Rosal, 2015, p.607).

At a time of unprecedented budget constraints where 'funders are expecting more outcomes measures of programme success than process measures' (Saunders & Saunders, 2000, p99) it is important that financial accountability can be demonstrated through quantitative means. Rigorous statistical evaluation provides a platform for development, extension and progression that goes beyond the offer of smaller, qualitative studies. As Gilroy (2006) points out:

'quantitative research...is usually replicated and therein lies its strength. Repetition either highlights erroneous results or confirms true results.'
(p.119).

Furthermore, it can be argued that statistical evidence is needed more than ever to support the further professionalisation of creative therapies in the UK, which has traditionally lagged behind the US in this respect (Stock, Spielhofer & Gieve, 2016). It was not until the year 2000 that the titles 'art therapist' and 'music therapist' were protected by the Health and Care Professional Council (HCPC). Even today, there is still variable recognition of the value of creative therapies within the NHS (Odell-Miller, Hughes & Westacott 2006). As Rogers (1995) comments, 'outcome research using traditional quantitative methods may provide external validity leading to academic recognition and professional credibility' (p.6). To a certain extent therefore, the continuation of statistical studies is crucial to the development and continuation of professional practice.

To demonstrate the efficacy of therapy through robust quantitative methodology is not however without difficulties. Even a quick, preliminary search of materials reveals that the vast majority of existing literature relates to qualitative pieces or case studies. Therapists often claim that they know intuitively that therapy works (Slayton, D'Archer & Kaplan, 2010) but to demonstrate this statistically can be problematic. In addition to the traditional challenges associated with the conduct of rigorous quantitative studies (discussed in Chapter 5) researchers face complex issues associated with the heterogeneous nature of practice within these two specialisms. This however cannot fully explain the notable dearth of statistically robust evidence in this area. It is likely that this can be, at least in part, attributed to relatively recent

professionalisation of practice and the small-scale nature of many therapy providers who may not have the resource to invest in extensive research.

Nevertheless, important and significant quantitative studies have been conducted which provide some evidence to support the efficacy of music and art therapy as a treatment for children and young people with specific needs. This review seeks to evaluate the weight of existing statistical evidence in five overarching areas: Adopted Children and Young People, Attachment and Parent-Child Bonding, Mental Health, Behavioural and Social Interaction Difficulties and Special Educational Needs (SEN). Within these categories evidence has clustered around specific themes (i.e. Attachment & Infants and Children with Health Conditions; Attachment & Vulnerable Families, Anxiety; Grief; Trauma; Concentration & Learning Problems and ASD) which are discussed in detail as discrete subsections.

The review addresses the drawbacks and pitfalls of each study included for analysis as well as identifying 'gaps' in the current quantitative evidence base. Within each section it pinpoints important areas for future research; areas that should be considered in order to progress our understanding of what constitutes the most effective means of assisting vulnerable children and young people.

3.2 Aims of Review

The principal aim of this review is to provide a systematic analysis of quantitative evidence, published between January 2000 and January 2017, that offers insight into the efficacy of music and art therapy with vulnerable children and young people. It seeks to weigh up the strengths and weaknesses in the evidence base as well as identifying areas for future focus.

In order to make the findings from this review as relevant and applicable to clinical practice as possible, it aims to focus on the types of cases most commonly dealt with by art and music therapists working with vulnerable children in the UK. At organisations such as Coram, both art and music therapists work with children suffering from a wide range of social, emotional and psychological issues. The issues most commonly dealt with by Coram have framed the content of this review. The following list of conditions and diagnoses was produced collaboratively by senior art and music therapists at Coram and these issues have driven and formulated our search terms:

- Attachment Disorders / Parent-Child Bonding Issues and/or early relational trauma
- Trauma
- Grief and Bereavement
- Anxiety
- Speech, language and communication difficulties
- Behavioural and Social Interaction Difficulties

-
- Low Self-Esteem
 - Autistic Spectrum Disorders
 - Concentration and Learning Difficulties

The review also provides key contextual information about music and art therapy. It offers a brief overview of what music and art therapy entails as well as summarising some of the key challenges facing researchers in the profession.

In summary, this review responds to the following questions:

- What is art and music therapy?
- What does research tell us about the impact of art and music therapy on social, emotional and psychological outcomes for children and young people with different needs?
- What is the robustness of the evidence and what are circumstances and contexts where evidence is at its most and least robust?
- What is the next step needed to strengthen the evidence base for creative therapies?

4 Methodology

4.1 Search strategy

The parameters of the search strategy were kept relatively broad. Articles published since 2000 in the English language, with a sample size of at least ten participants, were considered within the scope of the initial review search. A wide range of sources of evidence from educational, social sciences and psychological databases were considered. The following catalogues were searched for relevant papers; Taylor and Francis, Wiley, Nordoff Robbins, Cochrane and the National Alliance of Specialized Instructional Support Personnel (NASISP). Specific Music Therapy and Art therapy journals such as *'The Journal of American Art Therapy Association'*, *'The International Journal of Art Therapy'* and *'The British Journal of Music Therapy'* were also consulted.

The central search terms were informed by the PICOS framework (Table 1), derived from the most common cases referred to art and music therapists working at Coram (see section 3.2). In addition, adopted children were included within scope as a discrete population because of both the increasing recognition that this specific group of young people can benefit from creative therapies (discussed in Chapter 7) and the high proportion of adopted children which comprise Coram therapists' workload.

To ensure that the process of sourcing material was thorough and systematic, combinations of the following key search terms (and relevant synonyms) were used to yield results:

'art therapy' 'music therapy' 'art based therapy', 'music based therapy' 'children', 'young people', 'adolescents', 'adopted', 'trauma', 'PTSD', 'loss', 'grief', 'bereavement', 'social communication difficulties', 'relating difficulties', 'emotional regulation difficulties', 'communication issues', 'speech and language difficulties', 'behavioural difficulties', 'low self-esteem', 'anxiety', 'poor mental health', 'depression', 'autism' 'ASD', 'Special Educational Needs', 'social issues', 'psychological issues, 'emotional difficulties' 'concentration difficulties, , 'developmental disabilities', 'concentration difficulties', 'learning difficulties', 'early relational trauma' and 'attachment issues'.

Footnotes and references within respective articles were carefully reviewed for signposting to additional sources that were not captured independently during the search process.

Table 1: PICOS Framework

Population: Children, young people, adolescents, young adults, under 18 suffering from at least one of the following conditions:

- 1) Attachment Disorders / Parent-Child Bonding Issues and/or early relational trauma
 - 2) Trauma
 - 3) Grief and Bereavement
 - 4) Anxiety
 - 5) Speech, language and communication difficulties
 - 6) Behavioural and Social Interaction Difficulties
 - 7) Low Self-Esteem
 - 8) Autistic Spectrum Disorders (ASD)
 - 9) Concentration and Learning Difficulties
- 10) Children who have been adopted were also included as a tenth discrete population because of the prevalence of Coram's work in this area

Intervention: Any arts or musical therapy based programmes conducted in either clinical or non-clinical settings with the population defined above

Comparisons:

Children and young people who do not fall within categories 1-11 as outlined above and/or were not adopted

Outcomes: Any communication, cognitive, attitudinal, emotional, behavioural or educational outcomes pertaining to conditions listed above

Study Design: All study designs were considered at the provisional stage

Articles retained for inclusion within this review have been categorised into three overarching themes; Adopted Children and Young People, Mental Health and Special Educational Needs (SEN). Within each of these broad subject areas evidence clustered around specific conditions and diagnoses and these are discussed as discrete subsections within each category.

The structure of this review is as follows:

- 1) Adopted Children & Young People**
- 2) Attachment & Parent-Child Bonding**
 - Attachment: Infant and children with health conditions
 - Attachment: Vulnerable Families
- 3) Mental Health**
 - Anxiety

-
- Grief and Bereavement
 - Trauma
 - 4) Behavioural and Social Interaction Difficulties**
 - 5) Special Educational Needs (SEN)**
 - Concentration and Learning Difficulties
 - Autistic spectrum disorder (ASD)

Autistic Spectrum Disorder (ASD) spans behavioural and social interaction difficulties as well as learning difficulties and there is an abundance of literature focused on music therapy in this area. As such, it is treated independently in its own subsection within the SEN chapter.

Due the nature of the subject matter and the frequency of co-morbidities displayed by participants within the studies, there can be some ambiguity as to how articles should be categorised. In cases such as these, the primary outcome measure has been used to determine where the study should be grouped. For instance, Porter et al.'s study (2011) has been placed within 'Behavioural and Social Interaction Difficulties' despite the fact that over half his sample base was diagnosed with anxiety.

For the sake of clarity and accessibility, each subsection has been divided into two parts. The first part of each subsection discusses evidence relating to art therapy whilst the second explores music therapy.

4.2 Inclusion and exclusion criteria

This review focuses solely on studies involving infants, children and young people and therefore all included literature considered the experiences of participants aged 18 or under. Interestingly, research exists that explores the impact of music therapy on maternal-foetal attachment (for instance Shin & Kim, 2011 and Federico, 2016), but this area requires dedicated exploration falling outside of the remit of this review.

Insomuch as possible, this review has sought to discuss cases most commonly presented to art and music therapists working in most UK based, child-focused organisations such as Coram.

Studies focussing on the following have been excluded:

- Physical health conditions and physical disabilities
- Acute mental health disorders such as psychosis or schizophrenia
- Refugees or children experiencing war
- Young offenders
- Drug-taking
- Addictions and eating disorders
- Homelessness

Although the search process identified quantitative evidence in the areas listed above, in order to focus the scope of this review, these topics were out of scope because they are not the primary focus of Coram's creative therapy team. Although therapists working at Coram and similar organisations may deal with these issues in their caseload, services are not specialist targeted to these areas. It is recommended that these subjects be thoroughly investigated in subsequent literature reviews.

Studies that have deployed art or music 'interventions' but have not described the treatment as 'therapy' have been excluded. To be included, studies need to have benefited from the involvement qualified art and music therapists.

Only robust statistical evidence published in 2000 or since was considered for inclusion. Despite the many merits of qualitative studies, for practical reasons the scope of the review had to be narrowed and clearly defined. As discussed in the Introduction, funders typically welcome robust statistical evidence over qualitative forms of research and quantitative studies have power in their potential for replication and expansion.

Subsequently, following the initial search utilising the terms and phrases outlined in Section 4.1, a secondary filter was applied to the results which set a minimum standard for robust, quantitative evidence. As described in Section 4.3 below, only articles reaching a minimum score of 2 on the Scientific Maryland Scale were retained for inclusion. Studies with fewer than ten participants were also excluded from the review.

4.3 Quality assessment

The Scientific Maryland Scale (SMS) (Sherman, L. W., Gottfredson, D., MacKenzie, D., Eck, J., Reuter, P., & Bushway, S., 1997) was used to assess the strength of evidence and robustness of methodology in each study. The SMS is a five point scale that ranges from 1 for evaluations based on simple cross sectional correlations to 5 for randomised controlled trials (RCTs). The points on the scale increase in methodological quality and ranks each study based on its research design. Sherman et al. (1997) argue that only studies with a robust comparison group design can provide evidence that a programme has caused the reported impact. This equates to level three and above on the Maryland Scale. However, due to the lack of available evidence, studies attaining a score of 2 have also been included within this review. An overview of the SMS scale can be found in Appendix A.

4.4 Results

Findings from the initial search process gathered a range of evidence from different sources. However the application of the secondary filter (assessment against the SMS criteria) identified few quantitative studies; most of the available research is qualitative and small scale in nature across the majority of relevant subject areas.

A total of 896 papers were identified as potentially relevant in the initial scoping. This was reduced to 430 papers to account for duplications and papers that did not match the search criteria i.e. studies that did not focus on the specified population or described acute mental health conditions such as psychosis or schizophrenia, unpublished studies, those unavailable in the English language, those exploring 'music' or 'art' rather than 'music therapy' or 'art therapy' or those published pre year 2000.

Out of these 430 papers, only 61 could legitimately be rated against the SMS i.e. those that were quantitative in nature with a sample size of at least 10 participants. Other research which included case studies, qualitative investigations, ethnographic work and narrative accounts was excluded. Beyond providing helpful context and commentary, literature reviews have also been excluded and not analysed per se.

Sherman et al. (1997) argue that only studies that have scored level three and above can offer robust evidence that a programme has caused a reported impact. However in this review, papers that scored level 2 were included due to the absence of more rigorous evidence in some areas. Of these 61 studies, 10 papers were assigned to level 1 and subsequently dismissed.

A total of 51 studies were therefore retained for review; 14 pertaining to art therapy and 37 relating to music therapy. However aforementioned, two articles represented re-examinations of earlier studies, so overall 49 independent and unique experiments are considered within this review. Loewy (2015)'s work was revisited the findings of an original study conducted a couple of years earlier; Loewy, Stewart, Dassler, Tesley & Homel (2013). Similarly, Schreier, Ladakakos, Morabito, Chapman & Knudson (2005)'s work explored the results of Chapman, Morabito, Ladakakos, Schreier & Knudson (2001).

Of these 49 original studies:

- 13 papers were assigned to level 2
- 27 papers were assigned to level 3
- 6 papers were assigned to level 4
- 3 papers were assigned to level 5

Table 2 illustrates the final spread of studies by subject area.

Table 2: Studies by subject area

	Art Therapy	Music Therapy
Adoption		
Attachment: Infants and Children with Medical Conditions or Health Issues		Ettenberger, Odell-Miller, Rojas Cárdenas, Serrano, Parker, & Llanos (2016)
		Schlez, Litmanovitz, Bauer, Dolfin, Regev & Arnon (2011)
		Teckenberg-Jansson, Huotilainen, Pölkki Lipsanen & Järvenpää (2011)
		Vianna, Barbosa, Albelino & Cunha (2011)
		Del Olmo, Garrido & Tarrío (2010)
		Del Olmo, Tarrío, Garrido and Marina (2015)
		Loewy, Stewart, Dassler, Tesley & Homel (2013)
		Loewy (2015) <i>[re-examination of above study]</i>
Attachment: Vulnerable Families	Lee & Peng (2017)	Nicholson, Berthelsen, Abad, Williams & Bradley (2008)
		Nicholson, Berthelsen, Abad, Williams & Bradley (2010)
		Jacobsen, McKinney & Holck (2014)
Anxiety		Goldbeck & Ellerkamp (2012)
Grief & Bereavement		Hilliard (2001)
		Dalton & Krout (2006)
		Hilliard (2007)
Trauma	Lyshak-Stelzer, Singer, St John, & Chemtob, (2011)	
	Pifalo (2006)	
	Pretorius & Pfifer (2010)	
	Chapman, Morabito, Ladakakos, Schreier & Knudson (2001)	
	Schreier, Ladakakos, Morabito, Chapman & Knudson (2005) <i>[re-examination of above study]</i>	
Behavioural & Social Interaction Difficulties	Saunders & Saunders (2000)	Gold, Wigram, Voracek (2007)
	Khadar, Babapour & Sabourimoghaddam (2013)	Porter et al. (2011)
	Hashemian & Jarahi (2014)	Chong & Kim (2010)
	Alavinezhad, Mousavi and Sohrabi (2014)	Rickson and Watkins (2003)
	Bazargan & Pakdaman (2016)	Rickson (2006)
		Choi, Lee & Lee's (2008)
		Cobett (2016)
		Lim, Miller and Ruiz (2014)

		Hashemian, Masgoogh & Jarahi (2015)
		Maddah, Ebrahim & Sodagar (2014)
Concentration & Learning Problems	Regev & Guttman (2005)	Duffy & Fuller (2000)
	Freilich & Shechtman (2010)	
ASD	Epp (2008)	LaGasse (2014)
		Kim, Wigram & Gold (2008)
		Thompson, McFerran, and Gold's (2013)
		Kim, Wigram & Gold (2009)
		Ghasemtabar et al. (2015)
		Gattino, Riesgo, Longo, Leite, and Faccini (2011)
		Lim & Draper (2011)
		Oldfield (2006)
	Iseri, Guney, Guvenc & Sener (2014)	
TOTAL	14 Studies	37 studies

5 What is art therapy and music therapy?

Art and music therapy are two key forms of creative therapy. Both art and music therapy, like other creative therapies, can be used to support a wide range of people with different needs. They aim to address a variety of conditions, issues and emotional states, which may encompass family problems, fears and painful past experiences as well as ongoing difficulties. Though art and music therapy is used with equivalent adult cases, this review demonstrates their wide-ranging use with children and young people (i.e. participants under 18 years of age).

Creative therapies are claimed to be particularly beneficial for those who have difficulties expressing themselves verbally (Stock et al., 2016). As such, art and music therapies are used frequently among children who can find it particularly difficult to articulate their feelings through speech (as cited in Eaton, Doherty, Widrick, 2007). Equally, the playful and creative nature of such therapies can hold particular appeal to children and young people.

Art and music therapies can be delivered in a range of ways, either to groups or to individuals in both clinical and non-clinical settings. The therapy may be child-led but may also incorporate pedagogical or directional elements. Furthermore, the mechanism by which each therapy operates varies in accordance with the particular orientation of the therapist (Odell-Miller, Hughes, & Westacott, 2006).

5.1 Art Therapy

Given the variance in delivery and types of therapy, it can be difficult to offer a precise definition of either music or art therapy. This has clear implications for the assessment and evaluation of outcomes, which is discussed in more detail in Chapter 6. Odell-Miller et al. (2006) offer a broad explanation of both forms of therapy. For art therapy, they write:

'Arts therapies provide a psychotherapeutic intervention that enables patients to effect change and growth using art materials to gain insight and promote the resolution of difficulties (p.122)

When working with children, art therapy typically encompasses the use of pencil drawing, colouring, painting, and clay (Eaton et al., 2007). Therapeutic practice may involve the creation of representative and symbolic images (Stock et al., 2016), the creation of containers to capture and release powerful emotion or the use of maps to formulate a clear narrative (Pifalo, 2006). Often therapy may incorporate a narrative element whereby the child is invited to use their art piece as a platform to communicate their feelings. Where it is not possible (or appropriate) to express this narrative verbally, the child may be invited to express themselves through other means, for instance by using figures to 'act' out their emotions. As Malchiodi (2013) notes, creative therapies should embrace the notion that people have different

‘expressive styles’ and be able to cater for this (cited in Stock et al., 2016). The intention is that through this experience, ‘fantasy and reality will be teased apart, leading to self-discovery and cathartic release’ (cited in Eaton et al., 2007, p.256).

5.2 Music Therapy

Music therapy is the use of music and musical interaction as a means of non-verbal expression and is used in many treatment programmes. Like art therapy, it can be offered to children and young people with various emotional, behavioural and developmental disorders and mental health problems and may be used to address issues concerning self-identify, social skills and quality of life (cited in Gold & Wigram, 2007).

Odell-Miller et al. (2006) offer the following broad description of music therapy:

‘Music therapists facilitate interaction and development of insight into patients’ behaviour and emotional difficulties through music making, often using live, improvised music working with rhythm, pitch, tonality, and mood’(p.122)

Music therapy can be categorised into different modes of delivery. Generally speaking, Analytical Music Therapy (AMT) deploys improvisation techniques whereas Guided Imagery and Music (GIM) involve listening to recorded music to reflect on internal emotions. Delivery will be also underpinned by a theoretical framework. In their meta-review, Gold, Voracek & Wigram (2004) identify three key categories of music therapy; psychodynamic, behavioural and humanistic. Beyond this however, they note that there are models of music therapy which combine various approaches such as Alvin’s Free Improvisation Therapy.

6 General challenges to evaluating the efficacy of art and music therapy

Researchers aiming to assess the efficacy of music and art therapy through quantitative evaluation face a number of methodological challenges. Although the majority of these difficulties are not unique to the study of music or art therapy (but also apply to other therapeutic practices) these barriers are pertinent and pressing.

Careful thought and consideration should be given to such issues. Whilst there are no clear answers to overcoming some of these challenges, future research should ensure such obstacles are taken into account during project design. Where it is not possible to fully mitigate these issues, researchers can reflect on the limitations of their research within the context of these challenges.

Some of the following issues are discussed accordingly within this review, but the key difficulties facing researchers wishing to conduct quantitative impact evaluations in the field of art and music therapy are summarised below:

- **Variation in therapy-** As discussed in Chapter 5, ‘music therapy’ and ‘art therapy’ do not represent homogenous practices. Rather, both music therapy and art therapy encompass a broad range of therapeutic models. It is therefore problematic to draw conclusions about the broader efficacy of music or art therapy as approaches within each discipline vary considerably. Furthermore, many therapists, particularly those practising in the UK and Europe, advocate the use of flexible and spontaneous delivery that enables them to respond to the needs of clients (Wigram, Pedersen & Bonde, 2002). Unfortunately this severely hampers our capacity to legitimately extrapolate findings and make general conclusions about the efficacy of either art or music therapy. To further complicate matters, historically, researchers have paid little attention to describing respective interventions. This has invariably limited the extent to which conclusions can be drawn about the efficacy of a particular mode of therapy.
- **Participant–therapist relationships-** The relationship between the therapist and patient can influence the effectiveness of treatment; as Porter et al. (2011) conclude:

‘We cannot rule out that the beneficial effects observed were at least partially caused by the care and attention given by the therapist, and not exclusively the result of factors specific to MT’ (p.6).

Therapists adopt a range of different approaches in terms of their ‘involvement’ in therapy; whilst some adopt more observational approaches others are more integrated within sessions (Van Lith, Schofield, & Fenner, 2013). Therefore to generalise findings, without accounting for the nature of the patient-therapist relationship, can be problematic. Interestingly, Rogers (1995) commented that

patient and therapist often have radically different ideas about whether the relationship or the creative therapy is making the most impact on the patient (cited in Odell-Miller et al. 2006).

- **Sampling issues-** To achieve statistically significant results (for instance between pre and post treatment measures or between two control groups) sample sizes need to be larger than is often feasible or practical for small providers. This is not however insurmountable; to demonstrate a statistically significant medium effect size of .4 can be done with samples of 52 in each group for a paired sample design at 80% power at the gross level (Chan, 2003)
- **Recruitment and Retention-** As a general rule, children and young people are challenging to recruit for research studies (Porter et al., 2011). Not only do researchers in this area need to obtain parental consent for any study involving children or young people, but they also need to contend with the high drop-out rates often associated with vulnerable persons.
- **Ethical Considerations** – Beyond the issue of obtaining consent, researchers often face multiple and complex ethical issues in dealing with this population. Naturally, research cannot proceed if there is risk of patient's treatment being compromised in anyway.
- **Multi-modal approaches-** Often creative therapies are conducted as a component part of a wider therapeutic programme. In such cases it can therefore be difficult, even inappropriate, to discern the impact of music or art therapy as an isolated form of treatment.
- **Co-Morbidities-** vulnerable children and young people often suffer from a plethora of conditions spanning social, emotional, cognitive and behavioural problems and it has been suggested that there at least 230 different psychotherapeutic treatments for such problems (Gold et al., 2004). Within a narrow research focus, this can create challenges for the systematic evaluation of the efficacy of therapy; a child may show signs of improvement in an area outside of the remit of the study. Moreover the complexity of individual cases entails that it can be difficult to discern where progress has been made.
- **Participant Engagement-** participant engagement with therapy will invariably affect the impact of any intervention. Though some studies have attempted to monitor levels of engagement in some capacity, this is problematic to measure and often open to a degree of subjectivity.

7 Review of Evidence: Adopted Children & Young People

Due to the number of adoption agencies utilising creative therapies as a means of treatment, this section investigates the literature exploring the impact of music and art therapy with adopted children and young people.

At Coram, one music therapist and one art therapist's caseload is almost solely comprised of adopted children and young people. Moreover, other UK-based adoption organisations such as Adoption UK and First4Adoption advocate and promote the use of art and music therapy among their client base. Charities such as Barnardo's also recognise the value of creative therapies with this group and offer art therapy to adopted children. Owing to the interest in this area, this review set out to evaluate the weight of evidence relating to the use of creative therapies with adopted children and young people.

Unfortunately the search was futile and no relevant quantitative studies could be identified. A recent review commissioned by the Department for Education to assess the weight of evidence supporting post-adoption support interventions reached the same conclusion, finding 'no evidence of the effectiveness of creative therapies for adopted children' (Stock et al., 2016, p. 54).

Instead, available evidence demonstrating the efficacy of art and music therapy with adopted children and young people is anecdotal or qualitative in nature. Colette Salkeld (2008) for instance has presented case evidence to support the use of music therapy in promoting the development of attachment amongst adopted children. She concludes:

'For many adopted children the trauma they have experienced may have taken place before they were verbal or they may feel a sense of shame talking about their experiences. Music therapy...allows children to go back to these early moments and process their difficulties.' (p.142)

The British Association for Music Therapy (BAMT) is a strong proponent of the benefits of music therapy with adopted children and adolescents. Their short publication *'Music Therapy and Adoption – Supporting Attachment and Health Relationships'* presents the case of Sam, whose adopted parents following his extreme and challenging behaviour had requested he be returned to care. Through music therapy, Sam was able to find a safe place to re-live earlier abuse he had experienced and ultimately remain with his adoptive family.

Although this review does not attempt to undertake a thorough review of qualitative evidence, an initial exploration suggests that in comparison to music therapy there is less published qualitative evidence exploring the use of art therapy with populations of adopted children. This is despite the fact that the use of art therapy with adopted children has increased in the UK (Case & Dalley, 1990) and that work with adopted

children is clearly of interest to the British Association of Art Therapists (BAAT). In April 2016, for instance, the BAAT ran a fully booked one-day course on the topic of ‘Art therapy with adopted children and young people’; pertinently, one of the objectives of the event was to ‘ask art therapists how we can use this golden opportunity to build and strengthen our evidence base’.

Despite some positive indications that creative therapies can be used effectively with adopted children, the notable dearth of robust statistical research is a prominent gap in the existing evidence base. Of course, it is well documented that adopted children and adolescents face particular challenges and difficulties. As Lewis and Ghatge (2015) report, adopted children have often suffered from psychological, sexual or physical abuse, neglect and malnutrition, exposure in the family to drugs and alcohol, parental mental health problems and domestic violence. As a consequence, these experiences often manifest in a range of negative ways including poor mental health, behavioural and developmental issues and subsequently some tentative conclusions about the use of creative therapies with adopted children can be derived from other relevant studies. This review attempts to evaluate the evidence of some of these broader, pertinent themes.

However, statistical research could be undertaken that acknowledges adopted children and adolescents as discrete populations to address this existing gap. There may for instance be particular benefits of utilising art or music therapy at different stages of the adoption journey, which are as yet not documented. This is particularly important given the increasing use of music and art therapies in UK adoption agencies. Indeed, both music and art therapy have been listed by the Adoption Support Fund (ASF) as go-to therapies.

Although interesting and useful conclusions can be drawn from studies which explore associated issues such as trauma and depression, the experiences of adopted children should be acknowledged as unique. Encouragingly, an anticipated work, *‘Creative Therapies for Complex Trauma’*, (Hendry and Hasler, ed. Jessica Kingsley Publishers) due to be published later in 2017, seeks to do this by focusing on a specific condition amongst a population of children and families in foster care, kinship care or adoption. However, it is unclear at this stage whether the book will include quantitative studies.

7.1 The evidence from art therapy relating to adoption

The search did not identify any statistical studies satisfying our criteria that explore the use of art therapy with adopted children or young people.

7.2 The evidence from music therapy relating to adoption

The search did not identify any statistical studies satisfying our criteria that explore the use of music therapy with adopted children or young people.

8 Review of evidence: Attachment and Parent-Child Bonding

In 1951, Bowlby wrote the following to the World Health Organisation:

'The infant and young child should experience a warm, intimate, and continuous relationship with his mother (or permanent mother substitute) in which both find satisfaction and enjoyment' (Edwards, 2011, p.191)

Bowlby's seminal work on attachment concluded that maternal deprivation could result in extreme stress for infants and children, often leading to lifelong consequences. Subsequent work has reinforced this notion, making the link between early positive attachment, future psychological stability and the ability to form healthy intimate relationships later in life (Edwards, 2011). Consequently, this is an area of importance for creative therapists working with children.

It has been written that there is a 'burgeoning interest in the field of attachment amongst art psychotherapists working with children and young people' (cited in Buck, Dent-Brown, Parry, 2012, p.3). Case studies such as those presented by Shore (2000; 2014) demonstrate the positive impact that art therapy can have on facilitating child-parent relationships.

It is also worth noting the recent focus on the application of dyadic art therapy in the area of attachment where therapy is delivered to child-carer 'dyads' (or pairs). Dyadic art therapy is an 'important emerging practice' and 'the effectiveness of this approach looks promising' (cited in Buck et al. 2012, p.3).

The BAAT describes dyadic art practice as:

'A way of working which focuses directly on the child's primary attachment relationship. The therapist does not become the child's therapist or the parent or carer's therapist but the relationship's therapist.' (BAAT, 2015)

A recent survey of British Art therapists revealed that 60% involved parents or carers in their sessions with some degree of frequency (Buck, Dent-Brown & Parry, 2013). Pertinently, dyadic art therapy is often undertaken with fostered and adopted children and their families as well as infants and their birth parents.

There is however currently no agreed or formal evaluation tool for dyadic art therapy which may, at least partially, serve to explain why only one statistical study could be identified. To address the paucity of quantitative evidence in this area, findings from a Delphi process¹ have recently 'established a core set of consensus-derived principles, practices and competences...which can be used in...evaluation and as the basis for future outcome-based research' (NICU funded report, p.32). This is a

¹ Delphi processes are structured means of collating anonymised expert opinion and using it inform decisions or systems

promising platform for art therapists to work from, hopefully serving to pave the way for the undertaking of statistical studies in this area in the non-too distant future.

More statistical evidence is available for music therapy. Music, it is written, 'is a powerful medium for bringing parents and children together, because music can facilitate play and the communicative functions of play' (Jacobsen, McKinney & Holck, 2014, p.312). It has been understood that musical interactions are reflections of real-life interactions where positive musical encounters can lead to strengthening and development of relationships (Jacobsen, et al. 2014).

One publication, edited by Jane Edwards '*Music Therapy and Parent-Infant Bonding*' (2011) focuses specifically on the ways that music therapy can support the parent and child bonding where some vulnerability is experienced. The book presents a mix of case material from across Australia, Ireland, the UK and the US in an attempt to demonstrate the efficacy of music therapy in supporting attachment. It is repeatedly claimed that music therapy is particularly effective when delivered to infants at an early age (cited in Edwards, 2011). It has been concluded that 'in situations where the early interactions between mother and infant have failed, music therapy can help restore the vital nonverbal affect attunement through an improvisational and playful focus' (cited in Jacobsen et al., 2014, p.312)

Yet much of the evidence is qualitative in nature. As Edwards writes, 'the ways in which music therapy promotes attachment needs further research attention' (2011, p.194). Therefore, despite the breadth of evidence indicating the success of music therapy in this area, 'the impact of music-based early childhood parenting interventions is yet to be established' (p.228) and 'there is a clear need for studies that employ more rigorous evaluation designs and measurement methodologies' (p.228) (Nicholson, Berthelesen, Abad, Williams & Bradley, 2008).

Although there is scope for further work to be undertaken, there appears to have been a recent focus on quantitative work in this area. In comparison to art therapy there is a relative 'abundance' of evidence exploring the efficacy of music therapy as a means of promoting positive attachment. A total of thirteen statistical studies exploring music therapy were identified.

The identified studies can be grouped into two distinct categories exploring the impact of creative therapy on the promotion of parent-child attachment with:

- **Premature babies and poorly infants** (10 studies)
- **Vulnerable families** (3 studies)

In the main, studies investigating health conditions focus on babies and young infants (i.e. at the non-verbal stage of their development) within a hospital environment. As will be discussed, much of this research was conducted within Neonatal Intensive Care Units (NICU) around the globe and has explored the use of

music therapy with premature babies or sick infants. A single study, offering a different perspective, focuses on disabled infants (aged 1-3) in the home and represents the only study on art therapy in this area.

In turn, the smaller group of studies with older children focuses on parent-infant relationships in vulnerable families². In these examples, the child may be physically healthy, but is likely to have suffered from emotional neglect.

These two different groups of studies are discussed separately in the following discrete subsections.

8.1 Attachment: Premature babies and poorly infants

Although medical intervention is unfortunately sometimes necessary to preserve and promote infants' physical health, this unnatural environment can pose difficulties for children in the development of normal physiological and emotional responses. The hospital can represent a prohibitive sphere for the establishment of 'sympathetic, contingent and emotionally rich adult-infant relationship(s)' (Malloch et al., 2012, p.387).

Music therapists have been keen to understand how the discipline might serve to mitigate the impact of hospitalisation on parent-child relationships. Indeed, a total of ten separate statistical investigations have been identified, all of which have been published this decade.

Often these studies have measured physiological changes in babies over the course of the experimental period, with respiratory rate, heart rate and oxygen saturation typically used as indication of an infant's state of relaxation (or stress). Additionally, changes in infants' behaviour might be observed and recorded to demonstrate effect³.

Almost all of the studies were conducted with babies within the hospital environment and can be categorised within one of the following two sub-themes:

- **Those that address parent-infant interactions with premature babies**
- **Those that address parent-infant interactions with young infants and babies with other health conditions**

² Parents with disabled children comprise part of Nicholson et al.'s (2008) sample alongside young parents and those facing socio-economic disadvantage. Given the age range of the children and the wide range of vulnerabilities present in the sample base, this study is discussed in the following subsection 7.7.

³ Studies that focus solely on infant physiological or behavioural changes in isolation (such as Arnon et al., 2006 and Hodges & Wilson, 2010) have been excluded from this review. Only studies which explicitly explore adult-infant interactions are discussed. Research has even focused on maternal-foetal attachments (Shin & Kim, 2011) and shown evidence to indicate a positive correlation between music therapy and maternal stress. However, such investigations also fall outside the remit of this review; studies within this section focus on the post-birth period.

A single study (Yang, 2010), exploring the impact of music therapy on disabled infants at home, cannot be categorised within either theme and her study is discussed last. A full list of studies is presented in Table 3.

8.1.1 The evidence from art therapy relating to attachment: premature babies and poorly infants

The search did not identify any statistical studies satisfying our criteria that explore the use of art therapy with premature babies and the development of parent-infant relationships

8.1.2 The evidence from music therapy relating to attachment: premature babies and poorly infants

Music Therapy with Hospitalised Premature Babies

Six quantitative studies investigated the way in which the music therapy can help to promote positive attachment between premature babies and their carers (most often, the baby's birth mother). Evidence has shown that parents who have premature babies can experience significant stress with one study identifying that 40% of mothers of preterm babies suffer from depression a month after giving birth. In turn, depression and poor mental health has been shown to be linked to insecure attachment patterns (Ettenberger et al., 2016).

There has been longstanding historical interest in the impact of music therapy with premature babies. Standley (2002) reviewed ten quantitative studies dating back as far as 1975 in her meta-review of music therapy with premature infants. She was able to identify a significant and positive effect of therapeutic intervention on babies in Neonatal Intensive Care Units (NICU).

The most recent of six studies meeting our criteria was published by **Ettenberger, Odell-Miller, Rojas Cárdenas, Serrano, Parker & Llanos in 2016**. They conducted a study with premature, medically stable, babies and their caregivers in a Neonatal Intensive Care Unity (NICU) in Colombia. The study sought to understand whether music therapy could help to stabilize mothers' psychological state, reduce anxiety and strengthen their relationship with their baby.

Mothers and fathers of 36 infants were invited to the study, which required participation until each family's respective discharge. Physiological data was collected to measure the child's development⁴ alongside self-reports completed by the mother before and after the intervention (*The State Trait Anxiety Inventory* and *The Mother-to-Infant Bonding Scale*). Historic medical data taken from the NICU

⁴ Weight gain, heart rate, oxygen saturation, size, cephalic perimeter and length of hospitalisation

database formed a control group to facilitate comparison of babies' physical development⁵.

Therapy was steered by a trained musical therapist and sessions mainly consisted of singing, typically lullabies or nursery rhymes. Music therapy was delivered during kangaroo care (KC)⁶ a standard intervention for all premature babies that historic cases in the control group would have also participated in.

Findings from the study were somewhat mixed. Positively, the results demonstrated statistically significant improvements in maternal state anxiety and in babies' weight gain. Fathers also demonstrated less anxiety, but there was not a statistically significant difference compared with the control group who also demonstrated lower anxiety scores. Mothers and fathers showed improvement in parent-child bonding, but this was not statistically significant. Although those assigned to the intervention group were shown to be more likely to have shorter stays in hospital and were less likely to require rehospitalisation, neither of these measures achieved statistical significance. No statistically significant differences were identified in babies' heart rate and oxygen saturation between groups.

A substantially larger study from Israel (**Loewy, Stewart, Dassler, Tesley & Homel, 2013**) also investigated the impact of music therapy in NICU. Data was gathered from 272 premature infants hospitalised in 11 NICUs over a three year period⁷. Physiological and observational data was captured before, during and after the intervention as well as daily throughout the two week period of investigation. Three different forms of music therapy were evaluated within the study; parent-sung lullabies (either 'Twinkle, Twinkle' or a parent selected option), the ocean disk (music instrument meant to simulate the fluid sounds of the room) and the gato box (to provide a rhythm emulating the mothers' heart beat). Each infant had each of the 3 interventions or control (where no explicit aural stimulation was presented) for 3 days per week during a period of 2 weeks for a total of 6 interventions.

Loewy et al. (2013) identified a significant decrease in parents' stress levels following intervention, although differences between intervention type were not discussed. Significant results were also identified in terms of the infants' physiology. Overall, babies responded positively to the lullabies, irrespective of song choice as shown by heart rate response and prolonged activity level. The rhythm intervention, using the

⁵ Data was extracted from the database by a member of staff blind to the nature of study: :age of mother, number of children, type of birth, sex of the baby, Apgar scores at 1, 5 and 10 minutes, birth diagnoses, birth weight, gestational age at birth, weight at start of kangaroo care, gestational age at start of kangaroo care, weight at hospital discharge

⁶ A method of caring for premature babies by maximising skin-to-skin contact with its mother for as long as possible each day

⁷ The majority of infants exhibited respiratory distress (88%) or sepsis (32%) and 99% were small for gestational age

gato box, also lowered infants' heart rates. Meanwhile the ocean disk was shown to lower heart rates and improve sleeping patterns.

Two years later **Loewy (2015)** re-examined the evidence gathered from the earlier study to explore in more detail whether the use of parent-selected lullabies in music therapy was superior to the use of a well-known folk theme ('*Twinkle Twinkle*'). Prior to the start of the study, trained music therapists met with parents to help them to identify a 'song of kin' as well as to assess their level of stress. Songs of kin were commonly tunes passed down from one generation to the next or they were favourite songs with special meaning to each family. Where parents were unable to identify a particular song, '*Twinkle Twinkle*' was used as a default selection. In the overall final sample, 52% heard '*Twinkle Twinkle*' and 48% heard song of kin. Only 12 referred to '*Twinkle Twinkle*' as a default melody.

Loewy found that when the song of kin was deployed, infants exhibited increased calorie intake. Those diagnosed with respiratory distress were shown to have improved breathing when song of kin was used. Yet, interestingly, babies demonstrated better oxygen saturation when '*Twinkle Twinkle*' was vocalised. Loewy reflects that this could be associated with the fact that musically, '*Twinkle Twinkle*' represents a 'repeated perfect fifth, which has been associated with ease of learning and enhanced process in listeners or all ages' (Loewy, 2015, p.182).

A further separate study was also conducted in Israel (**Schlez, Litmanovitz, Bauer, Dolfín, Regev & Arnon, 2011**). It sought to explore whether the combination of live harp music therapy and Kangaroo Care was superior to the delivery of Kangaroo Care (KC) in isolation. Specifically, they assessed the impact of the combined therapy-care package in promoting short term-physiological and behavioural parameters of mother-infant dyads.

Fifty-two mother and infant dyads were randomly assigned to either the experimental group (KC and music therapy) or to the control group (KC only). Unlike other interventions described in this section, the music therapist did not use her voice during the sessions, but relied solely on her instrument. During the sessions infants' and mothers' physiological data was collected (heart rates, oxygen saturation and respiratory rates) and a 7 point scale was used to assess infants' behavioural state. A single physician who attended each session recorded these measures. Mothers also completed a self-report comprising 20 descriptive statements for measuring maternal anxiety.

Positively, mothers assigned to the experimental group indicated a significant reduction in maternal anxiety, compared with those who received KC in isolation. No correlation was found between mothers' age, ethnicity, years of education and their anxiety scores, implying that this form of combined therapy is efficacious to a general population. However, no statistically significant physiological differences were found.

A very similar study (**Teckenberg-Jansson, Huotilainen, Pölkki Lipsanen & Järvenpää, 2011**) shared the same objectives as Schlez et al. (2011): to compare the dual treatment of music therapy and KC with KC alone. In this experiment, dual treatment and single treatment interventions were alternated for each parent-child dyad (thereby effectively forming the experimental group *and* the control group).

Both treatment approaches produced positive physiological results (a decrease in heart rates and respiration and an increase in oxygen saturation). However, the dual intervention model produced no significantly different results in terms of impact on oxygen saturation or pulse. The combined MT and KC intervention only showed significant improvement in blood pressure.

Results of a post-therapy parent questionnaire were also somewhat ambiguous. Four in ten (39%) reported that dual treatment had the most effect on their child but 23% reported no difference between the dual MT and KC and single KC intervention. However, half of parents (51%) reported that MT and KC relaxed and calmed their infant and 63% reported that it had a relaxing effect on them personally although it is unclear how this compared to the perspective about the single intervention.

A final study (**Vianna, Barbosa, Albelino & Cunha, 2011**) with premature babies contributed to the evidence base from a different angle and explored the influence of music therapy on the uptake of breastfeeding. Breastfeeding can play a significant role in developing the attachment relationship between child and mother (Gribble, 2006).

Like Schlez et al. (2011) and Teckenberg-Jansson et al. (2011), Vianna et al. (2011) utilised a control group to strengthen their experiment. Vianna et al.'s (2011) study represented the largest of the four experiments. Ninety-four mothers were assigned either to a music therapy group (n=48) or to a comparison group which comprised standard hospital care (46). Music therapy incorporated therapist-led and participant-led elements and was offered three times a week to all participants in the intervention group. Rates of breast-feeding were captured by an independent health professional at time of hospital discharge, at the first follow-up visit (7-15 days after discharge) and at 30 and 60 days after discharge.

The results showed that mothers who did not receive music therapy stayed in hospital for significantly more days than those in the experimental group. They also indicated a statistically significant difference at the first follow up visit with a higher proportion of mothers in the experimental group breast-feeding. Additionally a positive trend toward significance was identified at 30- and 60-day follow-up visits.

Music Therapy with Hospitalised Babies and Infants with other health conditions

An additional three studies explored the impact of music therapy with babies and infants who had not necessarily been born prematurely, but rather had been

hospitalised for other medical reasons. In a Spanish study (**Del Olmo, Garrido & Tarrío, 2010**) 87 infants aged between 0-6 months were randomly selected to participate in the study over a fifteen-month period. All babies were inpatients within the Paediatric Intensive Care Unit (PICU), at a large urban hospital in Madrid.

Physiological data was gathered at three key stages: before, during and after parent-infant interaction. By way of evaluating efficacy of the intervention, all participating dyads interacted with their children during sessions both with and without music therapy, thereby effectively forming both the control and experimental condition. During music therapy, parents were encouraged (although not obligated) to sing.

Results showed a notable decrease in respiratory rates before, during and after the adult-infant interaction when meetings were accompanied with music therapy in comparison to interventions without music. Yet overall, no significant differences were identified between music and non-musical intervention in relation to oxygen saturation or heart rate overall. Interestingly however, when the musical intervention used a binary (rather than ternary) rhythm, there was a significant decrease in infants' heart rate. It was hypothesised that this could be due to its replication of the binary rhythm of mothers' heart rates. Rhythm did not however affect respiratory rate or oxygen saturation.

As an adjunct to their original study, **Del Olmo, Tarrío, Garrido and Marina (2015)** again chose to assess the impact of live music therapy on hospitalised infants. This time, rather than studying the physiological responses of infants, they opted to measure their comfort using the *Comfort Behaviour Scale* (CBS), comprised of six behaviour scales and just two physiological measures. Similar to their previous research, an electric keyboard and a guitar were the primary instruments used. The results showed a significant decrease (i.e. improvement) in scores on the CBS when music therapy accompanied parent-infant interaction. This improvement was evident for both infant boys and girls.

Unlike the other studies summarised above, an Australian study conducted in 2012 (**Malloch et al.**) did not primarily seek to assess babies' physiology but rather focused on their emotional states. The authors noted that previous research tended not to explore infants' social needs or social outcomes and subsequently embarked on a study to address this gap.

Two groups of infants in receipt of treatment at a children's hospital in Melbourne were recruited to the study and were randomly assigned to one of two groups: the music therapy group (n=10) or standard medical care only (n=10)⁸. A third group, comprised of healthy non-hospitalised children, served as a second, additional

⁸ Although these infants represented a range of health conditions, severity of illness was assessed using a standardised measure and the experimental group and control group did not display any significant differences

control group (n=9). Using two measures, the *Alarm Distress Baby Scale* (ADBB) and the *Neurobehavioral Assessment of the Preterm Infant* (NAPI) the study investigated the efficacy of live music therapy in promoting the infants' social engagement.

The results indicated that music therapy had a positive impact on child's neuro-behavioural development. As per the NAPI results, the study concluded that infants in the experimental group were significantly 'better able to maintain self-regulation during social interaction with an adult' (p.386) and they were also shown to be less irritable and to cry less; 'in other words, they protest less when an adult interacts with them' (p.395). Meanwhile, infants not exposed to music therapy did not exhibit the same improvement. Indeed, at the pre-intervention stage, the experimental group was shown to have significantly poorer NAPI scores in comparison to the healthy control group but there was no significant difference following intervention.

In contrast however, no significant difference could be identified with respect to social withdrawal (measured by ADBB). The authors explain that although the two sets of results appear to be contradictory, given the promising findings identified by the NAPI, it may be the case that the ADBB is not as sensitive to subtle changes in social behaviour in very young infants. Additionally, no significant difference in weight gain between groups was observed, although the data suggests a trend indicating that the NICU MT group gained more weight than non-MT group.

Home-Based Music Therapy with Physically Disabled and SEN Infants

Yang's (2016) research was unique in that it explored the impact of home-based music therapy, rather than studying interactions within a hospital environment. Moreover, participating children (aged between 1-3 years old) were older than those involved in other studies and all had some form of disability or developmental delay. Specifically Yang sought to investigate the efficacy of music therapy in promoting 'interaction synchrony' i.e. the matching of child-parent behaviours and mutual involvement in their interactions.

The Musical Bonds intervention used in the study incorporated pedagogical elements for parents. Teaching strategies demonstrated in the programme were based around the principles of affect, match, reciprocity, shared control and contingency. In general, sessions were child-led with parents following their lead.

As a means of measuring change, ten minutes of parent-child 'free-play' was video-recorded at pre and post intervention stages and coded by independent raters who assessed observed material in 15-second segments. Raters observed and coded physical and verbal interactions with respect to two different behaviours; parent-child interaction and parent-child synchrony.

This observational data revealed predominantly positive findings. Parents' physical and verbal responses and children's verbal initiations improved following intervention.

Additionally, parent-child synchrony improved, demonstrating that parents and their children are capable of learning to adapt to each other's play characteristics. Yet on the other hand, there was no significant improvement in children's physical initiations. Yang (2016) hypothesised that it is likely that the nature of children's disabilities strongly influenced their propensity to develop their physical actions. It was also noted that although children's verbal interactions improved at the overall level, very little improvement was noted for those children with no functional speech skills. In summary therefore, music therapy was not able to overcome the more severe challenges posed by disability.

8.1.2.1 How robust is the evidence?

These ten studies identified mixed, but generally positive findings and serve to demonstrate that music therapy can sometimes be an effective means of promoting parent-child attachment with premature and poorly infants.

Although in the main, findings are encouraging, Ettenberger et al. (2016), Schelz et al. (2011), Del Olmo (2010) and Teckenberg-Jansson et al. (2011) presented results that are arguably most ambiguous. Interestingly all four of these studies measured physiological change as a means of demonstrating the efficacy of music therapy but collectively, they represent the least conclusive body of findings. With the exception of Loewy (2013)'s study, physiological measures in isolation do not generally seem to offer rigorous evidence for the use of music therapy. This holds true even when other evidence collated from the same intervention indicates positive improvements in parent-child interactions.

In the future, careful consideration should be given to the measurement and analysis of physiological data in studies of this nature. First, one should consider the reliability of this approach. Ettenberger et al. (2016) attributed the absence of statistically significant change in babies' heart rate and oxygen saturation to difficulties encountered in capturing accurate measurements. It is also unclear how medication may influence infants' physiology. Tellingly, in their later study, Del Olmo et al. (2015) opt to use the Comfort Behaviour Scale instead of collecting physiological data which they conclude 'can be heavily influenced by the use of pharmacologic agents among other variables' (Del Olmo et al, 2015, p.21)

Secondly, there is some debate as to what positive physiological change looks like. For instance, whilst weight gain in premature infants is typically perceived as encouraging, it has been argued that this may be at odds with a lower rate of energy expenditure induced by effective music therapy (Ettenberger et al., 2016). Both Ettenberger et al. (2016) and Schelz et al. (2011) also concluded that it may not be appropriate to measure physiological change when a therapeutic intervention is delivered alongside kangaroo care as it has been shown to have an independent effect on respiratory rates and heart beats.

Even in a clinical environment, it is difficult to manage an array of variables when conducting research with vulnerable infants. Perhaps owing to difficulties in recruitment, two studies did not deploy a rigorous control group, limiting the extent to which conclusions can be generalised. Yang (2016) implemented a pre/post measure quasi experimental methodology whereas Ettenberger et al. (2016) used historic data as a means of comparison but did not offer explanation of if or how this group was assessed to ensure comparability with the experimental group. Furthermore, without employing a strict and unnatural protocol, parents and caregivers will invariably have interacted with the infants in a multitude of different, uncontrolled ways. Moreover, in some of the studies (Del Olmo, 2010, Ettenberger et al. 2016, Loewy, 2016) adults were invited to use their voice in interactions with their child, but this was not mandatory nor taken up consistently.

Of all the research, Loewy et al.'s (2013) study represents the most methodologically robust in its use of a control group, large sample size, multiple participating sites and data collection across a three year period. The study design also benefited from the use of blind data collection to mitigate bias. The authors were able to demonstrate that three different forms of music therapy have different, but positive effects on infants' physiology. It is interesting however, that other studies were unable to demonstrate physiological change in infants to the same degree.

8.1.2.2 What are the next steps to be pursued to strengthen the evidence base?

Collectively these ten studies provide helpful evidence to support the use of music therapy in the promotion of parent-child bonding. Researchers should utilise the existing evidence base building upon this existing knowledge, to inform future investigations.

In particular, future work should seek to better integrate fathers within research. For instance, within Del Olmo et al's (2010) study, mothers attended 82% of intervention sessions, in comparison to just 16% of fathers. Equally, although Yang's study involved fathers in the home therapy, only mothers were asked to complete the assessment. This would help to respond to the changing concept of a 'traditional family' unit in an age whereby fathers are increasingly becoming involved in early childcare. Equally, as discussed in Chapter 7, where appropriate, work with adopted infants and their caregivers would also be hugely beneficial to understand the impact of music therapy in forming those early bonds.

Vianna et al. (2011) were the only researchers to undertake some form of longitudinal analysis, with the other nine studies only seeking to demonstrate the immediate or short-term impact of music therapy. Despite encouraging patterns, they were not however able to statistically demonstrate the long-term impact of music therapy on breastfeeding. Currently therefore, there are no existing studies that demonstrate that music therapy with infants can have a durable and long-lasting impact. This

represents a notable gap in the evidence base which requires attention. Very little is currently understood about the impact of session length and infants' exposure to therapy. This is particularly worthy of attention given that Teckenberg-Jansson et al. (2011) identified a pattern which suggested that infants benefited from therapy sessions more if they have received treatment beforehand. It would be extremely advantageous to learn more about the optimum number and length of music therapy sessions to promote long-lasting impact.

Yang's study (2016) represents the only statistical study where music therapy was conducted at home. From a methodological perspective, her study, relying only on observational data, also represents the weakest endeavour thereby highlighting home-based therapy as an area warranting further research. This is arguably of particular importance given the pedagogical nature of her intervention; if parents and caregivers can be taught some therapeutic techniques, the benefits may be felt without the presence of a therapist.

As a final point of consideration, with the exception of Schlez, et al. (2011), all ten studies utilised the therapist or the caregivers' voice within therapy. It may therefore also be of interest to explore the impact of music in isolation from singing, as the singing of lullabies mirrors natural and common maternal-infant interaction.

Table 3: Attachment: Babies & Infants with Medical Conditions or Health Issues – Evidence

Theme	Study	Description of Therapy	Duration of Therapy	Objectives	Setting	Intervention Design	Sample	Results	SMS Rating
Attachment and Parent-Child Bonding – Premature Babies	Ettenberger, et al. (2016)	Music Therapy Therapy was steered by a trained musical therapist; sessions mainly consisted of singing, typically lullabies or nursery rhymes	Twice weekly sessions from entry to the study until discharge Sessions ranged from 10-40 minutes (average 19 minutes)	To understand whether music therapy could help to stabilize mothers' psychological state, reduce and anxiety and strengthen their relationship with their baby	Clinical, Colombia	Therapist led, dyadic approach	N = 36 medically stable neonates born between the 28th and 34th week of gestation and their parents	Results demonstrated statistically significant improvements in maternal state anxiety and in babies' weight gain. Mothers improved scores on the Mother-to-Infant Bonding Scale, but this was not statistically significant. Fathers demonstrated less anxiety but this was not statistically significant compared to the control group.	3
Attachment and Parent-Child Bonding – Premature Babies	Loewy et al. (2013)	Music Therapy Three different forms of music therapy were evaluated within the study; parent-sung lullabies (either 'Twinkle, Twinkle' or a parent selected option), the ocean disk (music instrument meant to	3 x live interventions as randomised over a 2 week period, delivered three times a	To understand the effects of music therapy on vital signs, feeding and sleep in premature infants, using three intervention types.	Clinical, Israel	Therapist led, individual therapy	N=272 neonates	The use of live sound and parent-preferred lullabies applied by a certified music therapist can influence cardiac and respiratory rate as well as improving feeding behaviours, sucking patterns. MT was also shown to prolong period of quiet- alert states	5

		simulate the fluid sounds of the room) and the gato box (to provide a rhythm emulating the mothers' heart beat).	week						
Attachment and Parent-Child Bonding – Premature Babies	Loewy (2015) [re-examination of 2014 study]	Music Therapy Parent-sung lullaby; either a 'song of kin' selected by the parents or 'Twinkle, Twinkle' as default	3 x live interventions as randomised over a 2 week period, delivered three times a week	To investigate whether parent-selected songs are more effective than traditional lullabies in music therapy with neonates	Clinical, Israel	Therapist led, individual therapy	N=272 neonates	The song of kin encouraged infant calorie intake and those with respiratory distress were shown to have improved breathing However, babies demonstrated better oxygen saturation when 'Twinkle Twinkle' was vocalised.	5
Attachment and Parent-Child Bonding – Premature Babies	Schlez, et al. (2011)	Music Therapy Music therapy was delivered by a trained music therapist who performed live harp music in the style of lullabies. No use of voice	30 minute sessions until discharge	To explore whether the combination of live harp music therapy combined with Kangaroo Care was superior to the delivery of Kangaroo Care (KC) in isolation in promoting short term-physiological and behavioural parameters of mother-infant dyads	Clinical, Israel	Therapist –led, dyadic approach	N = 52 mother and infant dyads	Mothers in receipt of MT experienced significant reduction in maternal anxiety. No statistically significant physiological differences were identified	3
Attachment and Parent-Child Bonding – Premature Babies	Teckenberg-Jansson, et al, 2011)	Music Therapy Music therapy was delivered by a trained	20 minute sessions until	To explore whether the combination of music therapy	Clinical, Finland	Therapist –led, dyadic approach	N = 61 prematurely born infants	Both KC in isolation and KC+MT were shown to produce positive physiological results	3

		therapist who used her voice in combination with a lyre. During performance, she reflected infants' reactions in her sound.	discharge	combined with Kangaroo Care was superior to the delivery of Kangaroo Care (KC) in isolation				The combined MT and KC intervention only showed significant improvement in blood pressure.	
Attachment and Parent-Child Bonding – Premature Babies	Vianna, et al. (2011)	Music Therapy Sessions were divided into four phases: verbal expression/reception, musical expression, lullabies and relaxation and closing with mothers able to select their own instruments throughout.	3 x weekly one hour sessions until discharge	To investigate whether music therapy among mothers of premature new-borns increases breast feeding rates	Clinical, Brazil	Mixture of client-centred and therapist-directed experiences Dyadic approach	N= 94 mother-infant dyads	Results indicated music therapy had a significant effect in increasing breastfeeding rates among mothers of premature new-borns at their first follow up visit and also a positive influence (though not statistically significant) longer term effect	3
Attachment and Parent-Child Bonding – Hospitalised Babies and Infants	Del Olmo, et al. (2010)	Music Therapy Electrical keyboard was used as the primary music instrument, present in all interventions Use of the caregiver's voice was encouraged, though not obligatory	10 minute sessions (for unstated period)	To explore the impact of live-music therapy intervention on the heart rate, oxygen saturation and respiratory rate of infants in a paediatric intensive care unit.	Clinical, Spain	Therapist led	N= 87 hospitalised infants	There was a significant decrease in respiratory rates before, during and after the adult-infant interaction was when meetings were accompanied with music therapy in comparison to interventions without music. Overall, no significant differences were identified between music and non-musical intervention in relation to oxygen saturation or heart rate overall.	3
Attachment and Parent-	Del Olmo, et	Music Therapy	10 minute	To measure babies'	Clinical,	Therapist led	N= 87 hospitalised infants	The results showed a	3

Child Bonding – Hospitalised Babies and Infants	al. (2015)	Electrical keyboard was used as the primary music instrument, present in all interventions Use of the caregiver's voice was encouraged, though not obligatory	sessions (for unstated period)	comfort following live music therapy	Spain			significant increase in babies' comfort when live music therapy accompanied parent-interaction	
Attachment and Parent-Child Bonding – Hospitalised Babies and Infants	Malloch et al. (2012)	Music Therapy Therapy was delivered by a qualified music therapist who aimed to bring the infant to a quiet alert state or sleep state as needed through lullabies and playsongs.	3 x a week with session length varying depending on infant's state On average, sessions lasted 52 minutes	To explore the effectiveness of Music Therapy with hospitalised infants in terms of promoting social engagement	Clinical, Australia	Therapist led, individual therapy	N=29 hospitalised infants All infants were born >36 weeks gestational age, had an anticipated admission of at least 4 weeks, were medically stable	Hospitalised infants who received MT were better able to maintain self-regulation during social interaction with an adult. No significant difference could be identified with respect to social withdrawal.	3
Attachment and Parent-Child Bonding – Infants with developmental disabilities	Yang (2016)	Music Therapy Home base, six week programme called Music Bonds	6 x weekly 40 minute sessions	To investigate the efficacy of music therapy in promoting 'interaction synchrony' between children and parents	Non-clinical	Mainly child-led, dyadic approach utilising some pedagogical elements	N=26 child-parent dyads	Parents' physical and verbal responses and children's verbal initiations improved following intervention Parent-child synchrony improved There was no significant improvement in children's physical initiations	2

8.2 Attachment: Vulnerable Families

While the previous section discussed the issue of attachment between parents and children with health conditions, this section focuses on the development of parental-child bonding outside of the hospital environment. Children participating in the studies described within this section are not only older in age, but their families had been identified as ‘vulnerable’.

Comparatively fewer studies were identified which explore attachment from this angle. Once again, there is much less evidence pertaining to art therapy; only one study could be identified whereas three studies investigate music therapy. It is evident that this is an area of particular interest in Australia where a nationwide music therapy programme has been established as a means of helping disadvantaged parents to form strong relationships with their children. Two of the studies discussed below explore the efficacy of the ‘Sing and Grow’ programme, which has been subsequently been implemented in the UK.

8.2.1 The evidence from art therapy relating to attachment: vulnerable families

Previous studies have shown that parents of children with SEN are particularly prone to stress and are more likely to experience negative emotions towards their children (Lee & Peng, 2017) impacting on their propensity to develop close familial bonds. This context provided the impetus behind **Lee and Peng (2017)’s study**; to understand whether art therapy could help this group of parents to develop empathy and bolster their emotional wellbeing. In their exploration the effectiveness of art therapy in imparting the emotional well-being and empathy of parents with SEN children, Lee and Peng’s study represents the first and only research on the topic.

At a Hong Kong youth centre, mothers of children with SEN were recruited to the experimental group (n=11). Others wishing to participate in research, but who were not interested in partaking in art therapy were assigned to the control group (n=15). Monetary compensation was offered as an incentive to participation. The therapeutic intervention was led by an art therapist and was designed to encourage mothers to reflect on what made them happy when they were younger as well as considering the nature of their relationship with their son or daughter. Validated pre and post-test measures⁹ were completed by all participants but data was also captured in the form of a weekly questionnaire designed to gauge mood at the start of each session and a verbal interview at the end of the intervention period.

The findings from the study were somewhat ambiguous. Data collated from the validated measures did not indicate that art therapy had been more effective in reducing negative emotions, enhancing parents’ understanding of their needs or their

⁹ Brief Symptoms Inventory–18 (BSI–18); Parenting Stress Index, Parent-Child Relationship Questionnaire and Child Behaviour Checklist

children or reduce parenting stress. On the other hand, data collected from the weekly progression ratings and the final 'change interview' showed that art therapy had improved their mood and the interview showed that parenting stress had been reduced. The final interview also revealed that parents exposed to art therapy had better understanding of the needs of their children.

8.2.1.1 How robust is this evidence?

Lee and Peng's study represents the only example of statistical research in this area. Although the study utilised a small sample size (n=26), the experiment was strengthened by the use of a control group and validated measures were used to demonstrate change. However, a much larger sample size would be required to increase the generalisability of findings. This would also allow for an investigation of efficacy by SEN type; Lee and Peng's study does not facilitate any scope for understanding how the programme responds to different mothers' needs.

More importantly, the results themselves are inconclusive. Lee and Peng (2017), pose some suggestions to explain the apparent discrepancy in their results, (which they predominantly attribute to inconsistent question interpretation) but they were unable to offer anything more concrete. Crucially, the validated measures did not indicate positive results and caution should be exercised in applying too much confidence in the untested questionnaire developed by the authors. Additionally, whilst the Change Interview administered by the researchers at the end of the intervention suggested that mothers felt less stressed, this was unsubstantiated by the tried-and-tested Parenting Stress Index.

The control group utilised in the study was comprised of those mothers who did not wish to participate in the intervention, highlighting potential bias between the group concerning their willingness to seek support and/or change their behaviour. Moreover participants were financially incentivised to participate in the study, heightening the risk of social desirability bias.

8.2.1.2 What are the next steps which should be pursued to strengthen the evidence base?

There is a clear general need for further research to explore how art therapy may help to promote attachment. Investigations should extend far beyond the remit of Lee and Peng's study and seek to assess the impact of art therapy on children and families exposed to a range of vulnerabilities (not just SEN).

Interestingly, despite the emergence of dyadic art therapy in this area of practice, Lee and Peng focused on the impact of a mother-only intervention. The study would have been strengthened by researcher observations of the parent-child interactions. In turn, this may have supported the notion that lower levels of maternal stress leads to improved parent-child relations; even within Lee and Peng's study, this is presented

as an assumption, rather than fact. The authors note that future work in this area should run additional parent-child sessions as a means of comparison and this would be recommended.

8.2.2 The evidence from music therapy relating to attachment: vulnerable families

A 2008 study (**Nicholson et al., 2008**) provides one of three examples of quantitative evidence supporting the use of music therapy in promoting parent-infant bonding within vulnerable family units¹⁰. It also represents the earliest of two studies which evaluate the impact of the 10 week '*Sing and Grow*' programme, a music therapy intervention based on the principles and approaches of attachment theory.

The programme which was founded in Queensland is now offered nationally across Australia (and since 2010 has also been available in the UK). For the purposes of the study, the programme was offered to three vulnerable client groups; those facing social-economic disadvantage, young parents or parents of a child with a disability. Using a variety of pre and post intervention measures, the evaluation assessed improvement in relation to parent-child interactions, parental mental health and child behaviour¹¹. The study combined self-reporting with clinician observations in the first two and last two sessions of the programme. In total, results were gathered from 37 group programmes conducted in seven Australian states and territories.

The study identified promising results and found significant improvements over time on both parent-reported questionnaires and clinical observations. Parenting behaviours, child outcomes, observed responsiveness and parent mental health were all found to have improved between pre and post intervention. Improvements were similar across the three parent groups indicating that the '*Sing and Grow*' programme was as effective in treating all three client groups. No changes were however evident for parental warmth or for child behaviour problems.

Two years later, **Nicholson et al. (2010)** published a follow up study to their original evaluation of the *Sing and Grow* programme. Their paper principally sought to examine whether, following national roll out in Australia, changes from pre to post

¹⁰ Field et al. (2000) randomly assigned depressed and non-depressed young mothers to an intervention and control group. Although the intervention group included 'music mood induction', it was also comprised of free day care for the infants, a rehab programme (social, educational and vocational) plus relaxation therapy, massage therapy and mother-infant interaction coaching. Due to the particularly complex and multi-faceted nature of the intervention, this study has not been included within this review owing to the impossibility of isolating the impact of music therapy.

¹¹ The study assessed *parental responsiveness* (using six items from the Child Rearing Questionnaire, Paterson & Sanson, 1999), *irritable parenting* (using five items from Parental Perceptions and Behaviours Scale, Institut de la Statistique du Quebec, 2000), *parenting self-efficacy* (using four items modified from the Early Childhood Longitudinal Study, National Centre for Education Statistics, 2004). *Play and incidental techniques* were rated on five items assessing the frequency of activities in a typical week. The authors also measured *Parental mental health symptoms* (using the Kessler K6 screening scale) and *child behaviour, social play skills and receptive communication skills* (using four NEILS Scales of Developmental Competency, SRI International, 2003).

intervention varied according to implementation site. As a means of assessing this, the authors were required to collate and analyse outcome data from across the programme network¹². Outcome measures for a total of 850 participants, attending *Sing and Grow* group programmes in four areas between 2006-7 were analysed. Results corroborated findings from the study two years earlier and showed positive, statistically significant improvement for clinician and parent reported measures of parenting and child development. The study also found that there were significant improvements on all clinician reported measures of parent and child behaviour serving to reinforce the efficacy of group music therapy as an intervention for vulnerable families and their children.

To investigate their primary aim, the authors compared outcomes for the site where the programme was first established (Queensland) against three locations whether the programme had been subsequently introduced¹³. Interestingly, parent and children reporting showed similar improvements across all sites suggesting that data collated from parents was robust to the implementation process. Yet, in contrast, the extent of pre-to-post change observed by clinicians (for both parent and child behaviour) varied by site. Compared to the three new sites, clinician-reported outcomes were generally greater in the original sites and this held partially true even following statistical adjustment to account for participant and clinician differences¹⁴.

This suggests that in order to maximise efficacy of intervention, changes to future implementation processes should be considered. Informed by a supplementary qualitative exercise, Nicholson et al. (2010) conclude that these changes might include 'improved communication between programme management and state-based Playgroup Associations, allowing more time to develop shared partnerships and perspectives about how the new programme would fit within existing structures and practices, employment of locally-based programme managers and increased resourcing for staff training and supports' (p.11).

A third study, unrelated to the *Sing and Grow* programme, also explored the impact of music therapy in promoting attachment with vulnerable families. In Denmark, **Jacobsen, McKinney and Holck (2014)** explored how music therapy could help to diminish the risk of unhealthy parent-child relationships with families with emotionally neglected children. Within this study, children were older than those attending *Sing and Grow* and were aged between 5-12 years old. Jacobsen et al. (2014) sought to assess the effect of dyadic music therapy intervention on self-

¹² The 2010 study utilised the same measures deployed in the 2008 research

¹³ The sites were not named by the authors in order to protect anonymity of staff

¹⁴ Two of the six clinician measures remained significantly different across sites following the adjustment process. This suggests that the implementation process may have influenced the effectiveness of the programme.

reported parenting stress (using the Parenting Stress Index, PSI) and self-reported parent-child relationships (Parent-Child Relationship Inventory, PCRI). Therapists also observed and recorded change in parenting competencies and parent-child interaction using the Assessment of Parenting Competencies (APC) tool.

Eighteen parent-child dyads were blindly and randomly assigned to receive 10 week music therapy sessions or treatment as usual which mainly consisted of psychological and pedagogical support and guidance. Treatment was administered at a family care centre which was described as an alternative to removing the child from their parents; all participating families were described by social services as exhibiting signs of severe emotional neglect. The music therapy intervention utilised a combined client-centred and therapist-directed approach. There was a strong emphasis on the development of a strong working alliance between parent and therapists and aims and goals of the session were collectively agreed. The therapist ensured that the nature of the goal or focus was appropriately tailored in order to accommodate differing levels of parental resistance and willingness to reflect on their approach to parenting.

Results were positive and showed that dyads who received music therapy intervention exhibited significantly improved parenting competencies, parent-child interaction and non-verbal communication. Music therapy also improved parents' ability to talk to their child, including increasing their empathy. In addition, those who participated in music therapy also reported themselves to be significantly less stressed by the mood of their child in comparison to those who did not receive music therapy.

However, both the treatment and control groups improved significantly in terms of emotional parental response. There were no significant differences between groups in terms of autonomy, parental competence and attachment. As Jacobsen et al (2014) write, 'the absence of between group differences for this measure indicates that the dyadic music therapy may not significantly affect these and may not be a relevant outcome measure for this study' (p.327). The authors suggest that absence of statistical significance between the treatment and control groups in relation to attachment might suggest that 'more sessions are needed for music therapy to influence these core aspects of parenting significantly more than treatment as usual' (p.327).

8.2.2.1 How robust is this evidence?

These three studies exploring the impact of music therapy with vulnerable families all identified positive findings and collectively they indicate the group music therapy is an effective intervention for families with children across a spectrum of ages (0-12 years) spanning verbal and non-verbal stages of development.

All three studies used validated measures to capture pre and post data; Jacobsen and McKinney (2015) even conducted a separate study to confirm the validity of the APC

tool they utilised in their 2014 research. Of the three studies, only Jacobsen et al. (2014) utilised a control group albeit their sample size was significantly smaller than the two *Sing and Grow* evaluations.

Jacobsen et al. (2014) also accept that reliability may have been compromised by the researchers' role in delivery of therapy, although there were no significant differences in outcomes recorded between the two therapists. The authors also discuss that child-reported measures could also have been deployed to substantiate evidence collected from parents and clinicians' observations.

Nicholson et al.'s study (2008) was well-conceived with a large sample size (n=358 parents and children). Measures were taken to ensure consistency of delivery (senior clinicians conducted site visits at least once for each group programme) and objectivity of observational reports (independent coding demonstrated consistency with therapists' observations). A range of validated measures were utilised in the evaluation so variance could be analysed against a number of outcomes. Nicholson et al.'s (2010) later study though not focused on evaluating the efficacy of the *Sing and Grow* program per se, deployed the same broad methodology in terms of data collection. Moreover, findings were based on the largest sample size of any studies discussed within this review (n=850).

However, as the Nicholson et al. (2008, 2010) concede, the greatest limitation to the studies' design was the lack of control groups that could not be implemented due to funding constraints. Beyond this, it was noted that there was notable variability in parents' exposure to the programme. Nicholson et al. (2008) write in their earlier publication, that attendance was inconsistent and that not all parents who completed pre and post measures attended the entire duration of the programme. Equally there was variation in programme length; nearly half (46%) of the programmes included within the study were comprised of eight or nine sessions, rather than the ten as planned. The size of groups across the seven states also varied considerably and nearly a fifth were reported as having larger than optimal group sizes, potentially limiting clinicians' ability to respond to individual needs.

In total, 59% of parents completed pre and post measures so roughly two in five did not complete both data sets. These statistics are considered to be in-line with evaluations of other similar preventative interventions, but analysis of participant demographics indicated that less information was gathered from particular sub-groups. Indigenous parents and young parents were less likely to provide information, as were those who had a history of depression. These patterns were also identified in the later 2010 study. Therefore less can be deduced about the efficacy of the intervention in relation to these groups. As might be expected, Nicholson et al. (2010) reported many of the same limitations in their later study; this time one third of families failed to complete measures at the post-intervention stage.

8.2.2.2. What are the next steps which should be pursued to strengthen the evidence base?

As Jacobsen et al. (2014) write, although ‘using music therapy with emotionally neglected children and families at risk is developing...carefully designed studies are rare’ (p.313). Clearly further statistical research needs to be undertaken to address the existing research gap and to build on completing quantitative and qualitative evidence which suggests that music therapy is an effective intervention in aiding the development of parent-child bonding. Comparative designs should be undertaken in order to eliminate the possibility that improvements are attributed to normal maturational processes rather than intervention. Research would be particularly relevant to domestic practice if studies could be conducted within the UK.

It is of note that the *Sing and Grow* programme has been described as ‘under reported and researched’ (cited in Edwards 2011) although it is also considered to represent ‘the most comprehensively evaluated music therapy parenting intervention to date’ (Nicholson, Berthelsen, Williams and Abad, 2010, p.2). For although, additional studies have discussed the programme, not all have deployed robust methodology. For instance, a study by Abad and Williams (2007) also evaluated *Sing and Grow* and identified positive findings from a sample of 683 participating adults. Over a three-year period, the majority were satisfied (100% enjoyment and 94% would participate again). High proportions also reported feeling closer to their children (70%) a notion supported by therapist observations. Unfortunately, however, robust analysis of pre and post program data was not undertaken as funding was not provided for formal evaluation.

Encouragingly however, Nicholson et al. (2010) were able to demonstrate that although some caution should be exercised in interpretation of clinician outcomes, the evidence suggests that the *Sing and Grow* programme has been (and can continue to be) successfully and consistently implemented on a wider scale. This presents a promising opportunity for practitioners to utilise the programme’s standardised content and to build on the findings discussed by Nicholson et al. (2008, 2010).

It would be of particular interest to conduct further research to understand why, despite the largely positive findings, Nicholson et al (2008), notable proportions (22-28%) reported no difference at the close of the ‘*Sing and Grow*’ programmes. In future studies, it is advisable that consideration is given to those who report no improvement in order to understand why the impact of music therapy varies with different groups. Consultation with music therapists and other experts in the field may help to draw hypotheses about why interventions may be less effective in certain cases. These hypotheses could then be used to develop future research programmes and serve as a platform to eventually conduct RCTs.

Interestingly, some evaluative work has been undertaken in the UK to evaluate the success of the programme, Salkeld and Hayward (2013) have published the findings of their evaluation of the ‘Sing and Grow’ programme run in collaboration with Essex County Council. Pertinently, this particular programme is only offered to adoptive families and results of the pre and post measure showed promising impact of intervention. Unfortunately however, the sample of eight families was too limited to produce statistically significant results. Yet, if consistent delivery could be established and the data pooled, this would provide the scale to establish efficacy in an exploratory trial. As depicted in Figure 1 this could ultimately inform the development of a definitive RCT which could be conducted in a domestic setting.

Figure 1: From MRC (2000) – A framework for development and evaluation of RCTs for complex interventions to improve health

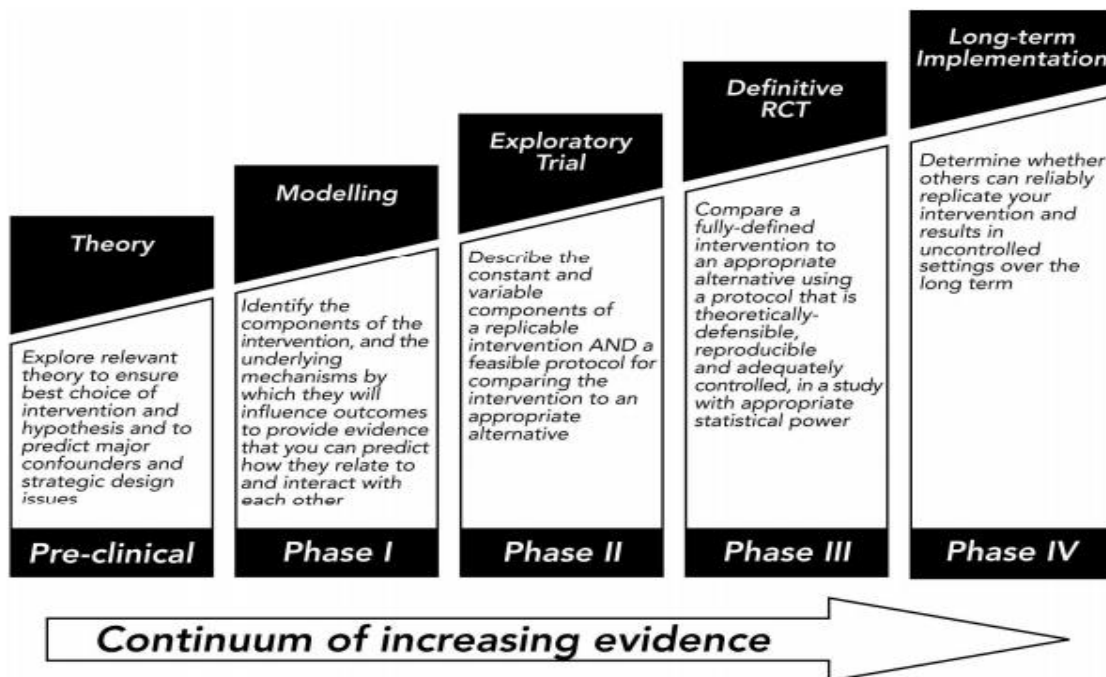


Table 4: Attachment and Parent-Child Bonding – Vulnerable Families - Evidence

Theme	Study	Description of Therapy	Duration of Therapy	Objectives	Setting	Intervention Design	Sample	Results	SMS Rating
Attachment and Parent-Child Bonding: Older children and adolescents	Lee & Peng (2017)	<p>Art therapy</p> <p>Following 2 x introductory sessions, 4 sessions were aimed to help participants revisit their childhood and to reflect on what gave them happiness when they were young.</p> <p>Therapy incorporated use of clay, ink, paint and craft activities such as mask-making</p> <p>Sessions 8-14 were used to help each participants review her relationship with her child, before two final 'closing' sessions</p>	16 x once weekly programme	To explore the effects of group art therapy on the emotional well-being and parental empathy of mothers of children with SEN	Non-clinical, Hong Kong	Therapist led, Group therapy	<p>N=26 mothers</p> <p>Mothers of children who were diagnosed with at least 1 kind of SEN</p> <p>Average age of the mothers in the art therapy group and the control group was 41.46 (SD D 6.31) and 39.40 (SD D 7.62), respectively.</p> <p>Mean ages of the children were 8.16 (SDD 2.61) in the treatment group and 8.27 (SD D 3.61) in the control group.</p>	<p>Results from weekly ratings, interviews and art work indicated that therapy helped mothers to improve their emotional well-being and reduce parenting stress</p> <p>Results from the self-reported questionnaire did not support this</p>	3
Attachment and Parent-Child Bonding: Older children and adolescents	Nicholson et al. (2008)	<p>Music Therapy</p> <p>Sessions followed established plans with set learning objectives. Each session addressed one or more developmental skill.</p>	10 x weekly group	To review changes over time with respect to parent-reported parent-child interactions, parenting behaviours, parenting self-efficacy, parent	Non-Clinical, Australia	Therapist led, group therapy	<p>N=358</p> <p>Marginalized parents and their children aged 0-5 years. 'Parents' were defined as 'responsible adult'</p> <p>358 parents and children from three types of family group; those facing social-economic disadvantage, young parents or</p>	Significant improvements were found for therapist-observed parent and child behaviours, and parent-reported irritable parenting, educational activities in the home, parent mental health and child communication and social play	2

				mental health and children's behavioural, social and communication skills and therapist observation of child behaviours			parents of a child with disability	skills	
Attachment and Parent-Child Bonding: Older children and adolescents	Nicholson et al. (2010)	Music Therapy	10 x weekly group	To examine whether changes from pre to post intervention varied according to implementation site, when the intervention was taken to scale nationally	Non-Clinical, Australia	Therapist led, Group intervention	N=850	Significant improvements were recorded across all clinician observed and parent-reported measures. Two of the six pre-post clinician observed measures varied in the scale of the change by site	2
Attachment and Parent-Child Bonding: Older children and adolescents	Jacobsen et al. (2014)	Music Therapy Dyadic music therapy intervention	6-10 x weekly groups	The purpose of the study was to investigate the effect of a dyadic music therapy intervention on observed parent-child interaction as well as self-reported parenting stress and self-reported child-parents relationships in families at risk and families with emotionally neglected children	Non-clinical, Denmark	Dyadic music therapy Mixture of client-centred and therapist-directed experiences	N= 18 dyads Children aged 5-12 years	Results showed that dyads who received music therapy intervention significantly improved their nonverbal communication and mutual attunement. Parents who participated in music therapy also reported themselves to be significantly less stressed by the mood of their child and to have experienced improvements to their parent-child relationship. Both the treatment and control groups improved significantly in terms of emotional parental response. There were no significant differences between	4

								groups in terms of autonomy, parental competence and attachment.	
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9 Review of Evidence: Mental Health

The World Health Organisation (WHO) estimates that between 10-20% of children and adolescents suffer from some form of poor mental health and that half of all mental health illnesses begin by the age of 14 (WHO website, 2017). Despite the prevalence of mental health conditions among children there is an absence of robust statistical evidence available in this area¹⁵.

Qualitative studies have shown that music and art therapy is an effective intervention for children and young people with mental health issues. However, few relevant quantitative studies have been conducted and consequently there is a gap in existing evidence exploring the efficacy of music and art therapy in supporting children and adolescents with mental health issues. As Odell-Miller et al. (2006) conclude in their review of literature exploring art therapy among adults with mental health issues, 'there is a need for outcome-based research with a younger population' (p. 122) and this point is equally relevant to music therapy.

This search process identified seven articles that corresponded with the search terms and adhered to the inclusion criteria. These are discussed in the following three subsections:

- **Anxiety**
- **Grief and Bereavement**
- **Trauma**

9.1 Anxiety

Anxiety is one of the most common psychiatric conditions affecting adolescents (cited in Pine, Cohen & Gurley, 1998) and is strongly correlated with instances of depression (Brady & Kendall, 1992). Studies of anxiety are of clinical importance because as well as manifesting itself in a distinct set of disorders, anxiety exerts itself on other domains of functioning. Consequently, it has been argued that it should be addressed as a research priority (Kashani & Orvaschel, 1990).

Despite its importance as a research topic, only one article, exploring music therapy, could be identified that adhered to the inclusion criteria. This is perhaps surprising given that a review of creative therapies has shown music therapy to be particularly effective in decreasing anxiety with adults (Stuckey & Nobel, 2010). No studies could be identified that assessed the efficacy of art therapy with children or young people suffering from anxiety disorders.

¹⁵ Work has been undertaken with children suffering from psychosis and schizophrenia but as described in section 3.2, evidence relating to mental health disorders have been excluded from the remit of this review

9.1.1 The evidence from art therapy relating to anxiety

The search did not identify any statistical studies satisfying our criteria that explore the use of art therapy with children or young people suffering from anxiety.

9.1.2 The evidence from music therapy relating to anxiety

In their RCT, **Goldbeck and Ellerkamp (2012)** sought to assess the impact of combined music and CBT therapy as treatment for children suffering with anxiety. All 36 children within the sample had a primary diagnosis of an anxiety disorder and were randomly assigned to the experimental group or to the control group which offered treatment as usual (TAU) which represented a range of 'standard' treatment approaches. The experimental group offered a total of 15 sessions comprised of three individual music sessions, nine group music therapy sessions and three sessions of CBT-orientated sessions for parents. The control group was described by Goldbeck and Ellerkamp (2012) in fairly broad terms; 'it included various interventions provided by child psychiatrists, paediatricians, psychologists, child psychotherapists, social workers or child guidance clinics, such as brief behavioural interventions, psychodynamic psychotherapy or nonspecific group therapy' (p.403). All treatment offered in the control group was provided 'as available in naturalistic community settings' (p.403).

The primary outcome in Goldbeck and Ellerkamp's (2012) study was the presence of an anxiety disorder post-treatment and four months after the end of treatment as assessed by the KIDDIE-SADs measure¹⁶. Results indicated that combined music therapy and CBT treatment is a superior treatment for anxiety; the combined therapy showed a reduced anxiety rate of 67% in comparison to 33% within the control group. Moreover, their results indicated longevity of impact; the effects persisted four months post-treatment. However, no statistical difference between the control and experimental group were reported in self-reports or parental reports.

9.1.2.1. How robust is this evidence?

Goldbeck and Ellerkamp's study (2012) offers generally promising findings identifying a statistically significant reduction in symptoms associated with anxiety following combined music therapy and CBT treatment immediately after treatment and four months later.

However the study has a number of limitations. First of all, although the principal measure, the KIDDIE-SADs tool, showed divergence between the experimental and control group, self-reports and parental reported measures did not identify change between the two groups. Whilst this does not necessarily indicate fallibility of the

¹⁶ The K-SADS-PL is a semi-structured diagnostic interview designed to assess current and past episodes of psychopathology in children and adolescents according to DSM-III-R and DSM-IV criteria. It represents the German version of the Schedule for Affective Disorders and Schizophrenia for School age Children.

primary measure, it is interesting to note this difference and it raises questions about how 'improvement' is measured and categorised if it is not recognised by the participant and/or their parents.

Attention should also be paid to the lack of detail supplied by the authors about the nature of the control group. In this context 'treatment as usual' appears to encapsulate a plethora of treatment approaches, rather than a single, agreed treatment plan. Therefore direct comparisons between the outcome of the control and experimental group are somewhat problematic due to the heterogeneous nature of practice within the control group. To further complicate matters, patients assigned to the control group received a mean of four sessions of treatment whereas the experimental group offered 12 sessions in total (plus a further three sessions for parents). Put simply, those assigned to the experimental group had greater exposure to a supportive therapist.

Therefore whilst we can deduce that participants in the control group showed lower levels of anxiety post treatment, we cannot necessarily attribute this to the mode of treatment. Rather the positive effect could be assigned to treatment duration and the associated connotations of the development of the patient-therapist relationship over an extended period, as discussed in Section 5. Linked to this, by assessing the experimental treatment programme as a whole, no insight can be deduced about which elements of the programme had greatest impact and which sessions may be less important or even redundant. Crucially, as this is a combined intervention, it is impossible to discern from Goldbeck and Ellerkamp's study (2012) the impact of music therapy in isolation from CBT. A design that compared CBT in isolation with CBT combined with music therapy would be stronger.

Positively, the authors provided a detailed breakdown of the therapy delivered within the experimental group enabling future replication and future analysis of discrete modules.

9.1.2.2. What are the next steps to be pursued to strengthen the evidence base?

There is a clear need for additional work exploring the effects of music therapy with children and young people suffering from anxiety. It is commendable that Goldbeck and Ellerkamp (2012) consider longevity of impact, but their findings are limited to the effects of intervention four months post-treatment. It would be of interest to conduct more longitudinal studies over an extended period of time. Equally, in future studies it would be beneficial to assess the impact of music therapy as a discrete mode of treatment or as a supplement to other forms.

In summary, we are currently still unable to respond to the question 'what form of music therapy in which setting is most effective for what child to achieve what kind of outcome?' (Gold et al, 2004). Future work should seek to identify the most effective components of music therapy.

Table 5: Anxiety – Evidence

Theme	Study	Description of Therapy	Duration of Therapy	Objectives	Setting	Intervention Design	Sample	Results	SMS Rating
Anxiety	Goldbeck & Ellerkamp (2012)	<p>Music Therapy and Cognitive Behavioural Therapy</p> <p>Multimodal Music Therapy (MMT); a combination of music therapy and cognitive behavioural therapy</p> <p>Sessions included different forms of active music therapy such as free and structured improvised music play of the participants together with the music therapists, communicative / dialogue music playing or expression of emotions by the participants' improvised music</p> <p>Music therapy was combined with different cognitive-behavioural interventions such as psycho-education, social skills training, exposure to anxiety evoking stimuli and homework assignments</p>	<p>15 sessions of MMT</p> <p>3 x 1 hour sessions of individual music therapy</p> <p>9 x 90 minutes sessions of group music therapy)</p> <p>3 x sessions of CBT-orientated parent training</p>	<p>Pilot study to investigate the efficacy of MMT in comparison to treatment as usual,</p> <p>To investigate the persistence of treatment after the end of treatment</p>	Clinical, Germany	<p>Included therapist led and improvisational therapy</p> <p>Mix of group and individual therapy</p>	<p>N=36</p> <p>Children aged 8-12 years with a primary diagnosis of an anxiety disorder</p>	<p>MMT was superior compared to control group according to results after treatment. Reduction in anxiety was shown to have persisted until four month post-treatment</p> <p>No statistical difference between the control and experimental group were reported in self-reports or parental reports.</p>	3

9.2 Grief and Bereavement

Rosner, Kruse and Hagl (2007) describe an 'abundance' of literature on how creative therapies can be used to help bereaved children and adolescents but comment on the 'lack of empirical support for most of the suggested interventions' (p.99).

With respect to music therapy, Hilliard (2001) comments, 'much of the research is descriptive and qualitative and few quantitative articles are available in the field of children in bereavement' (p.293). Much of smaller scale quantitative studies and descriptive case studies has been compiled by Katrina McFerran. Findings from these qualitative studies have suggested that music therapy is 'valued' as a treatment for bereaved children 'because of the opportunities for both expression and connection that are made through musical participation' (McFerran, 2011 p.19). Three quantitative studies, both investigating the impact of music therapy, were however identified in our search.

No statistical evidence was identified exploring the impact of art therapy on young, bereaved populations. Qualitative work is available that suggests art therapy can be extremely effective in aiding bereaved children (Davis, 1989) and 'art therapy is emerging as a viable new intervention for working with bereaved children' (Zamelli, Johns Clark & Heegaard, 1989, p.60). Currently however, evidence appears to be notably lagging behind practice.

9.2.1 The evidence from art therapy relating to grief and bereavement

The search did not identify any statistical studies satisfying our criteria that explore the use of art therapy with bereaved children and young people.

9.2.2 The evidence from music therapy relating to grief and bereavement

Our search process identified **Hilliard's small-scale study (2001)** as one example of a quantitative investigation which sought to demonstrate music therapy as an effective intervention to assist grieving children. His work sought to examine if there was a significant difference in grief symptoms amongst those children who were part of a cognitive-behavioural music therapy programme offered by The Caring Tree, a child and adolescent bereavement programme run in the US and those who received no support. Three schools were involved in the study; two represented the experimental group (n=9) and one as the control group (n=9). Those assigned to the experimental group received eight sessions of group music therapy whereas those allocated to the control group received no intervention during the experimental period. Pre and post-treatment four standardised psychometric tests were utilised to measure effect; the Behaviour Rating Index for Children (BRIC) was used by teachers to assess behaviour in the classroom as well as used by parents at home. Additionally, the Depression Self-Rating Scale (DSRS) and the Bereavement Group Questionnaire (BP) for parents and guardians were issued.

The two measures completed by parents or guardians showed positive results. Children in the experimental group showed significant reductions in grief symptoms (as captured by the BP). These results are of particular interest because they indicate a 40% reduction in post-test grief scores. Results also indicated a reduction in behavioural problems in the home environment (as captured by BRIC), although less markedly so. However, no significant differences were identified for self-rated depression (DSRS) or school behaviour (BRIC).

A study by **Dalton and Krout (2006)** involved young people aged 12-18 years and the purpose of their investigation was two-fold. First, they wished to develop and pilot a grief processing assessment instrument ('The Grief Process Scale') that had been informed through descriptive analysis of 123 songs previously written by bereaved adolescents. Secondly and more pertinently, they hoped that a seven-week song-writing group would be shown to be an effective intervention to help grieving adolescents, as measured by their new measurement tool.

Fourteen participants in four different treatment groups were in schools and a bereavement centre. Six participants served as a waiting-list control group. Therapy focused on five process areas of understanding, feeling, remembering, integrating and growing with introductory and final sessions reserved for introduction and closure. The Grief Process scale was designed to capture scores against each of these five process areas. The final session took place at a special place chosen by participants and focused on celebrating the lives of their loved ones. Music therapy focused on song-writing, with participants given a theme or topic to work from each week.

Results from Dalton & Krout's study (2006) showed a marked decrease in symptoms in all five domains as measured by their own Grief Process Scale. The average decrease across the four treatment groups was 25 in comparison with an increase in two points as shown by the control group. The Grief Process scale identified the greatest change in scores with respect to 'feeling'; a decrease of 27 points pre and post intervention.

The results from these two studies are encouraging although The Grief Process Scale had not been previously tested for validity or reliability. A meta-analysis conducted by Rosner et al. (2007) sought to explore the efficacy of a broad range of interventions for bereaved children and adolescents. Their work evaluated a wide scope of treatment types including play therapy, counselling, support groups and CBT. Of all the statistically robust interventions analysed within the study, they identified that the most successful were the two music therapy interventions undertaken by Hillard (2001) and Dalton & Krout (2006). The calculations from the meta-analysis showed a 'significant difference between music therapy interventions with $g = 1.36$ versus $g = 0.27$ for other interventions¹⁷ where 0.8 represents a large effect.

¹⁷ Hedge's g (a variation of Cohen's d that corrects for biases due to small sample sizes (Hedges & Olin, 1985) was used in Rosner's analysis as a means of assessing effect size.

Several years later **Hilliard (2007)** conducted a later study which was not included within Rosner et al's meta-analysis (2007) though it also identified positive findings. This third study sought to explore the effects of Orff-based music therapy in comparison to social work¹⁸ and a waiting list control group (which involved no intervention).

Orff-based music therapy parallels the techniques used in language learning by beginning with hearing and imitating, followed by making and improving music and eventually, reading and writing music. The emphasis of the Orff-based approach is very much children-centred and creative, allowing children to express themselves (cited in Register & Hilliard, 2008). Each music therapy session utilised Orff-based improvisation to enable children to freely express themselves.

Twenty-six children (aged 5-11) from three difference schools were randomly allocated to one of the three groups; the music therapy and social work interventions lasted eight weeks respectively. As with his earlier study, Hilliard deployed a pre and post-intervention design utilising the BRIC measure alongside the Bereavement Group Questionnaire for Parents / Guardians (BP) to measure the type and severity of children's' symptoms. Both the music therapy and social work interventions were delivered during the school day, with pupils excused from lessons for an hour. Though clearly the mode of treatment differed, both the experimental groups utilised a similar grief curriculum which had been devised by Hilliard in his original study (2001).

The results showed that participants in both the social work and music therapy group significantly improved in their behaviours (as per BRIC). Indeed, results indicated that participants did not benefit from one treatment over another (music therapy or social work). However, only those in receipt of music therapy experienced a significant reduction in their grief symptoms (as shown on BP). Meanwhile, participants in the control group exhibited no significant improvements in either respect¹⁹. These findings corroborate the earlier work conducted by Hilliard (2001) which showed that there was a significant reduction in behavioural problems among grieving children following music therapy as well as its efficacy in reducing grief symptoms.

9.2.2.1 How robust is this evidence?

The results from these three studies are promising and indicate that structured group music therapy is effective for young people who have recently lost a loved one. Although Hilliard (2001) did not identify any impact on depression or school behaviour, the experimental showed marked improvement in grief symptoms and

¹⁸ The interventions utilised in the social work-based grief sessions included a variety of techniques including play therapy, use of sand trays, counselling, discussion, drama and various art-based interventions (drawing, painting, sculpting etc.) In this group, no music (in any form) was utilised.

¹⁹ It was identified at pre-test stage that there was a significant difference on BP scores between the control group and experimental groups. However, once linear regression was applied to adjust for pre-test differences, the results held true.

some signs of improvement in behaviour at home. Importantly, these findings are corroborated by his later study in 2007. Hilliard highlights that the sizeable change captured by the Bereavement Group Questionnaire in 2001 is particularly compelling because the BP is the 'only test to measure grief comprehensively' (p. 302) by assessing children in four key areas (emotions, thoughts, physical complaints and behaviour). However, some caution should be exercised in interpreting these results which were based on limited sample sizes in both research studies. Moreover in 2007, he did not utilise any self-completion measures and data was only captured from parent / guardian viewpoints.

It is of interest however that the self-rated DSRS measure completed by the children in Hilliard's earlier study (2001) did not show significant change which might have influenced the selection of measures used in his later 2007 study. In his 2001 study, four of the nine subjects within the experimental group were not considered depressed according to data captured at pre-test stage and were therefore excluded from the study leading Hilliard to somewhat inconclusively remark that 'the experimental groups may not have focused enough on the elevation of mood, or depression may not have been a prevailing sign of grief for the children in this study' (p.302). Similarly, BRIC did not reveal any improvements of behaviours in the classroom but the pre-test measure also seems to indicate that behaviour was 'not a significant problem in the classroom' (p.303).

Additionally, both of Hilliard's study (2001, 2007) did not capture any outcome measures reported by professionals. Independent assessors, blind to the treatment intervention could have contributed their input to support information gathered via self-reports (in 2001) and teacher (2001) and parental (2001, 2007) reports. For practical reasons, namely that the sessions took place at the school children attended, allocation was not randomised in either study. Therefore there are limits to the extent to which the results can be generalised although they serve as a promising platform for further work.

Similarly, Dalton & Krout's research (2006) utilised small sample sizes and also lacked randomization. Additionally, with respect to Dalton & Krout's work (2006), consideration should be given to the impact of the 'special location' setting of the final group. It is likely that the process of collectively selecting and visiting the site will have had positive impact, independent of outcomes directly related to the music therapy intervention.

9.2.2.2 What are the next steps to be pursued to strengthen the evidence base?

Clearly there is a need for statistically robust studies to be undertaken to explore the efficacy of art therapy in support bereaved children and adolescents. Beneficially, the interventions used in each study were described in detail and this will assist any future attempts at replication or expansion of the original studies. Future research should seek to ascertain the long-term impact of intervention but studies should also

consider the inclusion of random assignment to a control group. Building on the findings of Rosner et al.'s (2007) meta-analysis, this would enable a comparative assessment of music therapy against other forms of intervention for bereaved children and young people.

Crucially of course, the results from Hilliard's study (2001) are unable to inform us of the impact of music therapy in isolation; only that a multi-modal form of therapy incorporating elements of music therapy appears to have some success in the treatment of bereaved children. It is not possible to deduce from the study which of the eight component sessions has greatest (and least impact). His later work (2007) serves as a positive step in understanding this but further work needs to be undertaken in order to be able to determine the most efficacious elements of music therapy programmes. Of course, Dalton & Krout's (2006) work is also limited in that it can only provide insight into the specific area of song-writing.

Future research should therefore seek to address which *types* of music therapy work most effectively with which groups of children. Hilliard's 2007 study shows that Orff-based music therapy can be effective but other forms of music therapy could also be studied in this context. Ideally, discrete forms of music therapy could be compared and contrasted against each other in a controlled manner.

Finally, as Rosner et al. (2007) write, numerous authors have commented on the way that bereavement can impact boys and girls differently. However, results are fairly inconclusive at this stage and there is a scarcity of evidence available. Future research could look to explore the issue of gender alongside other subgroup differences.

Table 6: Grief and Bereavement – Evidence

Theme	Study	Description of Therapy	Duration of Therapy	Objectives	Setting	Intervention Design	Sample	Results	SMS Rating
Grief and Bereavement	Hilliard (2001)	<p>Music Therapy</p> <p>The music therapy group sessions were designed to assist children work through their grief in a nurturing environment and learn health means of coping with their losses</p> <p>The author devised a music therapy group manual which included session themes and comprehensive session plans. The theoretical approach was cognitive-behavioural music therapy.</p> <p>Song writing was used as one of the techniques within an overall cognitive-behavioural treatment approach</p>	8 weeks = 1 hour sessions	To ascertain if there was a significant difference in grief symptoms among the subjects receiving music therapy as reported on the psychometric tests	Non Clinical, US	Group, Therapist Led	<p>N=18</p> <p>Grieving children aged 6-111 who had experienced the death of a loved one within the past 2 years</p> <p>The socioeconomic range of the subjects was from upper-lower class to middle class</p>	<p>Statistical analysis indicated a significant difference among subjects in the experimental group for the Behaviour Rating Index for children in the home environment and the Bereavement Questionnaire for Parents/Guardians.</p> <p>No statistically significant differences were found in means scores on the Depression Self-Rating Index and the Behaviour Rating Index for children in the school environment.</p> <p>Teacher and self-evaluations were inconclusive</p>	3
Grief and Bereavement	Dalton & Krout (2006)	<p>Music Therapy</p> <p>The process of song-writing in each of the sessions involved providing structure of a chorus lyric from 5 therapists' pre-composed songs. The songs were titled:</p> <p>'This is what happened', 'So</p>	Seven weeks x 60-90 sessions	To design and pilot a music therapy-driven grief processing assessment instrument with bereaved adolescents receiving group song writing	Clinical, US	Group, Therapist Led	<p>N=20</p> <p>Adolescents ranged from 12-18 years and all had experienced the death of a loved one within the past three years prior to the beginning of the study</p>	<p>Results showed a marked decrease in symptoms in all five domains as measured by the Grief Process Scale. Participants in the control group exhibited no improvements</p>	2

		many feelings', 'I remember', 'Slowly moving away' and 'My life is changing'.		interventions To understand if a 7 week song writing group treatment would assist the grieving process as measured by the newly developed Grief Process Scale.					
Grief and Bereavement	Hilliard (2007)	Music Therapy Orff-Based Music Therapy Group intervention and other instrumental play methods	1 hour sessions x 8 weeks	To compare the effects of Orff-based music therapy, social work and wait-list control groups on behavioural problems and grief symptoms of bereaved school children	Non Clinical, US	Group, Therapist Led	N = 26 Bereaved school children aged 5-11 (mean age = 8). 14 males and 12 females 46% had experienced the death of a grandparent, 38% the death of a parent and 16% another family member	Statistical analyses indicated that participants in the music therapy group significantly improved in the behaviours and grief symptoms, and those in the social work group experienced a significant reduction in their behavioural problems but not their grief symptoms	2

9.3 Trauma

Having discussed mental health issues with respect to anxiety and grief, this section focuses on trauma. It is important that trauma be treated given that it 'does not ordinarily get better by itself. It burrows down further and further under the child's defences and coping strategies' (cited Malchiodi, 2008, p.3). According to the International Society for Traumatic Stress Studies, music and art therapy are 'accepted ways to access non-verbal material and are suited to work with children who have experienced trauma' (cited in Steele & Malchiodi, 2012, p.13).

Trauma can stem from a wide variety of experiences including witnessing or being subject to physical or sexual abuse. It can manifest itself in numerous ways, and it is recognised that children exposed to trauma are often diagnosed with PTSD (Foa, Johnson, Feeny & Treadwell, 2010), a presenting diagnosis in three of the four studies discussed below.

A total of five studies satisfying our search criteria were identified and they all related to art therapy. Two of the four studies (Pretorius & Pfeifer, 2010 and Pifalo, 2006) explore the efficacy of art therapy in treating sexual trauma. It should of course be noted that that children and young people who have been sexually abused often suffer from trauma alongside a range of other diagnoses including anxiety, guilt, depression and low self-esteem (cited in Pretorius & Pfeifer, 2010). Within Pretorius and Pfeifer's study (2010), depression, anxiety and low self-esteem are therefore discussed alongside sexual trauma.

No studies could be identified that explored the impact of music therapy with young trauma victims. Roberts (2003) has written of the positive impact music therapy can have with children who have experienced sexual abuse but her work is illustrated by case material of individual music therapy with a single child. There is also quantitative evidence exploring the impact of music therapy with adults but conclusions drawn from these studies are of limited applicability to younger populations. Research shows that children and adolescents respond very differently to trauma-inducing stressors than adults (Lyshak-Stelzer, Singer, St John, & Chemtob, 2011). Additionally, much of the available evidence relates to the experiences of warfare, outside the scope of this review.

It is unclear why there is more statistical evidence relating to use the art therapy although it could be due to its long history as a treatment for young people suffering from trauma. For over 30 years, art therapists have observed art therapy as a useful means of assessment and treatment of traumatic disorders in young people (cited in Lyshak-Stelzer et al., 2011).

9.3.1 The evidence from art therapy relating to trauma

Most recently **Lyshak-Stelzer et al. (2011)** conducted a RCT with 78 young people to assess the efficacy of art therapy in reducing chronic Post Traumatic Stress Disorder (PTSD) at two inpatient youth psychiatric facilities in New York. The type of traumatic event was wide-ranging and included death or serious injury of a loved one (72% of participants), witnessing physical abuse (62%) and experiencing sexual abuse (46%) amongst other events. As an inpatient population this appears to be a particularly complex group.

Two treatment conditions were compared: the delivery of the standard arts and crafts making activity which formed the control group and a trauma-focused expressive art therapy. Like the control group, art therapy was delivered weekly in small groups of two-five participants and was therapist-led. The young people were randomised to either group and assessed pre and post treatment over the 16 week experimental period. A manual gave direction for the trauma-specific art activities (directives). Although the order of directives was not fixed, each directive was issued to each small group across the 16 sessions. By the end of the programme all participants completed at least 13 collages or drawings to express a narrative of his or her 'life story' and following each session the young people were encouraged to share and discuss their art with their peers.

Though there was a significant effect of treatment over time for both groups, importantly the study found that in comparison to the control group, those in receipt of art therapy showed statistically significant improvements between their pre and post treatment PTSD Index Score. The study also sought to measure the impact of therapy on behaviours which was based on a count of incident reports, seclusion incidents, use of restraints and 'as needed' medication orders typically used in crisis management. This did not show any significant differences between the control and experimental group. However, in the treatment group the number of behavioural problems was less across all types of counted incidents and the number of seclusions recorded showed a trend toward significance.

In contrast to the varied experiences of participants in Lyshak-Stelzer's research (2007), **Pifalo (2006)** explored the impact of art therapy on PTSD with specific focus on victims of sexual abuse. Significantly, Pifalo's work (2006) also differed in that it sought to assess the efficacy of art therapy, not in isolation, but in combination with Cognitive Behaviour Therapy (CBT). It was hypothesised that both forms of therapy offer unique properties that would be particularly effective when offered as a combined treatment. CBT 'offers clear-cut goals for trauma-focused therapy' whereas 'art therapy "cuts to the chase"...because art therapy does not rely strictly on a verbal mode of communication' (p.181).

Participants in Pifalo's study (2006) met weekly for eight weeks at an urban multidisciplinary child advocacy centre that provided forensic assessment and

treatment to child victims of sexual abuse. Using the Trauma Symptom Checklist for Children (TSCC) as an evaluative measure, pre and post-treatment scores were taken with a sample of 41 young people aged 8-16years. Pifalo (2006) identified a statistically significant reduction in symptomology scores on nine of the ten clinical subscales represented on the TSCC²⁰. Of all the subscales, the intervention effect was particularly marked in relation to post-traumatic stress, dissociation-overt and sexual concerns with the most pronounced difference recorded in relation to post-traumatic stress. Importantly, these areas were specifically targeted for treatment outcomes.

Similar to Pifalo (2006), **Pretorius and Pfeifer's (2010)** art therapy group intervention was targeted to girls aged eight to eleven years who had experienced sexual abuse. The intervention, based on Braver and Braver's (1988) Solomon-four group design, sought to reduce depression, anxiety, sexual trauma and low self-esteem. The girls, all residing in separate children's home in South Africa were brought together in a single children's home for the purposes of participation in the study. The art therapy intervention was a structured group programme 'based on existential-humanistic, Gestalt, client-centred and abuse-focused principles' (p. 63) with one therapist conducting the treatment programme. Pretorius and Pfeifer (2010) also used TSCC as the outcome measure to assess depression, anxiety and sexual trauma levels, along with Koppitz's (1968) Human Figure Drawing (HFD) measure which was used to assess self-esteem levels and 'as an additional measure of depression, anxiety and sexual trauma (p. 65).'

Pretorius and Pfeifer (2010) found that participants who had participated in the programme experienced a statistically significant improvement in depression, anxiety and sexual trauma levels as measured by the TSCC following treatment. In contrast, the corresponding control group experienced no significant change apart from an increase in mean depression scores. However some caution should be exercised in interpreting these results; the authors found that between the control and intervention groups there were statistically significant differences in participants' pre-test anxiety, depression levels. This led them to apply another layer of statistical analysis to enable them to calculate the comparative difference in scores. The results of the TSCC suggested that 'following the intervention, the experimental groups demonstrated improvement in depression, anxiety and sexual trauma as compared to the control groups' (p. 70). Interestingly, the results showed that the intervention was less successful at improving participants' low self-esteem. Yet, whilst the TSCC indicated a significant reduction of symptoms of sexual trauma compared with the control group, the HFD did not indicate any sexual trauma symptoms among either of the groups in the study. The authors hypothesised that the HFD is perhaps not as sensitive as the TSCC in measuring symptoms associated with sexual trauma.

²⁰ The nine TSCC subscales where a statistically significant subscale was identified is as follows: Anxiety, Depression, Anger, Post-Traumatic Stress, Dissociation Overt, Sexual Concerns, Sexual Pre-Occupation and Sexual Distress).

In contrast, results from another identified RCT failed to indicate the efficacy of art therapy as a treatment for trauma in children and young people. **Chapman, Morabito, Ladakakos, Schreier, and Knudson (2001)** published early, but detailed, findings of an ongoing study exploring the impact of single session of art therapy on children diagnosed with trauma. The study sought to investigate the efficacy of a specific mode of art therapy, the Chapman Art Therapy Treatment Intervention (CATTI) on children aged 7-17 years who had been admitted to a trauma centre for mild-moderate physical injuries.

This therapist-led, one-to-one intervention aimed to facilitate the sequential recollection and comprehension of the traumatic event through drawing and verbal narrative. Existing inpatient services were supplemented with this single session of art therapy, delivered at the child's bedside, lasting no longer than one hour. Chapman et al. (2001) report that the sessions used 'minimal art media'; although it is not stated explicitly within their publication what the session entailed.

The control group did not receive any further treatment beyond medical attention provided by the centre as standard. Post-discharge, children were assessed after one week, one month and six months to measure reduction in PTSD symptoms as measured by the Children's Post Traumatic Stress Disorder Index (PTSD-I). Results indicated no significant difference in the reduction of symptoms between the experimental and control group.

Chapman et al. (2001) however reported some evidence that the group that received an art therapy session showed a reduction in avoidance symptoms; that is, avoidance of thoughts and feelings about the event measured through a range of means such as gaze aversion, withdrawal, dissociative episodes and apathy toward primary caregivers. The authors suggest that this may indicate that CATTI could have enabled children to discuss and process their traumatic experiences more effectively than through standard treatment. Yet, this seems to be a large claim to make about a single session of intervention and the advantages over 'treatment as usual' remain, at best, inconclusive.

Several years later (**Schreier, Ladakakos, Morabito, Chapman & Knudson, 2005**) published the final results of the longitudinal study. Their findings confirmed the results of the earlier work; that the art therapy intervention showed no sustained effects on the reduction of PTSD symptoms.

9.3.1.1 How robust is this evidence?

All five studies from art therapy offer some insight and collectively their findings offer a relatively promising picture with the most positive results shown in Lyshak-Stelzer et al.'s (2007) and Pifalo's (2006) studies. Lyshak-Stelzer et al.'s (2007) found art therapy to have had a positive impact upon a wide sample of children suffering from trauma and through the narrower lens of Pifalo's study (2006), art therapy was shown to greatly assist children who had faced sexual abuse. Pifalo's (2006) findings were

largely supported by Pretorius and Pfeifer's work (2010) which also investigated the impact of art therapy on victims of sexual abuse. Meanwhile however, Chapman et al. (2001) were unable to identify any significant reduction in the presence of PTSD symptoms following the single one hour intervention session.

By their use of RCTs, Lyshak-Stelzer's (2007) and Chapman et al.'s (2001) studies represent robust methodological approach to assessing the impact of art therapy. However, Lyshak-Stelzer (2007) went one stage further using assessors blind to the group allocation to record outcomes. Pifalo's (2006) and Pretorius and Pfeifer's (2010) studies utilised a validated pre and post outcomes measure, with both studies' sample size large enough to produce statistically significant results. However, the number of participants in Pretorius and Pfeifer's (2010) study (25) was notably smaller than Pifalo's (41), which 'limits the application of the [intervention] design' (p. 65).

Pifalo's (2006) work arguably represents the least robust methodological approach. The absence of a control group entails that the results from his study should not be generalised. Moreover, the authors fail to provide detail about how the combined art therapy and CBT package were delivered or what the treatment model looked like. This not only limits the replicability of his study with a larger sample size but also hinders analysis to discern the most effective modes of delivering art therapy. It is of course also impossible to draw conclusions about art therapy in isolation, only the combined delivery of CBT and art therapy. This represents is a fundamental limitation; it is impossible to discern anything about the added value of art therapy without accompanying data about the impact of CBT delivered as an independent treatment for trauma on a similar population.

Whilst Pretorius and Pfeifer's (2010) study included a control, the pre-test scores showed a difference in the composition of the intervention and control group. This calls into question the generalisability and reliability of the results. Most importantly, the Solomon-four group design on which the art therapy intervention is based requires participants to be randomly assigned to groups and this is violated in Pretorius and Pfeifer's (2010) study. It is unclear to what extent this threatens the validity of the study, but it requires serious consideration and decreases the confidence with which the results of the study can be attributed to the treatment.

Crucially, each of these four studies differs in nature and approach. Chapman et al. (2001) and Pifalo (2006) focused on discrete and specific types of participants who have experienced trauma and been diagnosed with PTSD; Pretorius and Pfeifer (2010) focused on participants with the same traumatic event (sexual abuse) though it was not specified whether any participants then received a formal diagnosis of PTSD. Lyshak-Stelzer et al.'s RCT (2007) aimed to draw broader conclusions about participants' wide range of trauma inducing experiences. Not only are the respective sample groups not comparable but the intervention tested in each study varies from a single hour meeting to a 16 session programme. Critically of course, whilst Lyshak-

Stelzer et al. (2007), Pifalo (2006) and Pretorius and Pfeifer (2010) report positive findings about the impact of art therapy, whereas Chapman et al. (2001) did not.

9.3.1.2 What are the next steps to be pursued to strengthen the evidence base?

Whilst the studies represent important preliminary steps to understanding the impact of art therapy for particular groups of young trauma sufferers, single studies are not sufficient to determine the efficacy of art therapy as a treatment for young people with trauma in relation to PTSD and sexual abuse.

There is a clear need for further quantitative research to be conducted to understand the impact of art therapy. It is currently still unclear for instance, which types of children benefit most from art therapy and which are the most effective modes of delivery.

Furthermore, consideration should be given to research setting. Future studies should ideally be undertaken in a domestic setting; three of the identified studies were conducted in the US and Pretorius and Pfeifer's (2010) study was conducted in South Africa. The three US studies were all conducted in inpatient settings with only Pretorius at Pfeifer's study (2010) representing work in an outpatient setting.

It could be assumed from the disappointing results of Chapman et al.'s study (2001) that duration of intervention is likely to be correlated with impact yet further work needs to be undertaken to understand how programme length influences efficacy. It would be particularly beneficial for longitudinal studies to be undertaken. As Smyth and Nobel (2010) acknowledge, individuals that have experienced a traumatic event may re-experience the traumatic event years and potentially even decades later. This presents various challenges from a methodological perspective²¹ but this should not deter researchers and practitioners from designing studies to aid understanding of the long-term effects of music and art therapy.

Thought should also be given to evaluation measures. Chapman et al. (2001) also retrospectively acknowledged the potential limitation of their assessment tool, the Children's Post Traumatic Stress Disorder Index (PTSD-I). They report that the PTSD-I may not have been sensitive enough to identify more subtle changes, particularly with acutely injured children where PTSD symptoms are 'often idiosyncratic and manifested in conjunction with physical injuries, painful medical procedures and hospitalisation' (p.104). With hindsight, Pretorius and Pfeifer (2010) also questioned the effectiveness of the HFD in tapping into changes in self-esteem symptoms and sexual trauma symptoms. In addition, Chapman et al. (2001), Pifalo (2006) and Pretorius and Pfeifer (201) used self-reporting outcomes measures to evaluate the efficacy of the treatment. To mitigate some of the challenges associated

²¹ Challenges include retaining sample, budgetary issues and difficulties identifying whether PTSD symptoms measured in the follow-up data are independent of other traumatic events that may have occurred in the child's life since the intervention

with self-reporting (for instance, comprehension and response bias), future research should combine self-reporting with observational data.

9.3.2 The evidence from music therapy relating to trauma

The search did not identify any statistical studies satisfying our criteria that explore the use of music therapy with children and young people suffering from trauma.

Table 7: Trauma – Evidence

Theme	Study	Description of Therapy	Duration of Therapy	Objectives	Setting	Intervention Design	Sample	Results	SMS Rating
Trauma	Lyshak-Stelzer et al. (2011)	<p>Art Therapy</p> <p>Participants were directed to complete at least 13 collages or drawings over the course of the programme to express a narrative of his or her 'life story'.</p> <p>The organizing rationale focused on enhancing the adolescent's capacity to monitor and regulate feelings of safety and danger.</p> <p>Before each session, 20 minute discussions focused on topic of the day. After the art making period, youths were encouraged to display their artwork to peers.</p>	16 weeks	To examine the efficacy of an adjunctive trauma focused art therapy intervention in reducing chronic child posttraumatic stress disorder (PTSD) symptoms in an inpatient psychiatric facility for youth	Clinical, US	Treatment in groups of 2 to 5 participants Therapist led	<p>N=78</p> <p>Young adults aged 13-17 receiving treatment at two inpatient youth psychiatric facilities in New York.</p> <p>The type of traumatic event was wide-ranging and included death or serious injury of a loved one (72% of participants), witnessing physical abuse (62%) and sexual abuse (46%) amongst other experiences.</p> <p>The treated sample was 55.2% male.</p> <p>Patient ethnicity was diverse: (40.1% African-American, 35.2% Latino/a, 18.3% White, 0.7% Caribbean American)</p>	<p>The study found that in comparison to the control group, those in receipt of art therapy showed statistically significant improvements between their pre and post treatment PTSD Index Score.</p> <p>There were no significant differences in terms of recording of behavioural problems but incidents decreased across all indicators.</p>	5
Trauma	Pifalo (2006)	<p>Art Therapy</p> <p>A combination of art therapy, cognitive behavioural therapy, and group process</p>	Participants met 1 x hour weekly for 8 weeks	Building on the result of an initial pilot, the extended study aimed to gather empirical evidence to demonstrate	Clinical, US	Unknown	<p>N=41</p> <p>Children and young people aged 8-16 with histories of sexual abuse</p>	Participants manifested a significant reduction in abuse related symptoms (anxiety, depression, anger, PTSD, Dissociation, Dissociation-	2

		Groups were structured to meet the developmental needs for children 8-10, 11-13 and 14-16.		that the combined use of art therapy and CBT resulted in a reduction of symptoms associated with PTSD.				Overt, Sexual Concerns and Sexual Pre-Occupation) when compared with the levels exhibited at entry The largest reduction in symptoms was found on the scales of PTSD, Dissociation-Overt, and Sexual Concerns.	
Trauma	Pretorius and Pfeifer (2010)	Art Therapy The art therapy intervention was a structured group programme 'based on existential-humanistic, Gestalt, client-centred and abuse-focused principles' (p. 63). The themes of the programme included: i) establishing group cohesion and fostering trust; ii) exploration of feelings associated with the abuse; iii) sexual behaviour and prevention of victimisation and iv) group separation.	Eight sessions – no further information provided	To investigate the impact of art therapy on anxiety, depression and self-esteem of children with experience of sexual abuse	Non-clinical, South Africa	Group intervention Therapist led	N=25 Girls aged 8 to 11 years, of varied ethnic background, from four children's homes in the Gauteng area. All participants had a history of sexual abuse, spoke predominantly English and lived with a non-offending caretaker	Results indicated that the intervention led to an improvement in participants' depression, anxiety and sexual trauma. The results did not indicate that the intervention targeted low self-esteem as successfully as depression and anxiety.	3
Trauma	Chapman et al. (2001)	Art Therapy Specifically, the Chapman Art Therapy Treatment Intervention Therapy aimed to facilitate the sequential recollection and comprehension of the traumatic event through drawing and verbal narrative. It was delivered at the child's bedside and lasted no longer	Single one hour session	To test the impact of an outcome based art therapy (Chapman Art Therapy Treatment Intervention) in paediatric trauma patients suffering from mild-moderate physical injuries.	Clinical, US	One to one intervention Therapist led	N=85 Children aged 7-17 years who were admitted to a trauma centre for mild-moderate physical injuries Average age was 10 years and average stay in hospital was 4.4 days. Good mix of ethnic representation. 70% of trauma victims were male (consistent with trauma statistics)	Results indicated no significant difference in the reduction of symptoms between the experimental and control group. Chapman et al. however reported some evidence that the group receiving art therapy showed a reduction in avoidance symptoms.	4

		than one hour.							
Trauma	Schreier et al. (2005) [re-examination of 2001 study]	Art Therapy The Chapman Art Therapy Treatment Intervention	Single one hour session	As a secondary objective to the main aim of their study, the authors aimed to establish whether a single session of art therapy would reduce PTSD symptoms	Clinical, US	One to one intervention Therapist led	N=83	Results indicated no significant difference in the reduction of symptoms between the experimental and control group.	4

10 Review of Evidence: Behavioural and Social Interaction Difficulties

This section discusses the evidence base for the use of creative therapies with children struggling with behavioural or social interaction issues. Undoubtedly, there is crossover with the following section in this review which evaluates studies exploring the use of creative therapies for children with Special Educational Needs (SEN). Certain conditions (e.g. Attention Deficit Hyperactivity Disorder) can incite both learning and behavioural challenges. It has also been noted that aggression is often prevalent amongst children with learning disabilities (cited in Hashemian & Jarahi, 2014). Therefore attention has been paid to the principal outcome measures in each of the studies to inform our categorisation (i.e. whether the measure falls predominantly within the arena of learning or behavioural difficulties). Learnings from these two sections are likely to be mutually beneficial to each other.

Collectively, 15 studies were identified which explore the use of art therapy (5) and music therapy (10) with children and young people with behavioural and social interaction problems. In terms of the volume of studies, this category of vulnerability represents the largest evidence base of the ten areas of interest. An overview of the findings are presented in Table 8.

10.1 The evidence from art therapy relating to behavioural and social interaction difficulties

Historically reviews of art therapy, such as those conducted by Burleigh and Beutler (1996) and Reynolds et al. (2000), have struggled to identify robust evidence supporting the use of art therapy as a means of improving behaviour problems in children and adolescents (cited in Slayton et al., 2010). Positively however, studies have since been published and this review was able to identify five quantitative studies exploring the efficacy of art therapy with young people with behavioural issues.

Interestingly, four of the five studies identified were conducted in Iran. More so, a further four Iranian studies exploring behavioural issues were identified but were not included because translated versions of the articles could not be sourced. It is unclear why there is such abundance of Iranian literature exploring art therapy as a means of reducing disruptive behaviour but there is evidently notable interest in this area.

The earliest article identified was a quasi-experimental study published by **Saunders and Saunders in 2000**. The research involved collaboration between art therapists, social scientists and evaluators in research that stretched over a three year period between 1994 and 1996. The study analysed pre and post data collated from 94 children and adolescents (aged 2-16 years). All young people exhibited some form of behavioural issue and at initial interview staff asked participants and / or their carer to indicate the frequency and severity of their behaviour against a list of 24 common problems. The authors established two key objectives of the study; first to measure

change in frequency and prevalence of participants presenting behavioural problems and secondly to capture the proportions of participants that managed to achieve a bespoke set of goals established for them at the start of therapy^{22 23}. Unfortunately the authors provide no detail about the mode of art therapy or how it was delivered; only that it was tailored to each individual. The number of sessions administered to each participant varied considerably ranging from two and 96 sessions per individual.

The results of Saunders and Saunders' (2000) study were positive. The study identified a statistically significant reduction in frequency and severity of problem behaviours by the point of exit from treatment. Interestingly however, in comparison to treatment entry, no statistically significant links were found between the number of sessions and the frequency and severity of their symptoms at the close of the intervention. This potentially suggests that the therapist was able to accurately tailor the number of sessions required by each participant. In addition, results showed that the majority of participants (62%) had 'completely met' their principal goal at the end of the programme and a third (31%) were reported as partially meeting it. The study found no notable subgroup differences; gender and age did not yield any significant differences in outcomes.

More recently, in Iran, **Khadar, Babapour and Sabourimoghaddam's (2013)** study focused on the impact of art therapy on children with oppositional defiant disorder (ODD), which is described by the DSM V (the Diagnostic and Statistical Manual of Mental Disorders), as a persistent pattern of hostile and disobedient behaviour towards authority figures for at least six months. The study followed fifteen Iranian boys aged between seven to twelve years old with symptoms of ODD as they completed a programme of twelve weekly painting therapy sessions. Khadar et al. (2013) utilised an experimental and control group design method although no detail it provided about how children were assigned to each group. A standardised measure (The Child Symptom Inventory-4) was used to capture change. The results highlighted that the children undergoing painting therapy experienced a significant decrease in ODD symptoms whilst the control group showed no significant difference.

Hashemian and Jarahi (2014) published the results of an RCT in Iran a year after Khadar et al. published their findings. Like Khadar et al. (2013), the authors also sought to explore the efficacy of painting therapy, this time in reducing aggression among a population of 20 boys and girls, aged eight-fifteen years, with learning difficulties. Participants were randomly selected from primary schools in Bojnord City of Iran and were matched for age and educational level in intervention and control

²² Examples of these goals include: "Express feeling of loss of dad and feeling abandoned," "Attain appropriate behaviour with increased coping skills and anger management," and "Deal with sexual abuse issues, including knowing steps for protection." A maximum of three goals were recorded for each child and they were prioritised as to their importance.

²³ The authors also set a third objective; to explore the development of the client-therapist relationship over the course of treatment. They hypothesised that clients will move from positions of defensiveness to positions of openness in their relationship with the therapist. This section however focuses on behavioural outcomes and is not discussed here.

groups. All had an IQ of 50-70. In contrast to other studies, the delivery of the intervention was intense; children allocated to the experimental group attended twelve painting therapy sessions twice a week for two months which each session lasting 75 minutes. Those in the control group continued in routine education.

The primary measurement tool used in Hashemian and Jarahi's (2014) study was the Rutter Behaviour Test, used to measure hyperactivity, social conflict, antisocial behaviours and attention deficits; this was completed by the children's teachers. In addition, the authors utilised the Goodenough draw-test which measures aggression in children following an assessment of the art they produce²⁴. Positively, following intervention, the means scores were significantly lower in the experimental group; this was indicated by both the Rutter Behaviour Test and the Goodenough drawing test.

A third Iranian study conducted by **Alavinezhad, Mousavi and Sohrabi** was published in 2014. The purpose of the research was similar to that of Hashemian and Jarahi (2014); to explore the effects of art therapy on anger and self-esteem in aggressive children. Thirty children aged seven-eleven years who were receiving treatment at mental health centres in Shiraz were randomly allocated to a control group and experimental group; those in the experimental group attended art therapy on a weekly basis across a ten week period. Self-esteem was measured pre and post-test using the Cooper Smith Self-Esteem Inventory (1967) which calculates a total score as well as scores on four separate subscales: general self-esteem, social self-esteem, family self-esteem and educational self-esteem. Anger was assessed using the Nelson and Finch (2000) Children Inventory of Anger (ChIA) which calculates a total score as well as scores on four subscales: frustration, physical aggression, peer relationships and authority relations. The experimental group showed significant reduction in anger and improvement in self-esteem, although no significant difference could be identified in relation to the educational self-esteem subscale.

A fourth and final Iranian study (**Bazargan & Pakdaman, 2016**) explores the effectiveness of art therapy in reducing internalising and externalising problems in female adolescents. By 'internalising problems' the authors refer to mental health conditions: anxiety/depression, withdrawal/depression and somatoform disorder. 'Externalising problems' refer to outward behaviours such as rule breaking and aggression. Barzargan and Pakdaman (2016) deployed a quasi-experimental study with two separate groups. Based on self-reports using the Achenbach System of Empirically Based Assessment (ASEBA) the first group was comprised of 30 young females with internalising problems and the second with 30 female adolescents exhibiting external problems. Each of these respective groups was then randomly and evenly split into control and experimental groups with those assigned to the experimental group receiving six sessions of art therapy, each lasting 90 minutes.

²⁴ In the Goodenough test, the child is allocated paper and, seven colored pencils (purple, black, blue, green, yellow, brown and red), and asked to draw a person. This test measures and describes the participants according to four subscales.

The art therapy sessions were conducted in the school and seemingly, attendance was 'compulsory', albeit patchy.

Results of the study showed between pre- and post-test measures, a statistically significant reduction in internalising problems of the experimental group whilst no significant change was recorded in the control group. However, less positively, no significant change was identified in relation to externalising behavioural issues, although the *P* value was close to significance level.

10.1.1 How robust is this evidence?

In contrast to many other studies within this review, Saunders and Saunders (2000) utilised a comparatively robust sample size (n=94). Moreover, they utilised a range of measures and conducted interviews with clients, their parents and carers to check behaviour, symptoms and relationships, thereby increasing validity of study.

However, there are notable limitations with their work namely the lack of homogeneity across the interventions and the absence of detail describing the different modes of bespoke therapy delivered to the 96 participating individuals. This ambiguity entails that, even if the results had been more promising, it would have been impossible to draw any conclusions about which mode of therapy had greatest (and least) impact.

Attainment against goal measures was captured by the therapist (rather than by self-report or parental report) and demonstrated statistically significant improvements. Yet, no attempt was made to categorise the types of goals set by the therapist and equally the rating system seemed fairly unsophisticated; therapist recorded if goals had been 'completely met', 'partially met' or 'not at all met'. It is difficult to overlook that in the introductory sections, Saunders and Saunders (2000) note the 'pressure from funders to better document their outcomes' (p.99)²⁵.

Moreover, the list of 24 common presenting behaviours assessed for change in severity and frequency does not appear to be founded in a validated measure. The list appears somewhat arbitrary as well as wide-ranging and includes problem behaviours as diverse as poor concentration, fighting, sexual acting out, bed-wetting, over-eating, nightmares, poor motivation and change in sleep arrangements. Given that in some cases the client themselves was responsible for disclosing this information it is probable that detail was not always accurately reported either pre or post intervention. This is particularly likely considering the sensitivity associated with some of the listed issues. Moreover, the variation in the sample base further confuses any attempt to understand which mode of music therapy has greatest impact on which type of child. Further, the number of sessions attended by each participant ranged considerably from 2-96. In order to make findings more transferable a more consistent delivery approach would be advised.

²⁵ Saunders and Saunders *'Evaluating the effectiveness of art therapy through a quantitative, outcomes-focused study'* (2000)

The Iranian studies have a tendency to offer a frustrating lack of detail with Khadar et al.'s (2013) write-up representing the weakest of the four. With the exception of Hashemian and Jarahi, (2014), the other three studies offer no description of the control group, severely hampering the level of conviction with which conclusions can be asserted. It is not explicitly clarified in the studies, for example, whether participants in the control group underwent a different intervention or simply no intervention at all. Moreover, Khadar et al. (2013) does not describe how participants were allocated to the control and experimental groups. Both Khadar et al.'s (2013) and Hashemian and Jarahi's studies (2014) do not provide any information about the mode and delivery of the intervention although they do clarify that it was delivered in a group setting.

Furthermore, of the four Iranian studies, only two (Alavinezhad et al., 2014) and Bazargan and Pakdaman (2016) document the structure of the intervention programme in any degree of detail. Based on the information provided in the other two articles (Khadar et al., 2013 and Hashemian & Jarahi, 2014), it would not be possible to replicate the two studies. The conclusions to all four studies are also somewhat limited; in the main they serve only to highlight other articles which have explored similar topics and only Bazargan and Pakdaman (2016) touches upon the limitations of their work. Bazargan and Pakdaman (2016) for instance comment on the high participant drop-out rate, but it is unclear to what extent this issue affected other three studies.

More specifically, from a methodological perspective, questions should also be asked of the reliability of the *Goodenough draw-a-person test* used in Hashemian and Jarahi's study (2014) as a means of measuring change in aggression. At least traditionally, the Goodenough test has been used to measure intelligence, albeit not without criticism (Imuta, Scarf, Pharo & Hayne, 2013). However, it is unclear from the authors' description how (and if) the test was amended to measure aggression. Although the Goodenough test was used as a secondary measure within the study, caution should be exercised in interpreting this data without sufficient explanation as to how it was suitably adapted.

All five studies identified statistically significant results supporting the use of art therapy as a means of addressing behavioural issues. Unfortunately however, the findings are extremely limited and these five studies offer some of the least conclusive research summarised in this review. The four Iranian studies provide insufficient detail to determine or to moreover, replicate their study. Saunders and Saunders' (2000) wide-ranging and varied approach also presents serious issues which limit the value of the findings.

10.1.2 What are the next steps to be pursued to strengthen the evidence base?

To build on the findings of Saunders and Saunders' (2000) study, the profession would benefit from additional studies exploring the long-term impact of art therapy on

young people with behavioural issues. Although Saunders and Saunders (2000) identify promising short-term findings, the study does not enable us to determine anything about the longevity of identified improvements. Future work should look to integrate a greater sense of objectivity by capturing reports from parents and participants as well as the observations of therapists.

As described above, Saunders and Saunders' (2000) study has numerous uncontrolled variables. Future research should deploy more structure; studies should ideally include a control group to facilitate comparison and interventions should be regulated in terms of mode, delivery and duration. This would enable more robust conclusions to be drawn about the efficacy of art therapy as a tool for supporting children with behavioural disorders.

If greater detail had been provided in the four Iranian studies, the research would provide valuable evidence to support the efficacy of art therapy in an international setting. In future, more rigorous studies could be developed in the UK with clearly defined experimental and control groups.

10.2 The evidence from music therapy relating to behavioural and social interaction difficulties

There is also comparatively more quantitative evidence available in this area about music therapy; again five studies were identified. This adds to the qualitative evidence base which suggests that music therapy can help group cohesion and cooperation amongst adolescents with behavioural issues and assist with their self-expression (cited in McIntyre, 2007).

In **2007, Gold, Wigram and Voracek** conducted a quasi-experimental study with 136 children and adolescents suffering from psychopathology. Participants were recruited from outpatient care and special education centres in Vienna with 75 of those assigned to an intervention group, and the remainder to a waiting list for the purposes of comparison. Participants exhibited one or more conditions classified as adjustment or emotional disorders (n=37), behavioural disorder (n=36) and developmental disorder (n=63)²⁶. The researchers aimed to examine whether music therapy, delivered individually in up to 25 sessions, provided in a non-clinical setting was an effective treatment for this client group.

Fifteen music therapists were involved in the delivery of the intervention and they described their approach as 'mainly psychotherapeutic and based primarily on psychoanalytic and humanistic theory' all utilising clinical improvisation as a primary medium (Gold et al, 2007, p.291). Various outcome measures were used to track change, the primary ones being: symptoms (using the Child Behaviour Checklist), competencies (also using the CBCL) and quality of life (assessed using the Munich Health-Related Quality of Life Questionnaire for Children (KINDL). Corresponding

²⁶ Medical conditions were also present in 73 of the 136 participants

post-test data from the comparison group was taken after seven months. For the intervention group only, secondary outcomes were also gathered from primary caregivers who assessed burdens on family and society and additional observations collated by therapists using two visual analogue scales.

The results of Gold et al.'s study (2007) were unfortunately inconclusive and did not show any statistically significant difference over time by primary outcome measure, although parent-rated quality of life showed a tendency toward significant interaction. Although some improvement was noted on two outcomes (CBCL parent rating of symptoms and KINDL parent ratings of quality of life), the authors concluded that 'the effect sizes identified in this study were small compared with those found in previous efficacy studies' (Gold et al, 2007, p.293). It was found that participants without comorbidity experienced the greatest improvements, suggesting that 25 sessions of weekly music therapy are notably less likely to help the most complex cases.

Porter et al. (2016) designed and administered a hugely important RCT, unprecedented in its scale. The study objective was to explore the efficacy of improvised music therapy in treating young people with a working diagnosis of social, emotional or behavioural difficulties as categorised by the International Classification of Disease 10 (ICD-10) Mental and Behavioural Disorders (F00-F99).

Participants were randomly and blindly allocated to either a control group which issued standard one-to-one care or to the experimental group where participants were offered standard care alongside 12 weekly music therapy sessions. Pre- and post data was captured to assess the efficacy of treatment in relation to several key areas: communicative and interaction skills, self-esteem, social functioning, depression and family functioning. The primary outcome was communicative and interactional skills, to be measured by parental and self-reporting using the Social Skills Improvement System Rating Scales (SSIS, Gresham & Elliott, 2008) at week 13 i.e. a week following close of treatment. As a secondary outcome, the SSIS was also administered at week 26 to understand longevity of impact. Additionally, a range of other secondary outcomes were also measured at week 13 and week 26; self-esteem, depressive symptoms, social functioning and family functioning. The authors identified age, autism, anxiety and depression as pre-defined subgroups for analysis prior to the start of the trial.

The impact of music therapy was found to be varied although some positive change was identified when compared to the control group. Immediately after therapy at week 13, there was some improvement in the self-reported measure for communication and interaction skills for those aged 13 or over. Notably however, the impact was not sustained at week 26 and no significant changes were evident at either stage across the wider sample. Despite the short-lived nature of these improvements, Porter et al. (2012) maintain that this improvement is still notable 'in light of the previous dearth

of strong evidence for improved communication among adolescents receiving MT' (p. 5).

Additionally, some general improvements could be identified in relation to secondary outcomes; at week 13, self-esteem was significantly improved and depression scores were also significantly lower. However, these improvements had not been sustained by week 26. There was no significant difference in social functioning²⁷ or family functioning at either week 13 or week 26.

A study conducted by **Chong and Kim (2010)** also used the SSIS to assess the impact of music therapy with this population, this time in an after-school club setting in Australia. Specifically, the therapy aimed to address students' social and emotional problems, but it also sought to reinforce learning skills. 89 students from 13 different schools were referred by teachers to participate in the study. None of the participating pupils had been clinically diagnosed, but rather had been identified by their teachers as exhibiting social and emotional problem behaviours. The referral documents submitted by the teachers heavily informed the therapists' approach who tailored therapy to each individual. The referral forms also helped to set pupils' goals and objectives.

Participants were screened based on their reported behavioural problems and pre- and post-test data was also gathered using the Social Skills Rating System (SSRS). This measured change in pupils' social skills²⁸, problem behaviour and academic competency and was gathered by teachers in the classroom setting. Additionally, teachers were asked to identify students' academic competency by class ranking.

Students were allocated to groups of four-six students, roughly by age group and the programme was conducted over 16 weeks, with twice weekly, 50 minute sessions. Throughout the programme, the eight music therapists involved in the research met regularly to discuss progress and submitted session reports on the participants and intervention evaluations to the researchers.

Each session plan outlined education goal and therapeutic goal as well as rationale why the presented intervention was selected to achieve these goals. Session plans also incorporated relevant adaptations and extensions enabling the intervention plan to facilitate individual differences within the group. Chong and Kim (201) describe that, 'the activities were formulated to utilise cognitive skills to understand the musical process and playing, at the same time tune into emotional and social aspects of the intervention' (p.193). The complexity of the intervention was also tailored to ensure it was appropriate for students' academic aptitude.

²⁷ Although there was evidence at week 26 that there had been some improvement in social functioning, after the removal of a large outlier, the adjusted difference was not significant between the experimental and control group

²⁸ The SSRS social skills scale is comprised of three subscales: assertiveness, self-control and co-operation

Results of the study were promising; in all three sub-categories of social skill a significant improvement was exhibited between pre and post intervention measures. There was also a significant reduction on the problem behaviour scale, though not in academic competency. Observations recorded by the therapists were also encouraging; students had exhibited aggressive, externalising behaviours increased participation in the sessions as time went on, suggesting that they were constructively channelling their energies into the music. Equally, those who had internalised behaviours learned to be more expressive.

The findings of **Rickson and Watkins' (2003)** study were less promising. They sought to test the hypothesis that music therapy was effective in promoting prosocial behaviours in aggressive adolescent boys. Eighty-eight adolescent boys with intellectual, social and emotional deficits in a special education residential facility in New Zealand were screened for eligibility in the study. A total of 18 boys (aged between 11 and 15 years) with clinically significant measures on the Child Behaviour Checklist (CBCL) aggression/hostility scale were recruited to the study. The boys had a range of diagnosis; 12 having previously been diagnosed with Attention Deficit Disorder (ADD) or Attention Deficit Hyperactivity Disorder (ADHD) and four with General Developmental Delay. Nine boys were also on psychotropic medication. Half of the sample was of Maori ethnicity; the other half was New Zealand European.

The adolescents were randomly assigned to one of three groups:

- **Group 1** (6 participants) underwent music therapy in a classroom session
- **Group 2** (5 participants) received music therapy in a residential villa setting where participants enjoyed more 'free' time to interact with their peers without adult interaction.
- **Group 3** (4 participants) denoted a waiting list control group comprised of those who were to receive music therapy treatment in the following term.

The music therapy delivered to Groups 1 and 2 consisted of 16 sessions of 30 to 45 minutes each and followed a 'client-centred humanistic model of psychotherapy' (p. 288). The earlier sessions were more structured and controlled whereas the music therapist gave participants greater freedom to use their creative initiative from session four onwards. The impact of the programme was measured using the subscales of disruption and antisocial behaviour in the Developmental Behaviour Checklist (DBC).

Whilst no statistically significant differences were found, the parent scale, as scored by the residential social workers, demonstrated a consistent apparent improvement across the three groups in all six subscales (Disruptive, Self-absorbed, Communication disturbance, Anxiety, Autistic R., Antisocial), though they rated Group 1 as slightly more disruptive post-intervention. Whilst the teacher-reported change also found that Group 1 were more disruptive, it did not find the same improvement trend across the three groups as observed in the parent scale. In fact, it

noted an increase in communication disturbance for the two music therapy groups and higher anxiety levels across all three groups.

These results seem to demonstrate an ambiguous impact of music therapy. Rickson and Watkins (2003) propose that the lack of significant difference between the control and experimental group could be due to participants' 'awareness of the special attention being paid to them' (p. 296) which may have led to an increase in participants' self-esteem. They also suggest that the increase in disruptive behaviour in group 1 is perhaps due to the 'increased autonomy' (p.296) that participants were experiencing in these active and spontaneous sessions.

Three years later, **Rickson (2006)** undertook a study with 13 adolescent males diagnosed with ADHD to understand the impact of two different music therapy approaches; improvisational and instructional. Participants were randomly allocated to one of three groups:

- **A – waiting list** control group in receipt of no therapy
- **B** –improvisational music therapy for eight sessions then instructional music therapy for 8 sessions;
- **C** – instructional music therapy for eight 8 sessions then improvisational music therapy for 8 sessions.

To assess efficacy, Rickson recorded the number of errors on a Synchronised Tapping Task (STT) as well as Connors' Rating Scale (Connors, 1997) for assessing severity of ADHD. The results tentatively indicated that an instructional music therapy approach, as opposed to an improvisational music therapy approach, 'might contribute to a reduction in motor impulsivity in the classroom' (p. ii) and reduce restless-impulsive behaviours in the classroom, though these findings were not statistically significant.

Choi, Lee and Lee's (2008) results appear to demonstrate a less ambiguous picture than Porter et al.'s (2016), Rickson and Watkins' (2003) and Rickson's (2006) studies, with children in the music intervention group showing greater improvement in self-esteem and aggressive behaviour post-treatment compared to children in the control group. The 48 participants, aged between ten and twelve years, were recruited from a social welfare centre's after-school programme and a primary school in South Korea. All scored above 60T on the Korean version of the Child Behaviour Checklist (K-CBCL). The music intervention programme consisted of 'singing songs, analysis of libretto, making musical instruments, playing instruments such as pianos and hand bells, song drawing and song writing' (p. 215) and sessions were 50 minutes twice a week for 15 consecutive weeks. Children in the control group received no treatment and researchers contacted them each week by telephone 'to confirm they were not taking part in any other exercise activities and to provide impetus to keep them engaged in the study' (p. 215).

Using the Mann-Whitney U-Test and Wilcoxon signed rank tests, both parents and teachers reported a statistically significant decrease in the aggressive behaviour of

children post-treatment in the experimental group, compared to children in the control group where no significant change was observed. In addition, the children who underwent the music intervention scored significantly higher in self-esteem whereas no change was reported by the children in the control group. Choi et al.'s (2008) findings indicate 'that music intervention may reduce aggressive behaviour and improve self-esteem in children with highly aggressive tendencies' (p. 216).

Cobbett's (2016) research was also able to offer promising findings, by demonstrating the potential psychological benefits of school-based arts therapies with young people with social, emotional and behavioural difficulties (SEBD). This study, from the UK, was conducted with participants attending one of two schools in London for pupils with social emotional and behavioural difficulties (SEBD). Crucially however, the study did not explore the impact of music therapy in isolation but rather explored the collective impact of 'arts therapies' which was comprised of music, drama and art therapy groups. Of the 52 young people who participated in the study, the majority (32) received music therapy, eleven receiving drama therapy and nine, art therapy.

A validated measure, the Strength and Difficulties Questionnaire (SDQ) was issued at the start of the therapy and one year into treatment. Additionally, Cobbett devised a self-rated score for young people, used to assess the impact on: 'me', family, school and everything. The same assessments were carried out for all young people in control group, at the same time as the treatment group.

The results were wholly positive. Independent t-tests were carried out to assess the difference between young people's SDQ scores before and after the intervention. They showed that young people who received art therapies performed significantly better than the control group in the five different areas measured by the SDQ: emotional difficulties, peer groups, conduct problems, hyperactivity and prosocial behaviour. Results were particularly promising for conduct and emotional difficulties, which showed the largest size effect.

Lim, Miller and Ruiz (2014) conducted a study comparing the effects of piano instruction with music therapy incorporating piano instruction on academic achievement, classroom behaviour and self-esteem in at-risk students. Thirty-two students identified as having problem behaviours were randomly assigned to one of ten weeks of 30 minute interventions: music therapy incorporated piano instruction, piano instruction in isolation or no intervention. Academic achievement was measured by progress in reading and maths scores as recorded on school reports. Information from previous reports formed pre-test scores. The Coopersmith Self-Esteem Inventories (SEI) and Behavior Rating Form (BRF) captured students' self-esteem.

Results of the study were unable to identify any significant effect of music therapy on academic achievement, ratings of classroom behaviours and self-esteem in at-risk students. Students in the piano lesson group showed significant development in their

reading skills however. This was attributed to the emphasis on learning to read music as a primary component of the piano curriculum.

As well as assessing the impact of art therapy with this population, **Hashemian, Mashoogh and Jarahi (2015)** conducted a study to explore the efficacy of music therapy in reducing aggression in visually impaired adolescents. Students were randomly assigned to either the control group (assumed to be no intervention) or the experimental group comprising of a 12 week group music therapy programme. Pre and post data was collected in both the control and experimental groups using the Buss and Perry aggression self-report and the Rutter behaviour questionnaire for teachers. Against both measures, post-test scores showed a significant decrease in aggression in students assigned to the control group.

Reinforcing the findings of Hashemian et al. (2015), **Maddah, Maddahi & Sodagar (2014)** demonstrated that music therapy is effective in reducing aggression in pre-schoolers. A sample of 30 children identified as having aggressive tendencies were allocated to the control group or experimental group. The experimental group received weekly music therapy for a total of eight weeks, whereas those in the control group were not exposed to any additional intervention. At the end of the intervention, participants within the control group exhibited significantly lower levels of aggression than those in the experimental group.

10.2.1 How robust is this evidence?

An analysis of these ten studies presents a mixed picture. Music therapy in Porter et al.'s (2016) study is shown to have some impact amongst a population of young people with a range of behavioural and social issues. However, despite the large sample size, no significant overall improvements were noted in terms of diagnosis and the improvements identified in the over 13 age group were short lived. Overall, the work was unable to demonstrate that a 12-week programme of improvisational music therapy was able to improve children and adolescent's communication and interactional skills. Meanwhile, Rickson and Watkins (2003), Rickson (2006) and Gold et al (2007) were unable to demonstrate any statistically significant differences between the control and experimental group. Yet, Choi, Lee and Lee (2008), Cobbett (2016) and Chong and Kim (2010) demonstrated much more positive results.

It is of note that Porter et al.'s (2016) study represents 'the largest trial to date examining the effect of music therapy on young people experiencing social, emotional or behavioural difficulties' (p. 6) and the most methodically robust study of all those discussed. Porter's et al.'s study (2016) collated information from six different centres and utilised a range of measurement tools with demonstrated validity and sensitivity to change. Baseline characteristics for the study population were similar in both the control and intervention group demonstrating a robust randomisation process. That said, by week 26, Porter et al.'s (2016) study suffered high drop-out

rates, particularly within the experimental group (38%). This could perhaps have contributed to the underwhelming results obtained.

Some consideration should also be paid to the breadth of Porter et al.'s (2016) sample base which included children and adolescents with anxiety or depression alongside those diagnosed with autism. Much work has been undertaken to assess the efficacy of music therapy as a treatment for children with Autistic Spectrum Disorder (ASD) and it could be argued that this population should be treated as unique.

Attention should also be given to the lack of detail supplied by the authors about the nature of the control group. In this context 'treatment as usual' appears to encapsulate a plethora of treatment approaches, rather than a single, agreed treatment plan. Porter et al. write 'participants assigned to the control group received usual care only, which consisted of psychiatric counselling and/or medication, the dose and frequency of which was as deemed appropriate by the prescribing CAMHS professional' (p.2). Similarly, participants in Gold et al (2007)'s study also received additional therapeutic support alongside the intervention treatment. Therefore direct comparisons between the outcome of the control and experimental group are somewhat problematic due to the heterogeneous nature of control group treatment. With a large enough sample any biases could be expected to randomise out but variations in standard treatment are likely to have a large impact on the counterfactual reported for a smaller sample.

In comparison, it is arguable that there was greater heterogeneity in Kim and Chong (2010)'s smaller study, given that none of the participants had been clinically diagnosed. However, pupils exhibited different severities of behavioural issues and academic ability. Therefore, although session plans were designed to be flexible in terms of application, children were allocated to treatment groups by age, rather than by screening information. It is not clear from the publication how therapists adapted therapy to cater for children exhibiting a range of behaviours within the same therapy group. Moreover, the SSRS is only designed to 'provide a quick estimate of academic functioning' (Pearson) and equally, the teachers' ranking of students' academic competency gathered pre and post intervention was subjective. The authors therefore conceded that they could have used a more robust measure to assess academic competence. Additionally, the study would have benefited from randomisation, a control group as well as feedback from children.

Gold et al's (2007) study faced similar limitations in that the generalisability of results was restricted by the absence of randomisation. Equally, the authors reflect that the outcome measures they used were potentially too broad and unable to capture the specific problems of each individual case. Moreover, a higher proportion of participants with comorbidities allocated to the intervention group entailing the direct comparison between groups could not be facilitated.

Despite Rickson and Watkins' (2003) use of randomisation in allocating participants to their assigned group, group equivalency was not achieved as there were statistical differences across the groups in relation to their diagnosis and age; all participants in Group 1 which showed increased levels of disruptive behaviour, for instance, had a diagnosis of ADHD which necessitates caution when interpreting the results. The results seem to suggest that male adolescents with ADHD would benefit from 'individualized and highly structured treatment' (p. 298) as opposed to aggressive adolescent boys in general, for whom a less structured, more home-like environment might be a more effective setting to undertake music therapy. The small sample size (n=15) is clearly another limitation of the study and decreases its statistical power. In addition, all participants are from a special education residential facility and thus not necessarily representative of aggressive adolescent boys in general. Similarly, Rickson's later study (2006) only had a sample size of 13 adolescent males which increases the likelihood of a Type II error²⁹, though the extensive data collected for each participant somewhat 'increased the statistical power of the group study' (p. 102). As in both studies, some participants were on medication which could act as a confounding factor, potentially obfuscating the true treatment effect.

The outcome measures used by Choi et al. (2008) generally have good levels of reliability and validity and the convergence in findings across different sources (parent-, teacher- and child-reported) serves to strengthen the study's positive findings. The authors raise an issue that the self-esteem measure used has been validated with slightly older subjects than those in the study, so it would be beneficial to further explore the validity of this measure in relation to children to ensure the observed change in score is a meaningful outcome. The randomised allocation of participants to the treatment or control group facilitates accurate detection of the true treatment effect. However, a major problem with the study that threatens the reliability and generalisability of its findings is that the control group was not an 'attention control or an equivalent treatment control group' (p. 216), which ultimately means the authors are not able to determine whether the music intervention was the 'effective factor' in decreasing aggression.

By assessing the impact of art therapy for over a year with 52 children and comparing their performance against Goodman's Strengths and Difficulties Questionnaires (SDQ) with a control sample of 29 children, Cobbett's (2016) study appeared fairly robust. Strengths and Difficulties Questionnaires is statistically reliable and valid psychometric test and widely used in clinical assessments and to evaluate outcomes before and after specific interventions. Individual t-tests were conducted with SDQ scores which offer promising results into the specific impact of the intervention.

In comparison, results collected from Cobbett's (2016) self-rating scoring system administered with young people and teacher rated questionnaires are unclear. Although scores from the self-rating scoring sheet showed greater improvements in

²⁹ That is, incorrectly retaining a false null hypothesis (a "false negative").

the experiment group (art therapy) compared to the control group, Cobbett (2016) does not detail the purpose of this measure and what the four categories ('me', family, school and everything) calculates. In addition, Cobbett (2016) does not provide details including the structure or activities involved for any of the therapeutic interventions (art, drama or music); this leaves some uncertainty into what kind of therapy administers positive effects on SEBD children.

Cobbett's (2016) quantitative study is supplemented with interviews with six young people who had received art therapy. Although findings gathered from these interviews are not discussed here, Cobbett's mixed methods approach offers an insight efficacy of art therapies in treating young people with SEBD and some of the reasons why arts therapies may be more preferable to traditional verbal psychotherapy with this client group.

From a methodological perspective, the studies conducted by Hashemian et al. (2015), Maddah et al. (2014) and Lim et al. (2014) represent the weakest evidence. Rather than using a validated measure, Lim et al. (2014) refer to school reports to measure academic achievement, Moreover, the sample size was comprised of just 32 students, who were allocated to one of two intervention groups or a control group. There was also a lack of homogeneity across the groups of participants, in terms of age (2nd-4th graders were included within the study) and problem behaviours.

Both Iranian studies (Hashemian, et al. 2015 and Maddah et al. 2014) demonstrate positive results but provide a very limited amount of detail, suggesting that results from this study should be treated with caution. It is assumed that those assigned to the control group were not exposed to any intervention, but this is not stated explicitly.

10.2.2 What are the next steps to be pursued to strengthen the evidence base?

Although the results of Porter et al.'s study (2016) are somewhat mixed it is hoped that this will encourage the conduct of other large scale RCTs in the UK. In light of the very small number of UK-based studies, it is important that further efforts are made domestically to demonstrate the efficacy of music (and art) therapy in helping troubled children.

As well as assessing the impact of therapy in specialist schools, there may also be value in further evaluation of programmes delivered in mainstream schools as Chong and Kim (2010) attempted to do. In their systematic review, Carr and Wigram (2009) identified that only ten of the 60 studies they found were from the UK and none of these were outcome studies. Approximately 25% of music therapists in the UK are employed within educational settings (cited in Derrington, 2012). Moreover, given that children and adolescents are legally bound to attend school until the age of 16 in the UK, this environment offers an invaluable opportunity for therapists to offer consistent and routine support for children with SEN.

Specific consideration should be given to studies which seek to evaluate long term, as well as short-term outcomes. Porter et al. (2016) suggested that future research should seek to ascertain whether different forms of music therapy are able to produce more sustained results than the improvisation technique deployed in their RCT.

Porter et al. (2016) highlighted that future work should seek to incorporate observational work wherever possible. This was echoed by Choi et al. (2008) who recommended 'more objective measures such as hormones related with aggression' (p. 216) which could be used as a useful comparator against self-reported measures. Given the complexity of behavioural issues and the high proportion of young people suffering from multiple disorders careful selection of appropriate measures is required in future studies.

Despite the lack of statistically significant results in Rickson and Watkins' (2003) study, the consistent improvement trend across all groups as recorded by residential social workers is 'of clinical interest and merits further study.' A future study with a larger sample size and a focus on specific diagnoses would enable greater confidence in the ensuing results and their generalisability.

Although Rickson's (2006) study comparing improvisational and instructional approaches to music therapy on motor impulsivity of adolescent males with ADHD found 'no convincing evidence' (p. 100) that either form of music therapy achieved this, the results tentatively suggested that the instructional approach was slightly better at reducing restless-impulsive behaviours in the classroom. It might therefore be worthwhile to conduct a future study with a treatment group looking at 16 sessions of instructional music therapy only (as opposed to eight sessions of instructional and eight sessions of improvisational) as this longer period of time might allow students to 'internalise the containment provided by external controls... to make gains to a level where any treatment effect might become measurable' (p. 100). It should however be borne in mind that in practice, therapists apply a range of techniques to assist children and young people with ADHD; a survey of 268 music therapists in the USA revealed that 98% utilised more than one approach. Moreover in 95% of cases, other forms of treatment (typically medication) were used in conjunction with music therapy (Jackson, 2003).

Within Cobbett's study (2016), young people within the experimental group received art, music or drama therapy and yet in reporting, Cobbett does not distinguish between these different modes of therapy. Instead Cobbett reports on the impact of 'art therapies' as a general intervention without considering art, music and drama therapy as distinct and established interventions in their own right. It would be particularly beneficial to understand what individual impact they had on children with SEBD.

A larger sample (experiment and control group) size could offer Cobbett (2016) the opportunity to thoroughly explore and test for differences in young people's SDQ

scores across the three different interventions. In addition, Cobbett (2016) could take steps to randomly allocate children to the experiment and control group in order to produce more robust and generalizable findings.

Table 8: Behavioural and Social Interaction Difficulties – Evidence

Theme	Study	Description of Therapy	Duration of Therapy	Objectives	Setting	Intervention Design	Sample	Results	SMS Rating
Behavioural and Social Interaction Difficulties	Saunders and Saunders (2000)	Art therapy Mixed intervention methods	Children attended between 2-96 art therapy sessions The average number of sessions was 16.8	To explore how, over the duration of therapy, client-therapist relationships develop To discern whether art therapy enabled adolescents to attain a pre-defined set of goals To explore the impact of art therapy on the severity and frequency of presenting behavioural problems	Clinical, US	Unknown	N=94 Pre and post-test data was collected for 94 clients over a 3 year period (1994-1996) Typical client was an 8 year old white male. Clients ranged in age from 2-16 years. Two-thirds of the clients were male Therapists identified an average of 3.9 child or family problems during the initial interview. The most frequently identified were aggression and family violence, alcohol/drugs and parent/child relationship.	Results indicated that between initial interview and the end of therapy client-therapist relationships improved significantly. By the point of exit, the study identified a statistically significant reduction in frequency and severity of problem behaviours. No statistically significant correlations were found between number of sessions and the frequency and severity of their symptoms at the close of therapy The majority of participants (62%) had 'completely met' their principle goal at the end of the programme and a third (31%) were reported as partially meeting it.	2
Behavioural and Social Interaction Difficulties	Khadar et al. (2013)	Art Therapy Painting therapy	12 x 40 minute painting therapy sessions	To investigate the effect of painting therapy with 30 children with	Non-Clinical, Iran	Unknown	N=30 Boys aged 7-12 years	The results showed that the experimental group showed a significant reduction in symptoms of ODD whilst the control group demonstrated no	3

			twice a week.	symptoms of ODD				significant difference	
Behavioural and Social Interaction Difficulties	Hashemian and Jarahi (2014)	Art Therapy Painting Therapy (no further detail provided)	12 painting therapy sessions twice a week for 2 months Each session lasted 75 minutes.	To identify is painting therapy among a population of children with learning difficulties leads to a reduction in aggression	Non-Clinical, Iran	Group	N= 20 Boys and girls, aged 8-15 All had an IQ of 50-70.	The means scores of aggression in the experimental and control group were significantly different	3
Behavioural and Social Interaction Difficulties	Alavinezhad, et al. (2014)	Art Therapy Art therapy was based on the cognitive-behavioural approach with incorporated principles from narrative therapy	10 weeks 2 hour sessions	To explore the effects of art therapy on anger and self-esteem in aggressive children	Non-Clinical, Iran	Clinician Led	N=30 Aged 7-11 years All receiving treatment at mental health centres in Shiraz	The experimental group showed significant reduction in anger and improvement in self-esteem, although no significant difference could be identified in relation to the educational self-esteem subscale	3
Behavioural and Social Interaction Difficulties	Bazargan and Pakdaman 2016	Art Therapy The therapist interacted with subjects for the first 15 minutes of each session and explained the session plan. At the end of each session, subjects discussed their work and associated feelings with their class for 15 minutes. The topics of each session were as follows: Warm Up, Learning about Art Media, General Topics, First Childhood Memory, Family Relations, Directed Mental	6 x 1.5 hours sessions	To determine the effectiveness of art therapy in reducing internalising (emotional) and externalising (behavioural) problems among adolescent girls	Non-Clinical, Iran	Group Clinician Led	N=60 Female students attending art school in Tehran, Iran between 2013 to 2014 30 girls had internalising problems and 30 had externalising issues	Results of the study showed between pre and post-test measures, a statistically significant reduction in internalising problems of the experimental group whilst no significant change was recorded in the control group. However, less positively, no significant change was identified in relation to externalising behavioural issues, although the P value was close to significance level.	3

		Image, Anger Releasing							
Behavioural and Social Interaction Difficulties	Gold et al. (2007)	Music Therapy Individual music therapy Improvisational (including free and structured improvisation)	Typically one x 45 minute weekly session Delivered up to 25 weeks	To examine whether individual music therapy as provided in an outpatient setting is an effective treatment for children and adolescents suffering from psychopathology To examine the possible impact of client variables on the effectiveness of music therapy	Clinical, Austria	Individual	N=136	No significant interaction effects were identified although quality of life showed a tendency in favour of music therapy	2
Behavioural and Social Interaction Difficulties	Porter et al. (2011)	Music Therapy Specifically the Alvin model of 'Free Improvisation' where the therapist does not impose any structure or rules upon the client. Participants were invited to choose an instrument to express how they were feeling that day and the previous week. All sessions ended with a verbal or musical reflection on the session and a plan made for	30 minute weekly sessions over 12 weeks	To examine if improvisational music therapy in addition to standardized care leads to a clinically significant improvement in communicative and interpersonal skills, social functioning, self-esteem, depression and family functioning in young people with	Clinical, UK	Delivered individually, face-to-face Sessions were unstructured and child-led	N=181 Starting sample of 251 young people aged 8-16 and their parents Young people had a working diagnosis of social, emotional or behavioural difficulties using the International Classification of Disease 10 (ICD-10) Mental and Behavioural disorders (F00-F99) A higher proportion of young people were aged over 13 (59%) and the overall population was primarily White (97%). This was representative of the population	<u>Communication</u> Overall, there was no significant improvement in communication at 13 week follow up. However, significant improvement in communication was reported for children aged 13 and over in their self-report. However no significant difference was acknowledged in guardian report.	5

		the following week		social, emotional and behavioural issues ³⁰ The primary outcome was improvement in communication at 13 weeks			routinely supported by clinical services. 40% single parents	<u>Secondary Outcomes</u> Overall self-esteem was significantly improved and depression scores were significantly lower at week 13. There was no significant difference in family or social functioning at week 13.	
Behavioural and Social Interaction Difficulties	Chong & Kim (2010)	Education-Orientated Music Therapy	16 week x twice weekly 50 minute sessions	To examine how an after-school Education-orientated Music Therapy programme can impact students' emotional and behavioural problems and academic competency	Non-clinical	Group	N=89	Areas of social skills and problem behaviour improved significantly after programme implementation: however, there were no improvements in academic competency	2
Behavioural and Social Interaction Difficulties	Rickson and Watkins (2003)	Music therapy	16 sessions of 30 to 45 minutes each	To explore whether music therapy is effective in promoting prosocial behaviours in aggressive adolescent boys who have social, emotional, and learning difficulties.	Non-clinical, New Zealand	Group Clinician-led	N=15 Male participants, enrolled at a special residential school in New Zealand, were randomly assigned to music therapy treatment groups (n = 6, n = 5), and a waitlist control group (n = 4). Significant differences identified between groups for diagnosis and age, with Group 1 all having Attention Deficit Hyperactivity Disorder (ADHD), and for age (p = .027), with Group 2 having a mean age 1.38 years older.	No significant treatment effects identified. Results suggested that a music therapy programme promoting autonomy and creativity may help adolescents to interact more appropriately with others in a residential villa setting, but might also lead to a temporary mild increase in disruptive behaviour in the classroom.	3

³⁰ The study also aimed to assess the cost-effectiveness of intervention and an economic evaluation was also included within the study. We have not included details of this element of the research as part of this review.

Behavioural and Social Interaction Difficulties	Rickson (2006)	<p>Music Therapy</p> <p>Instructional music therapy sessions: students playing on percussion instruments in a highly structured and repetitive format. Therapists gave direct verbal instruction, and feedback on errors and good behaviour too improve responses.</p> <p>Improvisation music sessions: therapist allowed children to choose the instrument, style, mood or theme for the group improvisation. Role of therapist was to support and challenge clients musically, so verbal input was minimal and the approach was non-directive.</p>	10 weeks	To compare the impact of instructional and improvisational music therapy approaches on the level of motor impulsivity displayed by adolescent boys with ADHD	Non clinical	Group. Taught and child led.	N= 13 boys with ADHD	No statistical differences were found between two modes of music therapy as measured by a Synchronised Tapping Task (STT) or the Conners' Rating Scales .	3
Behavioural and Social Interaction Difficulties	Choi, Lee and Lee (2008)	<p>Music therapy</p>	50 minutes twice a week for 15 consecutive weeks	To explore whether group music therapy reduces aggression and improves self-esteem in children with highly aggressive behaviour	Non-clinician, South Korea	Group Clinician-led	<p>N=48</p> <p>Participants, aged between ten and twelve, were recruited from a social welfare centre's after-school programme and a primary school in South Korea.</p> <p>They scored above 60T on the Korean version of the Child Behaviour Checklist (K-CBCL) and could understand the content of the questionnaires and experimental schedules.</p>	Results indicated that children in the music intervention group showed greater improvement in self-esteem and aggressive behaviour post-treatment compared to children in the control group.	4
Behavioural and Social Interaction	Cobbett (2016)	<p>A combined 'arts therapy' programme comprised mainly of music therapy, but</p>	Unknown	To investigate the efficacy of school	Non-Clinical,	Individual, child-	N=52 Experiment group received art	SDQ results showed a significant difference in improvement of levels of SEBD	3

Difficulties		also drama and art therapy Description of therapies were not provided, other than interventions were informed by psychodynamic and attachment theory.		based arts therapies	UK	centred	therapy. (music, art or drama) N=29 Control group: young people on a waiting list for an arts therapy.	compared to the control group across all measures with emotional and conduct difficulties showing a large effect.	
Behavioural and Social Interaction Difficulties	Lim et al. (2014)	Music Therapy Piano instruction vs. music therapy incorporating piano instruction	10 weeks x 30 minute sessions	To compare the effects of piano instruction with music therapy incorporating piano instruction on academic achievement, classroom behaviour and self-esteem in at-risk students.	Non-clinical, unknown	One-to-one	N=32 students with behavioural issues	There was no statistically significant differences between interventions.	3
Behavioural and Social Interaction Difficulties	Hashemian, Mashoogh and Jarahi (2015)	Music Therapy The music therapy treatment consisted of twelve 90-minute semi-private sessions with a week apart; the sessions were held in four classes with a group size of 7 students each.	12 x 90 minute music therapy sessions	To investigate whether music therapy can reduce aggression in adolescents with visual impairments	Non-clinical, Iran	Group music therapy, clinical led	Teenagers with visual impairments	Music therapy intervention was shown to significantly reduce aggression	3
Behavioural and Social Interaction Difficulties	Maddah et al. (2014)	Music Therapy	8 x weekly music therapy sessions	To investigate whether music therapy can reduce aggression among pre-schoolers	Non-clinical, Iran	Unknown	N=30 pre-school boys and girls	Music therapy intervention was shown to significantly reduce aggression	3

11 Review of Evidence: Special Educational Needs (SEN)

According to the Department for Education (DfE)³¹, children and adolescents with Special Educational Needs (SEN) are those with difficulties or disabilities that affect their ability to learn, particularly in relation to their:

- behaviour or ability to socialise, for example they struggle to make friends
- reading and writing, for example because they have dyslexia
- ability to understand things
- concentration levels, for example because they have ADHD
- physical ability³² (DfE)

This chapter has been divided into two sub-sections. The first explores SEN more broadly, whilst the second subsection describes evidence relating specifically to Autism Spectrum Disorder (ASD) which has been a particular focus for music therapists.

This condition is comprised of the five diagnoses of the pervasive developmental disorder spectrum; Autistic Disorder, Asperger's Syndrome, Childhood Disintegrative Disorder, Rett's Disorder and Pervasive Developmental Disorder – Not Otherwise Specified. Although it is listed as a disability by special education law, ASD is not a learning disability³³ but neither is it appropriate to categorise ASD with behavioural issues. It is therefore discussed separately in its own discrete subsection.

11.1 Concentration and Learning Difficulties

Evidence to support the benefits of art therapy for children with learning difficulties is sparse (Freilich & Shechtman, 2010) though there exists an underlying rationale that art therapy is a beneficial treatment for children and specifically for children with learning difficulties who tend to encounter greater socio-emotional difficulties than children without learning difficulties (Metzl, 2008, Freilich & Shechtman, 2010)

Quantitative evidence to support the benefits of music therapy for children with learning difficulties is also limited. Music therapy has been reported to be beneficial in the development of social skills of children with intellectual disability (cited in Duffy & Fuller, 2000). However, what is unclear is the specific role played by music in this process and there is an absence of robust research from which substantial conclusions may be drawn (Aldridge, 1993). The findings are presented in Table...

11.1.1 The evidence from art therapy relating to concentration and learning difficulties

The focus of **Regev and Guttmann's study (2005)** was to understand whether freely engaging in artwork (with no therapeutic element) resulted in positive psychological

³¹ <https://www.gov.uk/children-with-special-educational-needs/overview>

³² As outlined in section 3.2, studies focusing on physical disability or illness fall outside the remit of this review.

³³ <https://www.understood.org/en/learning-attention-issues/getting-started/what-you-need-to-know/is-autism-a-learning-disability>

benefits for children with learning disorders. In contrast to other studies within this review, Regev and Guttman's (2005) used art therapy as one of their three control groups, alongside a games group and a non-intervention group. The focus on art therapy was therefore secondary.

Regev and Guttman (2005) used four standardised measures to assess change; the Piers-Harris Children's Self-Concept Scale (CSCS), the Intellectual Achievement Responsibility Questionnaire (IARQ), the Children's Sense of Coherence Scale (CS) and the Loneliness and Social Dissatisfaction Questionnaire (LSDQ). They found that the art group had 'little advantage over the other experimental manipulations' (p. 309), though children in the experimental group exhibited better Coherence scores, implying that there may be 'some potential psychological benefits in the mere engagement in art activity' (p. 310). Interestingly, there was no statistically significant difference observed in scores in the four domains of coherence, self-esteem, locus of control and loneliness for children in the art therapy group; however, participants' scores in the control games group increased in self-esteem after the 25-week period. No positive impact was found for those attending art therapy.

A second Israeli study conducted by **Freilich and Shechtman (2010)** investigated the impact of art therapy on the socio-emotional and academic achievements of children with learning disabilities. Art therapy, the authors argue represents a more humanistic and emotional approach to supporting children with learning difficulties that differs from traditional methods of solely offering academic assistance. The study included 93 children representing 19 schools; all had been diagnosed with a learning disability prior to being referred to a learning centre. Forty two children received art therapy in addition to academic support and 51 received only academic assistance over a course of 22 weeks. The art therapy intervention was child-led, the therapist enabling them to select a topic and to help them to reflect on the meaningful experience. Change was captured by means of several validated measures, the Child Behaviour Checklist (CBCL) and the Teacher Evaluation Form (TRF) represented the two key tools. Academic attainment was also measured using national normative tests as well as child-therapist bonding. Outcome measures were completed at three points in time: pre and post intervention and at follow-up three months after the end of treatment.

Freilich and Shechtman (2010) identified modest effects in children's levels of adjustment in the experimental group, whose participants received art therapy as an adjunct to academic assistance in comparison to the control group which only received academic assistance. Although Freilich and Shechtman (2010) found a pre-post reduction in symptoms in the treatment group relative to the control group as reported by participants, no difference was found for either group by teachers, nor were there any post-follow-up differences. Interestingly, the authors also found that the children in the control group did not perform better academically than the children in the test group; both groups improved academically but there was no

significant difference between the two. This is positive in the sense that it suggests that children with learning difficulties may benefit from receiving art therapy as an adjunct to academic assistance and can contribute to improving their adjustment without impacting negatively on their academic achievement.

11.1.1.2 How robust is this evidence?

Regev and Guttman's (2005) and Freilich and Shechtman's (2010) studies are relatively robust, with random allocation in the former and no group differences for participants in the test and control group in the latter study (despite the absence of randomisation). The adjustment outcome measures used by Freilich and Shechtman (2010) the CBCL and TRF are statistically reliable and valid psychometric tests (Achenbach, Howell, McConaughy, & Stranger, 1995). However, the relatively small number of children participating and the small number of sub-groups (e.g. 26% of the total sample had ADHD) limits a thorough analysis of the impact of art therapy on children with LDs specifically. Indeed, the relatively small sample of participants in the Regev and Guttman's four groups (ranging from 25 to 29 participants) also acted as a limiting factor as did the lack of attempt to explore potential longer-term effect. This would be particularly worth exploring in reference to the art therapy control group, whose participants showed no change in coherence, self-esteem, locus of control and loneliness, though the authors clarify that therapeutic gains may be 'more subtle...and measureable only long after the therapy sessions are over' (p. 310).

11.1.1.3 What are the next steps which should be pursued to strengthen the evidence base?

Similar to the literature exploring art therapy on children and young people with behavioural difficulties, there is a gap in our understanding of the long-term impact of art therapy on young people with learning difficulties. Even though Freilich and Shechtman's study (2010) collected follow-up data three months after the intervention, this is unlikely to enable us to fully understand the long-term impact of the treatment.

The studies of Freilich and Shechtman (2010) and Regev and Guttman (2005) were based outside the UK so there is scope for similar studies to be replicated in the country. In Freilich and Shechtman's case (2010), it would be worth replicating the study focusing on art therapy alone as opposed to art therapy as an adjunct to academic assistance. Future work should also look to integrate a greater sense of objectivity by capturing reports from parents and participants as well as the observations of therapists as different measures can yield varied results about the perceived impact of the intervention (e.g. in Freilich and Shechtman, 2010).

Whilst comparative to music therapy there is more research examining the impact of art therapy on children and young people with learning difficulties and intellectual

disabilities, the dependent variables of interest differ between the two studies. More work needs to be undertaken to understand particular diagnoses and conditions.

11.1.2 The evidence from music therapy relating to concentration and learning difficulties

Duffy and Fuller's study (2000) sought to assess the efficacy of a music therapy social skills group programme in the development of social skills with children with intellectual disability. Two equivalent intervention programmes were developed; a music therapy social skills group programme based on elements of a programme published by Humpal (1991), and by way of a control, a social skills control group programme that did not incorporate any music element. Both programmes lasted eight weeks.

Children at four special schools for children with learning difficulties were randomly selected to participate in the study and allocated to either the experimental group or the control group. Across the two groups children were matched on age and intellectual ability. For the music group programme, pre-recorded music was compiled, comprising a selection of classical music and original songs. A therapeutic manual accompanied the tape, and provided teachers with detailed and explicit instructions about the procedures to be followed during each session of the programme. The non-music programme was identical to the music programme except that particular non-musical activities replaced musical elements; both interventions were run in 30 minute sessions. Both programmes were designed to develop five target social skills; initiation, turn-taking, vocalization, imitation and eye contact through means of repetition and rehearsal.

Results revealed significant improvements on target social skills were apparent across both the music and non-music conditions and no significant differences were identified between both music and non-music interventions. Therefore, the results were unable any beneficial outcomes unique to music therapy.

11.1.2.1 How robust is this evidence?

Duffy and Fuller's study (2000) suggests that the music therapy component of the social skills group programme did not provide any additional benefits. We cannot conclude on the basis of one relatively small study (n= 32) that music therapy offers no unique properties but this does suggest a need for more in-depth research with children with learning difficulties.

The pre and post measures were gathered by an independent researcher, assessment using a five point Likert scale devised by Pfeiffer et al. (1987) to rate the child's social skills. The test lasted five minutes. Questions should therefore be raised about the legitimacy of this somewhat limited measure to gauge children's ability. A more sophisticated tool and observation over a longer time period would be strongly recommended particularly when seeking to assess something as complex as children's social skills.

11.1.2.2 What are the next steps which should be pursued to strengthen the evidence base?

Duffy and Fuller's study (2000) suggests that the music therapy component of the social skills group programme did not provide any additional benefits. Duffy and Fuller (2000) hypothesise that, if instead of teachers, trained music therapists were to deliver the programme then the impact might be greater. There was some indication for instance, that the experimental group showed a tendency toward being more effective with respect to the skill of imitation. This could potentially be explored in future work. Future work should also potentially include a non-treatment group so results between three groups could be triangulated, potentially shedding further light on the impact of patient-therapist relationships.

Table 9: Concentration and Learning Difficulties – Evidence

Theme	Study	Description of Therapy	Duration of Therapy	Objectives	Setting	Intervention Design	Sample	Results	SMS Rating
Concentration and Learning Difficulties	Regev & Guttman (2005)	<p>Art therapy</p> <p>The experimental group, labelled 'the art group', encouraged children to engage in art projects with no therapy aspect. One of the three control groups, however, was an 'art therapy' group. The first half of their sessions consisted of creating art projects and the latter half centred around a discussion, led by the art therapist, where participants reflected on the art they had created.</p>	25 weekly sessions, each lasting 45 minutes	To explore whether engaging in art has psychological benefits (in the domains of coherence, self-esteem, locus of control and loneliness) for children with some learning difficulties.	Non-clinical, Israel	Group Teacher-led (The art therapy control group was led by an art therapist)	<p>N=109</p> <p>Children were aged between 8 to 13 and from three schools. They were randomly chosen from the schools' population of third to sixth graders of children with learning disorders. Most were formally diagnosed; the remaining 23 were not diagnosed but required and received special help in school.</p> <p>25 children were in the experimental art group. There were 3 control groups: i) games group; ii) art therapy group, and iii) no intervention group. Children were randomly allocated to their group.</p>	<p>The art group had better Coherence scores implying that engaging in art activity may lead to some psychological benefit for children with learning difficulties. Despite this, there was little evidence that participants in the art group fared better than the control groups in terms of self-esteem, locus of control and loneliness.</p> <p>No statistically significant difference was observed in scores in the four domains of participants in the art therapy group.</p>	3

Concentration and Learning Difficulties	Freilich & Shechtman (2010)	<p>Art therapy</p> <p>Art therapy as an adjunct to academic assistance as opposed to the effect of solely academic assistance</p>	<p>1 hour art therapy + 2 hours academic assistance for 22 weeks</p> <p>The control group underwent 3 hours academic assistance over the same 22 week period</p>	To understand the impact of art therapy on the adjustment of children with learning difficulties, the impact of the intervention on academic achievement and the level of bonding between the participant and therapist	Non-clinical, Iran	<p>Individual</p> <p>Clinical-led (art therapy)</p> <p>Teacher-led (academic assistance)</p>	<p>N=93</p> <p>42 in the experimental group; 51 in the control group.</p> <p>Participants' ages ranged from 7 to 15. All participants had been identified formally as having learning difficulties and were referred by their school personnel for assistance. 70% were male.</p>	<p><u>Adjustment</u></p> <p>Results indicated gains in adjustment variables for the experimental group. However, this difference was not reported by teachers, nor were there any post follow-up differences,</p> <p><u>Academic attainment</u></p> <p>The authors found there was no difference in academic attainment across the two groups</p> <p>Bonding and impression of the treatment</p> <p>Bonding and impression of the treatment were actually higher in the control group, though participants in this group started with higher scores. Some process variables improved with time only in the experimental group however.</p>	3
Concentration and Learning Difficulties	Duffy and Fuller (2000)	<p>Music therapy</p> <p>For the music group programme, a cassette tape of pre-recorded music of 30 min in duration was compiled, comprising a selection of classical music and original songs. A therapeutic manual accompanied the cassette tape, and provided detailed and explicit instructions regarding procedures to be followed during each section of the programme.</p> <p>The non-music programme was identical to the music</p>	<p>30 minute group sessions run twice weekly over an 8 week intervention period</p>	To investigate the effectiveness of a music therapy programme in the enhancement of the social skills of children with moderate intellectual disabilities	Non-Clinical, Republic of Ireland	<p>Group, face-to-face, structured</p>	<p>N=32</p> <p>Children aged 5-10 years in attendance at four intellectual disability centres</p> <p>Children functioned in the moderate range of intellectual disability. Levels of functioning were determined from school records based on psychologists' reports.</p>	<p>Significant improvements on target social skills were apparent across both the music and non-music conditions and no significant differences were identified between both music and non-music interventions.</p>	4

		programme except that particular musical activities were substituted for non-musical elements.								
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11.2 Children with Autistic Spectrum Disorder (ASD)

In comparison to other subject areas covered in this review, there is a reasonable volume of quantitative evidence which explores the use of music therapy in the treatment of children and young people who have been diagnosed with Autistic Spectrum Disorder (ASD). A total of nine studies were identified.

Music therapy has become increasingly common for children with autism and has been recommended as an effective treatment in facilitating communication (Gold et al., 2010). Music is a medium that involves a complex range of expressive qualities and offers a means by which some form of communication can be established to help achieve engagement, interaction and relationships. In this way music therapy may align with some of the core problems of people with ASD (Wigram and Gold 2005).

According to the British Association for Music Therapy (BAMT, 2017):

'...because musical participation and response does not depend on the ability to speak, music therapy is a particularly effective clinical intervention for people who have difficulty communicating verbally. Children with autism can develop emotional, social and communication skills'

According to the *Diagnostic and Statistical Manual of Mental Disorders- 5*, in order to be diagnosed with autism, a child will usually be assessed as having persistent difficulties with social communication and social interaction and restricted and repetitive patterns of behaviours, activities or interests that can "limit and impair everyday functioning". As early as 1969, quantitative research was undertaken exploring the impact of music therapy with children with ASD (Oldfield, 2006).

In comparison, there is a distinct and notable lack of literature investigating the impact of art therapy. Yet despite the paucity of statistical evidence, the use of art therapy with children and young people with ASD is seemingly an area of growing interest and practice (Martin, 2009). A slightly dated survey conducted by the American Art Therapy Association (AATA, 2013) found that 11% of respondents considered themselves to be specialised in autism (Elkins & Deaver, 2015). The most commonly used art therapy interventions include object relations, developmental approaches, developmental/behavioural approaches and psychotherapy (cited in Martin, 2009).

However, Schweizer, Knorth and Spreen (2014) were unable to identify any quantitative studies in their review of existing evidence supporting the use of art therapy with this population. Although they were able to identify case work, they conclude, 'well ordered empirical information on 'what works' in art therapy with children diagnosed with Autistic Spectrum Disorders hardly exists' (p.577). Through their analysis of clinical case descriptions they drew cautiously-worded conclusions about the efficacy of art therapy with this population. They write:

'Art therapy may add to a more flexible and relaxed attitude, a better self-image and improved communicative and learning skills in children with ASD. Art therapy might be able to contribute in mitigating two main problem areas: social communicative problems and restricted and repetitive behaviour patterns. Typical art therapeutic elements such as sensory experience with sight and touch may improve social behaviour, flexibility and attention–abilities of autistic children.' (p.577)

Schweizer et al. (2014) acknowledged that the methodological quality of the studies they referred to was weak and acknowledged that there are no robust statistical studies to substantiate these hypotheses. It is unclear why so much more quantitative research has been conducted to explore the impact of music therapy with this population. As Martin (2009) writes:

'Music therapy is a comparable profession to art therapy in both treatment emphasis and size, yet the quantity and quality of its research on autism surpasses our own.' (p.189)

Attempts to explain this difference all seem to have fallen short of achieving a definitive answer to this question. Martin (2009) suggests that 'perhaps the status of art therapy's research on autism implies a larger identity issue within the field' but does not offer an explanation why beyond pointing out that, in contrast to music therapy which is 'better defined, referenced and included in lists of common ASD treatment's, art therapy is often listed with "alternative" therapies such as acupuncture. In turn, Schweitzer et al. (2014) write:

'One of the reasons why there is such a shortage of research is proposed by Gilroy (2006); she suggests that art therapists get uncomfortable from empiricism and turn away from it because of the gap between the varied art therapy practices and the uniformity that is required in outcome studies. Without a certain degree of 'manualization' of art therapies it is very hard to detect common elements in practice that can explain for the difference between the more and less successful art therapeutic cases' (p.591)

This statement of course does not explain why in some areas, for example in relation to trauma, there is much more statistical research conducted with respect to the field of art therapy than there is relevant to music therapy. Further discourse exploring the reasons for this discrepancy is required to shed further light on the issue.

11.2.1 The evidence from art therapy relating to ASD

Despite the breadth of qualitative evidence, only one isolated quantitative study was identified which explores the efficacy of art therapy with children with ASD. **Epp (2008)** tested the hypothesis that art and group therapy is effective in improving social skills and reducing problem behaviours of children with ASD and identified some positive findings. Forty-four children with ASD took part in a local social skills programme called 'The Super Kids' that aimed to improve specific social and

behavioural skills such as compromise, conversation skills and eye contact through a therapeutic model utilising music therapy and cognitive-behaviour techniques. Children were divided into groups that met weekly for an hour.

Epp (2008) utilised pre, post-test and follow up questionnaires with parents (44) and teachers (30) to assess the impact of these after school art therapy classes from both an 'at home' and 'at school' perspective. A standardised measure, the Social Skills Rating System (SSRS) (Gresham and Elliot, 1990) was used to record change in social skills (co-operation, assertion, self-control and responsibility) and problem behaviours (externalising problems such as aggressive acts, internalising problems such as sadness and hyperactivity).

The findings showed that the participants' assertive social skills increased and problem behaviours such as internalising and hyperactivity decreased, both at home and at school. Other social skills (cooperation, self-control) and problem behaviours (externalising) showed an improvement although scores were not statistically significant.

The findings of Epp's study (2008) therefore suggest that art and group therapy can strengthen the social skills of children with ASD, and these benefits can be translated to both a school setting and at home with the family. By comparing the children's test scores on the SSRS, results show that children can make significant improvements in being assertive and reduce a range of problem behaviours.

11.2.1.2 How robust is this evidence?

Epp (2008) took positive steps to strengthen the quality of the evidence by introducing an appropriate standardised measure; the SSRS is widely used and intended for children with mild disabilities in social skills. His sample size was also larger than many other studies within this review. However Epp's (2008) findings cannot account for the variability in the intervention and responses collected from parents and teachers.

Despite Epp's (2008) interest in the impact of art therapy on children with ASD, the intervention only comprised of half of the session (30min). The rest of the session involved practising communication skills in a group and allowing children to carry out any activity with a partner (free time). In addition, Epp (2008) does not detail what specific art activities the children carry out and provides just one example of how they seek to improve the social skills of children with autism. In turn, the importance of encouraging children to engage in free time with a partner straight after the art therapy work was not made clear. As a result, it is difficult to understand why art therapy would be particularly appropriate for children with autism and what part it can play in improving social skills and reducing problem behaviour.

11.2.1.3 What are the next steps which should be pursued to strengthen the evidence base?

Epp (2008) offered some promising results into the effectiveness of art and group therapy on children with ASD however steps can be taken to develop the study design in order to strengthen its evidence base. As Epp (2008) notes, results do not demonstrate if art and group were important ingredients to the success of the intervention and future research should better control for variables. This can be done by introducing a control group; which will involve comparing the outcomes collected from art and group therapy users with a group of children with ASD who did not receive the intervention.

Alternatively Epp (2008) could collect data at additional points in time to understand the impact over different over time. Epp (2008) could collect the same measures mid-way through the intervention (4months) or after every month to get a sense of how long children need to be engaged in the programme before they start receiving benefits.

Epp (2008) actively pursued feedback from both parents and teachers to explore the impact of art and group therapy in the home and in a school environment. However, disappointing results were not discussed in detail. Epp (2008) noted that it was not possible to compare the data because of the small number of teacher-parent pairs at both pre and post-test. A larger sample could increase the number of teacher-parent pairs for triangulation analysis to validate findings and conclusions.

11.2.2 The evidence from music therapy relating to ASD

Children with ASD can present limitations in the development of the verbal language and conventional forms of non-verbal communication such as eye-contact, gesture and body language. They may also be less likely to offer the start of an interaction, taking their turn and understanding other people's feelings or emotions (Wigram & Gold 2005; Gold et al., 2010). Additionally children and young people with ASD can pose behavioural challenges to their parents or other family members.

Nine studies were identified that explore the impact of musical therapy on various core autism impairments and the studies identified can be broadly categorised into the following two themes:

- Social responsive behaviour, social skills and peer interaction; and
- Language and communication

Studies falling within these categories are discussed in turn below. Two studies (Oldfield, 2006; and Iseri, Guney, Guvenc & Sener, 2014) explore outcomes pertaining to both behaviour and language skills and they are discussed at the end of this chapter.

LaGasse (2014) conducted a randomised controlled trial with seventeen children aged six to nine years, who were diagnosed with ASD. The aims of her study were two-fold: to assess the impact of music on social responsive behaviour and its influence on social skills. Nine ASD children were randomly assigned to a music therapy group and eight to a no-music skills control group. Those assigned to the experimental group took part in a manualised intervention, whereby each activity was predefined including levels of support and duration of exercises. Activities involved a musical therapist playing a structured song instructing participants to follow specific actions for example to repeat rhythms, listening to peers with certain instruments and playing something for the group and sharing an instrument with a peer. Those who participated in the no-music skills group (control group) carried out similar or the same activities without music.

Children exposed to music therapy experienced significant improvements in their eye contact compared to children in the control group. The study also found that the musical sessions were more successful in maintaining children's joint attention.

To measure the impact of music therapy on social skills La Gasse (2014) used observations to assess whether musical therapy reduced the amount of interaction between the therapists and children or sparked negative actions towards others. She was particularly interested in picking up on whether the therapy sessions prompted any active attempts by the child to hit, bite and scream or display more subtle behaviours such as avoid eye contact or push toys. LaGasse (2014) recorded social avoidant behaviours near to the beginning and at the end of musical and social skills sessions, and results showed that negative behaviours and withdrawal did not increase significantly for either group. This indicates that the children remained engaged and did not show increased resistance to the interventions over the five-week period.

Kim, Wigram and Gold (2008) employed a randomised controlled study with autistic children of pre-school age in two different conditions; improvisational music therapy (five children) and play sessions (five children). Results showed that improvisational music therapy was significantly more effective at facilitating joint attention behaviours and non-verbal social communication skills in children than play. In addition, the authors found significantly more frequent and lengthier events of eye contact and turn-taking in improvisational music therapy. The majority of the participants in this study, however, failed to exhibit improvement in higher levels of gestural joint attention (pointing and showing).

Thompson, McFerran, and Gold's (2013) exploration into the impact of family centred, home based music therapy on children with severe ASD also offers promising results into how music therapy can support the social engagement with this population of children. Twenty-three children (all who were attending a family-centred

early childhood intervention programme) were randomly allocated to one of two conditions: in home family centred music therapy (FCMT) which formed the experimental group or to an early intervention programme only which acted as the control group. Twelve children in the experimental group received 16 weeks of FCMT sessions in their home. FCMT sessions aimed to support the skill development of the child and the quality of the parent-child relationship. The music therapist carried out a range of activities designed to enable the parent to interact with their child in music making activities and improve the child's social communication skills. Eleven children in the control group participated in their usual early childhood intervention (ECI) programme, with similar family centred practice approaches and amounts of programme contact time per week to the experiment group. However programme contact time was low in the control group as the ECI programme focused on providing parents with skills to support their child in a natural setting.

Through a series of standardised measures, parents assessed the quality of the child's interactions in the home and community according to how well the child gave attention, entered into intentional social interaction and understood and expressed emotion. Children who received family centred music therapy sessions displayed significant improvements in shared attention, focus on faces, turn taking, response to joint attention and their interpersonal engagement with parents and therapists, compared with children in the control group. However, no significant effects of music therapy were found in relation to children's speech and language skills and parent-child relationships.

Kim, Wigram, and Gold (2009)'s randomised controlled study (with ten participants) compared emotional, motivational and interpersonal responsiveness in children with autism in two different conditions: improvisational music therapy and toy play sessions. Results showed that a twelve-week intervention of musical therapy led to significant increases in the frequency and duration of moments when a child and the therapist shared emotional affect (happiness or sadness) while engaged with each other. In addition, markedly more and longer events of child initiating interaction with the therapist and the child smiling or laughing occurred in music therapy sessions.

Kim et al.'s (2009) music therapy and toy play sessions were divided into two parts: undirected (child-led) and directed (therapist-led). Each child was allowed to play the way they wanted in the child-led elements of the session. Meanwhile during the therapist-led components the therapist instructed the child by gently introducing modelling and turn taking activities.

The results indicated the social timing aspects of behaviour in the children, especially in regard to expressing and matching positive emotional expression, improved consistently and more so in the music therapy sessions. Authors were unsure as to why 'musical attunement' was more effective in promoting emotional expressions than solely 'attunement' and but suggested that creating music that relates to the child's expression, interest and focus of attention may foster positive emotions.

Ghasemtabar et al. (2015) also conducted a randomised controlled trial (with 27 participants) and found that music therapy can encourage children with autism to engage and interact with their peers. Musical activities were conducted based on the Orff–Schulwerk method that involves children working in groups and listening to music, singing songs, clapping and dancing and playing a variety of instruments such as xylophone, metallophone, bells and triangle. Children in the control group received no intervention. Results showed a significant increase in social skills in the experimental group (musical therapy intervention) and paired t-test showed that the effectiveness of the music therapy sessions were persistent up to the follow-up phase undertaken two months after the intervention.

Language and communication

Research indicates that as many as 50% of children with ASD will not develop adequate speech to meet their communication needs (cited in Gaberry, 2011). Gattino, Riesgo, Longo, Leite, and Faccini (2011) along with Lim and Draper (2011) conducted randomised controlled trials to investigate the effects of music therapy in verbal, non-verbal and production of speech of children with autism and found promising but not conclusive results.

Twenty-four participants were involved in **Gattino et al.'s (2011) study**, twelve received musical therapy sessions as well as standard clinical treatment and twelve were allocated to the the control group who received standard clinical treatment only. Ten participants were diagnosed with autistic disorder, twelve with Pervasive Developmental Disorder and two with Asperger's syndrome. Blind assessors used the Childhood Autism Rating Scale (CASRS) to derive verbal, nonverbal and social communication scores pre and post intervention. Unfortunately, the CASRS scores did not show a statistical difference in the three measured outcomes in either the experimental or control group. However, as a discrete subgroup, participants with autistic disorder allocated to the experimental group showed a statistically significant improvement in non-verbal behaviours compared to their counterparts in the control group.

Lim and Draper (2011) incorporated musical therapy techniques into a common form of developmental speech-language training for the children with autism called Applied Behaviour Analysis Verbal Behaviour (ABA VB). Twenty-two participants were randomly assigned to three training conditions: music incorporated ABA VB (which consisted of signing and verbal instruction), speech ABA VB and no training. Their results indicated that children in speech and music groups showed significant improvements, importantly however there was no difference between the groups. IT is unclear therefore to what extent children benefited from the music therapy component.

Oldfield (2006) conducted a pre/post-test design to explore the impact of her music therapy approach on pre-school children delivered in a Child Development Centre in Cambridge. Unlike the other studies, she set out to understand more about the impact of her personal therapeutic style, rather than to demonstrate the efficacy of music therapy in the more general sense. Aims and objectives were set for each individual child in collaboration with their parents with the majority of goals related to communication. The small sample size (n=10) of pre-school children enabled Oldfield to identify which of the different aims and objectives were best addressed by music therapy, as well as revealing where sessions had less success.

All sessions were videotaped and analysed by a research assistant in five second intervals to ensure that small changes in behaviour were captured. Additionally, parents were interviewed, written feedback was captured after every session and they were also invited to complete a pre-post intervention measure (Parenting Stress Index). The results of this small-scale study were inconclusive; though coding of the videotaped sessions showed that four of the ten children became more engaged with therapy over the intervention period, no change or a decrease in engagement was evident for the other children. Music therapy was also not shown to be particularly successful in increasing the amount of play movement or children's vocalisations. However, two children targets for increasing spontaneous speech showed significant improvements. Negative behaviours (such as shouting) were not shown to decrease, although Oldfield suggested that this may have been a positive sign; that children could feel comfortable expressing themselves. Although nearly all (9/10) parents were positive about the therapy, only two showed statistically significant lower stress levels post-treatment.

Finally, a Turkish study, conducted in **2014 (Iseri, Guney, Guvenc & Sener)** was unique in its efforts to explore the efficiency of, and neurohormonal responses to, music therapy in children with autism. Ten children and adolescents diagnosed with ASD participated in the study and participated in music therapy sessions which were designed to promote positive change in three domains: language communication, social interaction and positive behaviours. The intervention was delivered as a single, intensive five-hour music therapy session on a monthly basis over a period of four-eight months in total.

At the start and end of the intervention period, the Childhood Autism Rating Scale (CARS) was used to determine the severity of the autism and parents were interviewed to assess their child against the three domains. A blood sample was also analysed pre and post-intervention in order to monitor stress hormone levels.

The results indicate that following music therapy, there was a significant decrease in the severity of symptoms (hyperkinetic movement and repetitive behaviours) whilst increasing reciprocal social interaction and verbal communication. Parent interviews

also showed children to demonstrate significant improvement against the three domains following therapy. However, no hormonal change was detected.

11.2.5 How robust is this evidence?

Although the results of Iseri et al (2014) and Oldfield (2006) are less conclusive, five studies found evidence suggesting that musical therapy is beneficial in improving social behaviours. Findings from this review suggest that synchronous movements during rhythmic actions and singing or making music together can facilitate a shared purpose and encourage more social responsive behaviours among children with autism. Meanwhile, results from Kim, Wigram, and Gold (2009) and Ghasemtabar et al. (2015)'s research suggest that the structure and predictability found in music can facilitate motivation and social interaction, as well as promote meaningful interpersonal responses.

The overall quality of the studies was fairly strong with most (six of the nine studies) deploying control groups and randomised allocation. The evidence from Oldfield's study (2006), the only one conducted in the UK, is limited by its sample size and diversity of outcomes. Moreover, although the coding of the video recordings was verified by a second independent assessor, Oldfield (2006) does not base the coding structure on a standardised and verified measure. The standardised measure (PSI) which was used in this study did not identify any statistically significant differences at an overall level. Iseri et al. (2014) and Lim and Draper (2011) also undertook a pre-post quasi experimental approach with no control group and a very limited sample size. However, all of the studies involved a fairly small sample size and poor retention of participants was also a common limitation in the identified RCTs.

The majority of studies examined the short-term effects of music therapy. Only two studies (LaGasse 2014, Ghasemtabar et al. 2015) took further steps in investigating the consistency of the effect of music therapy by administering a follow-up phase with participants. Therefore, it remains largely unknown how enduring the effects of music therapy on social responsiveness and communicative skills are. Oldfield writes that in her clinical experience that two terms 'is usually enough time to enable changes to occur' (2006, p.163) but currently, there is a lack of evidence to substantiate this.

As a collective evidence base, it is hard to draw definitive conclusions from these nine studies. The variability of the interventions and outcome measures used in the studies makes it difficult to draw specific conclusions on the effects of music therapy. This is particularly true in the case of Oldfield. Her study has been included because in the strictest sense it adhered to the inclusion criteria. However, the heterogeneous nature of the sample meant that each child-parent dyad was working toward different aims within the sessions.

There was also little consensus among the studies of the duration of the music therapy condition or the activities incorporated. There was no consistency of approach

with respect to duration of the music therapy condition; one intervention lasted only two weeks (Lim & Draper, 2011) whereas Iseri et al. (2014) delivered five hour music session across a four-eight month period. This may reflect different standard practices across the world and highlights the need for work to be undertaken in the UK to ensure findings are transferable to a domestic setting.

Out of the nine studies, most (7) used the Childhood Autism Rating Scale (CARS) and the DSM –IV diagnosis to screen and confirm the diagnosis of autism among participants. Meanwhile Lim and Draper (2011) used diagnoses from health care providers and Oldfield (2006) worked within a multi-disciplinary team at a child and family psychiatry unit where the children were diagnosed. Despite this effort from most authors to use standardised measures, little is included in the studies about severity of autism experienced by participants and their level of functioning. Fewer than half of the studies (Kim et al, 2009; Kim et al, 2008; Gattino et al 2011 and Iseri et al 2014) stated how participants rated on the measures they used and described the social and behavioural problems they experience. This missing information makes it difficult to assess how music therapy is meeting the needs of children with ASD and what mode of music therapy benefits children with ASD the most.

Furthermore, the studies do not clearly indicate which approach to music therapy serves to benefit children with ASD the most. Three studies implemented a flexible approach to the music therapy in which participants served as their own control and determined how the therapy session was conducted. Three other studies used a structured technique with therapists leading the music therapy sessions and choosing the activities. Meanwhile two studies incorporated a ‘mixed method’ approach to music therapy, combining elements of child-led play and therapist directed intervention. It was unclear which approach Iseri et al (2014) adopted. As such, as Gold et al., 2006 note, the effectiveness of musical therapy as an evidence based intervention is still unclear as ‘interventions and study designs are heterogeneous to allow clinically meaningful and methodically strong conclusions’ (Gold et al., 2006, pg3); thus a more targeted review of controlled studies in this area is required.

11.2.6 What are the next steps which should be pursued to strengthen the evidence base?

As other literature reviews into this area have suggested (Accordino, Comer, Heller, 2006; Lith et al. 2003 and Gold et al. 2006), future research on music therapy for children with autism should pay close attention to sample size and the choice of research designs. Limited sample size was a common feature among the included studies and there was only light discussion of test power.

Longitudinal research is needed to examine the effects of music therapy over longer periods. Gold et al. (2006) have suggested that sustained therapeutic interventions may be more appropriate for those with ASD, given ASD is a pervasive developmental disorder and the typical emergence of entrenched behaviour. He has been leading

the largest international and longitudinal RCT called Time-A since 2012 (Gerettsegger et al., 2014); the results from which are eagerly awaited.

An interesting area of exploration would be to understand the value of music therapy in an education setting. Although no statistical studies could be identified in this area, recently in Australia McFerran, Thompsona and Bolgerb (2016) have demonstrated in their initial scoping exercise that within an educational setting, music therapy has greatest impact on relationship building. Their research aims to pave the way for greater work within the classroom environment, which, if adopted more widely, could help to create a positive learning environment, ultimately benefitting a greater number of children with ASD.

Table 10: ASD – Evidence

Theme	Study	Description of Therapy	Duration of Therapy	Objectives	Setting	Intervention Design	Sample	Results	SMS Rating
ASD	Epp (2008)	<p>Art therapy</p> <p>A therapeutic model to improve specific social and behavioural skills such as compromise, conversation skills and eye contact. Groups meet weekly for an hour and is made up of three key parts:</p> <p>(1) Conversation skills (10min)</p> <p>(2) Structured art activity (30min)</p> <p>(3) Unstructured free time (20min) students can choose an activity such as play/create art.</p>	Weekly during school year x 1 hourly sessions	To test the hypothesis that art and group therapy is effective in improving social skills and reducing problem behaviours of children with ASD	Clinical, US	Group and combination of taught and unstructured	N=44 primary and secondary school children	<p>Significant evidence shows that both at home and at school the frequency of assertive social skills increased and internalising behaviours, hyperactivity and problem behaviours decreased.</p> <p>All other social skills (cooperation, responsibility, self-control) and problem behaviours (internalizing, hyperactivity) showed an improvement, although scores were not statistically significant.</p>	2
ASD	LaGasse (2014)	<p>Music therapy</p> <p>Children played different instruments together that required taking turns and listening to each other.</p> <p>Therapist directed activities facilitated different gross motor movements and made</p>	Ten 50-minute group sessions over a period of 5 weeks	To examine whether musical therapy group sessions can improve social and communication skills of	Clinical, US	Group and taught	N=17	Significant between group differences for joint attention with peers and eye gaze towards persons with participants who have received MT demonstrating greater gains.	3

		children share and take turns. The control group involved structured play, same activities without music.		children ASD					
ASD	Kim et al. (2008)	Music therapy 15 min undirected (child-led) time where the therapist supported and elaborated the child's play, followed by a 15 min directed music therapy session where the therapist introduced modelling and turn-taking activities within the child's focus of attention and range of interest.	12 weekly 30min improvisational music therapy sessions	To explore the effects of improvisational music therapy on joint attention behaviours in pre-children	Clinical, US	Individual and mixed techniques	N=10	Improvisational music therapy was more effective at facilitating joint attention behaviours and non-verbal social communication skills in children than play.	3
ASD	Ghasemtabar et al. (2015)	Music therapy Musical activities were conducted based on the Orff-Schulwerk method with the help of two music therapists. Sessions involved listening to music and working with instruments.	Two sessions of one hour a week, for 45 days.	To identify the effectiveness of MT method in improving social skills of children with autism	Non-clinical, Iran	Group and child-led	N=27	Results showed a significant increase in social skills' scores of the experiment group and t-tests showed that the effectiveness of MT has been persistent up to the follow-up phase.	3
ASD	Gattino et al. (2011)	Music therapy Music therapist put various musical instruments including the keyboard and tambourine on the floor/table so the children could select an instrument of their choice. The therapist observed the child behaviour and then	Four music therapy assessment sessions (30min per session) and 16 weekly music therapy sessions (30min per session).	To examine the effects of relational music therapy on communication of children with autism	Clinical, Brazil	Child led and Individual	N=24	There was no clear indication that music therapy is more effective than clinical measures. Music therapy did not show any statistical difference in the three measured outcomes. However results did show a positive statistical difference on subgroup analysis of non-verbal communication among	3

		starts interacting with the child with the instruments. Parents also interact with the child with instruments.						patients with autistic order	
ASD	Lim and Draper (2011)	Music therapy Applied Behaviour Analysis Verbal Behaviour (ABA VB) involves singing verbal instructions. ABA VB is to be used to teach simple types of inter-verbal behaviour using well known and favourite songs of the learner.	Participants received music and speech training a minimum of 3 days a week for 2 weeks (6days).	To understand whether music therapy based Applied Behaviour Analysis Verbal Behaviour (ABA VB) encourages speech production in children with ASD	US, Setting of intervention not specified.	Individual and taught	N=22	Music and speech training had a significant effect on verbal behaviour but there was no significant difference between control groups; i.e. the music therapy element did not produce superior outcomes. .	2
ASD	Thompson et al. (2013)	Music therapy The study deployed a range of structured and unstructured activities designed to address five different aspects of social communication: focus on faces, turn taking, response to joint attention and initiation of joint attention. Including songs, improvisation with musical instruments and movement to music.	Children received either weekly 30-40min sessions of Family – centred music therapy (FCMT) for 16 weeks or an early intervention programme.	To examine if children receiving music therapy improve social skills and quality of relationship with their parents.	Australia, Non-clinical	Individual, Child led and taught,	N=23	There was a significant increase in interpersonal engagement amongst children in receipt of music therapy compared with the control group. Parents also perceived improvement in their children's social interactions in the home and community.	4
ASD	Kim et al. (2009)	Music therapy In both the music therapy and toy therapy groups sessions were divided into two parts (1) child led (2)	Each child had toy play sessions and improvisational music therapy sessions	To examine if improvisational MT improves emotional, motivational and	US, Setting of intervention not specified	Individual and mixed techniques	N=10	There were marked difference between the effects of music therapy and toy play sessions; positive behaviours were more frequent and for a longer period during for those	3

		<p>therapist led.</p> <p>In the child-led components each child played as they wanted. In the therapist led aspect, the therapist introduced modelling and turn taking activities.</p> <p>The toy play sessions formulated the control group and music was not used.</p>	<p>consisting of four weekly 30min sessions for 12 consecutive weeks, for each condition.</p>	<p>interpersonal responsiveness of children with ASD</p>				<p>exposed to music therapy. Expressing and matching positive emotional expression (social timing behaviours) also improved more in MT.</p>	
ASD	Oldfield (2006)	<p>Music therapy</p>	<p>Each child received 18-26 weekly therapy sessions (corresponding to 2 terms)</p>	<p>To identify optimum conditions and means of utilising music therapy as a means of treating ASD</p>	<p>Clinical, London</p>	<p>Individual, therapist led</p>	<p>N=10</p>	<p>Four of the ten children became more engaged with therapy over the intervention period but no change or a decrease in engagement was evidence for the other children. Music therapy was not shown to be successful in increasing the amount of play movement or children's vocalisations.</p>	2
ASD	Iseri et al. 2014	<p>Music therapy</p> <p>Live music was played using specifically selected wind and string instruments. Children were also allowed to play with the instruments under supervision</p>	<p>1 x 5 hour music therapy session per month for 4-8 month period</p>	<p>To explore the efficiency of neuro-hormonal responses to, music therapy in children with autism.</p>	<p>Clinical, Turkey</p>	<p>Unknown, Therapist led</p>	<p>N=10</p>	<p>Music therapy decreases hyperkinetic activity and stereotypical-repetitive behaviors while increasing mutual social interaction and verbal communication.</p> <p>Autistic symptoms assessed by CARS significantly decreased following the therapy.</p> <p>Music therapy had no influence on hormonal response.</p>	2

12 Conclusions and Recommendations

12.1 Discussion

This review presents a systematic evaluation of quantitative evidence published since 2000 which explores the efficacy of art and music therapy with vulnerable children and young people. It is evident that there is a general lack of statistically robust studies which demonstrate the impact of art and music therapy for children with the listed experiences and conditions. As set out in section 4.1 a total of ten conditions and diagnoses were included within the scope of this review, yet only 51 relevant articles could be identified that adhered to our relatively broad inclusion criteria.

Moreover, as seen throughout this review, evidence tends to be patchy and to cluster around particular topics within each discipline. To cite two examples: whilst only one article (Epp, 2008) explored the efficacy of art therapy with children with ASD, there is a comparative plethora of quantitative evidence exploring the impact of music therapy with the same population. Equally, whilst four articles were identified that examine art therapy as a treatment for trauma, none could be found that investigated the effectiveness of music therapy. This is an interesting finding given that there is qualitative evidence to support the use of both art therapy and music therapy within each of the contexts discussed in this review. Indeed, qualitative and case study work can be sourced which serves to demonstrate efficacy of music therapy and art therapy against all the conditions discussed, which makes the paucity of quantitative evidence somewhat surprising.

Some suggestions for the lack of statistical and inconsistent evidence can be proposed. First, creative therapy professionals tend to focus more on narrative rather than quantitative data and they and their agencies may not have the interest or aptitude to pursue more quantitative analysis³⁴. Second, the majority of music therapy and art therapy providers within the UK are small in scale with limited budgets and may struggle to fund the additional recruitment, data collection and analysis required. Third, experience in managing other studies suggests that many social care professionals struggle to direct families to a non-treatment comparison group when their mission is to provide help. Commissioners and funders have a part to play to encourage the desire for quantitative evidence and to address this lack of research capacity in a discipline that is often pursued when clients cannot or do not engage with traditional 'talking therapies'.

There is very little available literature which discusses the growth of creative therapies within the UK; although on its website BAAT asserts that art therapy is 'growing'. At the time of writing, there were 1607 full British Association of Art Therapist (BAAT)

³⁴ As discussed in the Introduction, this is not a shortcoming per se; qualitative evidence plays a crucial role in the development of our understanding of the professions. Rather, it is proposed that more quantitative investigation is undertaken to readdress the balance between statistical and qualitative work.

members and 951 members of the British Association of Music Therapist (BAMT)³⁵ and so the size of both professions can be understood to be relatively modest. Although difficult to substantiate it may be the case that both professions need to reach a 'critical mass' to encourage further investment in research. The situation as it stands may represent somewhat of a 'chicken and egg' scenario; there is perhaps an absence of rigorous baseline data to serve as a platform to generate wider research interest. Effectively, promising and compelling research findings are likely to encourage funding of further research. Uptake of music and art therapies is still variable within the NHS (Odell-Miller & Westacott, 2006). We note the 'clustering' of evidence around particular topics whereby exploration of a particular subject gains momentum and authors refer to and build on each other's work. Of course, it may also be the case that interest in a particular treatment area reflects policy context and/or other trends in public and clinical discourse at the time. The BAAT for instance, have promoted art therapists' work in cases of trauma and significant work is being carried out by music therapists to investigate the effectiveness and value of music therapy with older people with dementia.

It is clear that the methodological challenges discussed in Chapter 6 do not represent issues for the art or music therapist alone. Rather, most of the issues discussed present difficulties to all professionals endeavouring to conduct quantitative research with young and vulnerable populations. Yet probably more so than in other disciplines, music and art therapists advocate the use of flexible approaches, tailored to the needs of individual clients (Wigram et al. 2002) and this can create difficulties in evaluating efficacy in a systematic manner. As outlined by Buck et al (2012), 'a clear consensus on the practice and process of art psychotherapy has yet to be established' (p.2). There may also be a prevailing, and to some extent accurate view, that quantitative evaluation is unable to capture and reflect the subtle nuances of their practice; however this needs to be accompanied by a clear statement of its strengths.

Although there is a general paucity of quantitative evidence in both disciplines, it cannot go unnoticed that more statistical studies have been conducted in relation to music therapy. This review identified 37 music therapy studies, compared to 14 studies pertaining to art therapy. It is somewhat unclear as to why this might be the case. A somewhat crude analysis suggests that both professions appear to be similarly established; both 'music therapist' and 'art therapist' are HCPC protected titles and a Master's degree in both fields is required to practise. It is interesting to note that, although there are more practising art therapists in the UK, more music therapists are carrying out research.

³⁵ Neither music nor art therapists are required to be registered with BAAT or BAMT but it is strongly recommended. It is likely that there are more therapists registered with HCPC who are not members of their respective association. HCPC were unable to provide figures for registered practitioners.

Perhaps the comparative lack of evidence relating to art therapy is intertwined with the slightly less 'controlled' nature of intervention. Arguably the manner in which children act with music therapy interventions can be measured more viably than in art therapy. In music therapy for instance, the point at which the child makes contact or engages with an instrument can be recorded, along with how long the interaction lasts. A child's engagement with art therapy is potentially less defined and more challenging to monitor and measure. By extension therefore, it could also be suggested that art therapy interventions are harder to replicate, even in RCTs.

Moreover, it is worth considering that whilst art therapy requires some element of input and interaction on the part of the child, music can be both passive and interactive. In situations where children and young people are shy, nervous or distrusting of adults, perhaps music therapy may be more viable as an intervention and this could possibly explain its greater presence in the literature.

It may also be the case that there are fewer art-specific tools at therapists' disposal. For example, music therapists at Coram utilise the Music Therapy Outcomes Star, art therapists primarily gather SDQ data which is general to all forms of therapy. Dalton and Krout (2006) also had some success in demonstrating the efficacy of their 'The Grief Process Scale', as a means of measuring the impact of music therapy on bereaved children. Fewer targeted measures seem to be available to art therapists; for instance questions have been raised about the reliability of the *Goodenough draw-a-person test* used in Hashemian and Jarahi's study (2014).

It is also plausible that the experience of a controversial RCT conducted in 2012 may have deterred researchers from formally investigating the impact of art therapy. The 'Matisse RCT' (Crawford et al. 2012) as it is commonly known was a high profile study, conducted over 12 months with 417 participants at a cost of approximately £928,000 (Wood, 2013). Unfortunately, the experiment, which sought to assess the impact of group art therapy as an adjunctive treatment for people with schizophrenia, revealed no advantages for art therapy over standard care. Shortly after publication, it was written that 'Art therapists internationally are now considering the nature of the wake left by the randomised control trial (RCT) known as Matisse' (Wood, 2013). The study has been heavily criticised for its design in a very public sphere; potentially discouraging others from undertaking research.

12.2 Conclusions

As identified throughout this review, where evidence does exist it often has some limitations. Although some studies deployed rigorous research methodologies and large sample sizes (notably Porter et al., 2011; Lyshak-Stelzer et al., 2011; Chapman et al., 2001), some weaknesses can be observed across the evidence base:

- **Most studies did not gather follow-up data measures** – only Goldbeck & Ellerkamp (2012), Chapman et al. (2001), LaGasse (2014), Ghasemtabar et

al. (2015) and Vianna et al. (2011) captured long-term measures beyond the end of the intervention period

- **The sample sizes were often small** – only Nicholson et al. (2008, 2010), Porter et al. (2011), Regev & Guttman (2005) and Loewy (2013, 2015) utilised a sample size of over 100 participants
- **Most studies were conducted outside of the UK** –just Porter et al. (2011), Cobbett (2016) and Oldfield (2006) conducted studies in the UK
- **Several studies did not provide detail about the control group intervention** (Khadar et al., 2013; Alavinezhad et al., 2014; Barzargran et al., 2016; Maddah et al. 2014; Hashemian & Jarahi, 2014; Hashemian et al. 2015) **or the control group did not represent standardised homogenous treatment** (Goldbeck & Ellerkamp 2012; Porter et al., 2016) - this therefore limits replicability but also the extent to which any change can be seen to be conclusively attributed to experimental group design
- **Several studies do not detail the nature of the intervention** (Pifalo 2006; Saunders & Saunders, 2000; Hashemian & Jarahi, 2014; Hashemian et al. 2015) – this negates efforts to draw conclusions about the strengths and weaknesses of particular modes of therapy
- **Several studies did not examine the effect of art therapy** (Pifalo 2006, Cobbett 2016) **or music therapy** (Goldbeck et al. 2012; Hilliard 2001) **in isolation but rather as an adjunctive or combination treatment** – therefore making it impossible to identify the impact of art or music therapy in isolation³⁶.

As such, many questions remain unanswered, notably around length of treatment. For example, can we assume that the number of treatment sessions is related to outcomes? When do diminishing returns for additional sessions set in? Does treatment duration correlate with longevity of outcome?

Additionally, it is extremely difficult from this quantitative evidence to draw conclusions about the most effective mode of therapy for particular contexts. The small pool of statistical research covering each topic suggests that it would be inappropriate to speculate if or when improvisational or more structured techniques are more beneficial. Most research has been conducted in relation to ASD and music therapy but the variety of approaches and outcomes across the seven studies still prevents identification of which approaches (and what settings) are most effective (although this issue is being addressed by Gold's ongoing Time-A project). Tellingly, Rickson's (2006) purposeful endeavour to directly compare the impact of instructional and improvisational music therapy as a treatment for ADHD was unable to confirm which approach was most effective.

³⁶ This is not a limitation of the respective studies as they did not intend to demonstrate the impact of creative therapies in isolation. However the authors' combined approaches restrict our understanding of the value of art therapy and music therapy as independent forms of treatment.

12.2.1 Findings by discipline

Irrespective of these issues and limitations, some helpful and insightful research has been identified in the 51 articles covered in this review which presents a somewhat inconclusive, but generally positive, overall picture. A somewhat blunt categorisation of the 49 unique studies shows that:

- **25 studies identified mainly positive findings:**
 - **7 with respect to art therapy:** Lyshak-Stelzer et al. (2011); Pifalo (2006); Saunders & Saunders (2000); Khadar et al. (2013); Hasemian et al. (2014); Alavinezhad et al. (2014) and Epp (2008)
 - **18 with respect to music therapy:** Vianna et al. (2011); Del Olmo et al. (2015); Loewy et al. (2013); Nicholson et al. (2008); Nicholson et al. (2010); Dalton & Krout (2005); Hilliard (2007); Chong & Kim (2010); Choi, Lee & Lee (2008); Cobett (2016); Hashemian et al. (2015); Maddah et al. (2014); LaGasse (2014); Kim et al. (2008); Thompson et al. (2013); Ghasemtabar et al. (2015); Kim et al. (2009) and Iseri et al. (2014)
- **16 studies identified mixed results:**
 - **4 with respect to art therapy:** Lee & Peng (2017); Pretorius & Pfifer (2010); Barzargran et al. (2016) and Freilich & Schetman (2010)
 - **12 with respect to music therapy:** Ettenberger et al. (2016); Malloch et al. (2012); Schlez et al. (2011); Techkenberg-Jansson et al. (2011); Del Olmo et al. (2010); Gattiano et al. (2011); Loewy et al. (2015); Goldbeck & Ellerkamp (2012); Hilliard (2001); Lim & Draper (2011); Jacobsen et al. (2014); Yang (2016) and Porter et al. (2011)
- **8 studies demonstrated little or no evidence of efficacy:**
 - **2 with respect to art therapy:** Chapman et al. (2001); Regev and Guttman (2005)
 - **6 with respect to music therapy:** Gold et al. (2007); Rickson & Watkins (2003); Rickson (2006); Lim et al. (2014); Duffy & Fuller (2008) and Oldfield (2006)

Therefore, over half (51%) of the studies discussed within this review indicate mainly positive findings which support the use of music therapy and art therapy with vulnerable children. A breakdown by discipline shows that 54% (7 of 13) of studies exploring art therapy were predominantly positive, slightly higher than the proportion of music therapy investigations 50% (18 of 36). Overall this would suggest that art therapy and music therapy are frequently an effective means of treating vulnerable children. Moreover, 'mixed' studies are also able to offer some evidence of efficacy and contribute to an overall encouraging picture. Yet it is problematic to draw many more definitive conclusions from the evidence available. There is a clear need for

further research to be undertaken to refine and shape approaches in order to generate optimum results.

As shown above, in each discipline a roughly equal proportion of studies were unable to identify positive outcomes (17% music therapy vs. 15% of art therapy). However, more research has been undertaken on the subject of music therapy. In terms of efficacy it is also not clear how art therapy and music therapy compare to other interventions such as counselling or CBT, or indeed, how they compare to each other. As an isolated example, Rita Rosner claimed in her meta-analysis, that music therapy (as demonstrated by Hilliard, 2001 and Dalton & Krout, 2006) was significantly more effective at reducing the symptoms of grief than other interventions but no other equivalent or recent analysis seems to have been undertaken. In 2000, Reynold et al. concluded 'in the few studies that have been performed, art therapy appears to be effective, but not usually more effective than standard therapy (cited in Slayton et al. 2011, p.211). A more recent meta-review of the studies published since 2000 would clearly be invaluable, as would a study of situations where clients were not able to engage with more traditional therapies.

12.2.2 Findings by subject area

On a topic by topic basis, it is difficult to evaluate the weight of the available evidence and reach a verdict about where music and art therapy have been shown to be most effective. This is due to the wide variability in delivery and measurement such as diversity of focus, the range of outcome tools, duration and intensity of intervention and mode of delivery. Moreover, treatment objectives tend to be highly complex and intertwined; although within this review articles have been categorised with respect to their primary outcome measure, findings and their implications are often of relevance to multiple fields of expertise.

Despite these considerations, Table 11 below provides a somewhat crude categorisation of efficacy by subject area where 'green' represents largely positive results, 'amber' represents mixed results and 'red' indicates little or no evidence of efficacy. Again, to avoid 'double-counting' Table 11 offers a classification of unique studies only; Loewy (2015) and Schreier et al. (2005) which offered re-examinations of original studies, have been excluded.

Table 11: Broad categorisation of findings by subject area

	Art Therapy	Music Therapy
Adoption		
Attachment: Infants and Children with Medical Conditions or Health Issues		Ettenberger, Odell-Miller, Rojas Cárdenas, Serrano, Parker, & Llanos (2016)
		Schlez, Litmanovitz, Bauer, Dolfin, Regev & Arnon (2011)
		Teckenberg-Jansson, Huutilainen, Pölkki Lipsanen & Järvenpää (2011)
		Vianna, Barbosa, Albelino & Cunha (2011)
		Del Olmo, Garrido & Tarrío (2010)
		Del Olmo, Tarrío, Garrido and Marina (2015)
		Loewy, Stewart, Dassler, Tesley & Homel (2013)
		Malloch et al. (2012)
Attachment: Vulnerable Families	Lee & Peng (2017)	Yang (2016)
		Nicholson, Berthelsen, Abad, Williams & Bradley (2008)
Anxiety		Nicholson, Berthelsen, Abad, Williams & Bradley (2010)
		Jacobsen, McKinney & Holck (2014)
		Goldbeck & Ellerkamp (2012)
Grief & Bereavement		Hilliard (2001)
		Dalton & Krout (2006)
		Hilliard (2007)
Trauma	Lyshak-Stelzer, Singer, St John, & Chemtob, (2011)	
	Pifalo (2006)	
	Pretorius & Pfifer (2010)	
	Chapman, Morabito, Ladakakos, Schreier & Knudson (2001)	
Behavioural & Social Interaction Difficulties	Saunders & Saunders (2000)	Gold, Wigram, Voracek (2007)
	Khadar, Babapour & Sabourimoghaddam (2013)	Porter et al. (2011)
	Hashemian & Jarahi (2014)	Chong & Kim (2010)
	Alavinezhad, Mousavi and Sohrabi (2014)	Rickson and Watkins (2003)
	Bazargan & Pakdaman (2016)	Rickson (2006)
		Choi, Lee & Lee's (2008)

		Cobett (2016)
		Lim, Miller and Ruiz (2014)
		Hashemian, Masgoogh & Jarahi (2015)
		Maddah, Ebrahim & Sodagar (2014)
Concentration & Learning Problems	Regev & Guttman (2005)	Duffy & Fuller (2000)
	Freilich & Shechtman (2010)	
ASD	Epp (2008)	LaGasse (2014)
		Kim, Wigram & Gold (2008)
		Thompson, McFerran, and Gold's (2013)
		Kim, Wigram & Gold (2009)
		Ghasemtabar et al. (2015)
		Gattino, Riesgo, Longo, Leite, and Faccini (2011)
		Lim & Draper (2011)
		Oldfield (2006)
		Iseri, Guney, Guvenc & Sener (2014)
TOTAL	13 Studies	36 studies

Most quantitative evidence relates to music therapy and attachment with vulnerable infants (10 studies), behavioural and social interaction difficulties (10) and ASD (9 studies). Encouragingly, six of the nine studies (67%) exploring ASD demonstrate largely positive results with two identifying partially favourable results. Only Oldfield (2006) was unable to identify any notable signs of efficacy. At face value perhaps this area of interest represents the most encouraging picture in terms of the number of studies and outcomes. However, it should not be overlooked that the largest sample size was 27 participants (Ghasemtabar et al., 2015). It should also be borne in mind that ASD is an overarching condition made up of five pervasive developmental disorders and does not represent a single diagnosis. Therefore it is perhaps to be expected that more studies have been undertaken in this vast area, albeit it does not explain the comparative absence of research into art therapy.

High proportions of studies relating to attachment and behavioural and social difficulties produced (mainly) positive results. Five out of the 12 studies (41%) exploring music therapy and attachment demonstrated mainly positive findings with the remaining five studies offering more ambiguous results. Importantly however, all of these studies were able to identify positive results to a greater or lesser degree; no ASD studies fell within the 'red' category. In turn, five of the ten (50%) studies relating to behavioural issues identified positive findings. However Porter et al. (2011)'s study is arguably the most robust of all and he identified somewhat mixed findings.

Fewer studies (5) were identified that explored the impact of art therapy as a treatment for children with behavioural issues, but collectively they also showed art therapy to have a largely positive effect. Four of the five studies demonstrated largely favourable results, with only Barzargan et al. (2016) showing mixed results. That said, the unsystematised approach deployed by Saunders and Saunders' (2000) and the lack of detail provided in the Iranian studies raises serious issues about the reliability of these findings. In contrast, studies exploring the impact of music therapy with children with behavioural issues generated less positive results, but one can have greater confidence in the methodologies used by the likes of Porter et al. (2011).

Only three studies could be identified which explored the efficacy of art and music therapy with children with learning difficulties and overall the available evidence is weak. Results from all three studies were somewhat disappointing with Freilich & Shechtman (2010) and reporting somewhat inconclusive results regarding the impact of art therapy and Regev & Guttmann (2005) were unable to find any positive outcomes. Meanwhile, Duffy (2008) was unable to demonstrate any positive effect with respect to music therapy.

If the weight of evidence is to be considered in terms of quantity, no studies were identified that explored the impact of music or art therapy with populations of adopted children. In turn, just two single studies investigating music therapy was found in relation to attachment (Nicholson et al., 2008) and anxiety (Goldbeck &

Ellerkamp, 2012). Arguably therefore, these three respective areas represent the scantiest evidence bases even though Nicholson et al. (2008) was able to demonstrate positive results.

12.3 Recommendations

There is need for further research to be undertaken which explores the efficacy of music and art therapies with vulnerable children. It is still unclear which types of children benefit most from art and music therapies and which are the most effective modes of delivery. Positively, in recent years, there has been increased emphasis in both disciplines on the importance of collating meaningful evidence that can be used to demonstrate efficacy. Ideally efforts should be undertaken in the UK to increase transferability of findings and the validity of the research findings within a domestic setting.

It is recommended that researchers investigate the impact of existing, well-established programmes. As discussed in Chapter 8, the renowned *'Sing and Grow'* programme is now run across the UK, and Essex County Council have made commendable early efforts to evaluate the impact of the intervention on participating parents and their children. The structured and standardised nature of the programme would lend itself to a relatively easy means of generating a large cross-country sample base. Moreover, the process would be relatively cost-efficient not least owing to the pre-defined nature of the intervention but also given the opportunity for pooling of the resources and materials. If providers consent, pre and post measures could be captured systematically using common measurement tools and this would facilitate comparison across regions, demographics, socio-economic factors and other subgroups which are so often hard to analyse owing to small sample size.

To facilitate such endeavours, it would be extremely beneficial for local and national networks to be established and developed to facilitate greater collaborative working and the sharing of ideas. The BAAT and the BAMT could potentially consider orchestrating events to promote and reaffirm the value of research. For instance, Nordoff-Robbins has recently published a comprehensive list of published qualitative and quantitative evidence which warrants extensive promotion to garner interest and highlight the importance of gathering evidence. Whilst from a methodological perspective RCTs arguably represent the most rigorous form of statistical research, at time of austerity, it is likely to be more challenging than ever to secure financial backing for such ventures. Therefore it is just as important for more cost-effective 'low-key' pre and post intervention measures to be captured systematically and routinely by providers as and when therapy is delivered.

Beyond capitalising on these 'quick wins', given the paucity of rigorous quantitative research, it would be advisable for organisations responsible for the provision of art and music therapy to prioritise which areas demand research most urgently. It is likely that there will be debate as to which diagnoses, populations and modes of

therapy should have precedence and efforts to formulate a clear strategy may result in the identification of several priority areas. Nevertheless, it is probable that such discussions will generate helpful and productive discourse, ultimately beneficial to the professions as a whole.

It is also suggested that, where appropriate, mixed methodologies are utilised to offer the most comprehensive analysis. Although this review focuses solely on quantitative evidence, there is considerable value in qualitative work. It is of interest that of all the studies within this review, only three (Cobbett, 2016; Derrington, 2013; Thompson et al. 2013) incorporate qualitative elements into their work. There are many benefits to adopting a mixed method approach, but perhaps within this context one of the key advantages of conducting qualitative work is that it can offer insight into why results have been disappointing or failed to corroborate research hypotheses. It is likely that Chapman et al. (2001), Rickson & Watkins (2003), Rickson (2006) and Duffy and Fuller (2000)'s research would have benefited from qualitative follow up with parents and/or therapists to understand why their studies failed to deliver positive results. This insight could then be used to shape the hypothesis which could be tested in future research. Indeed, many of the other more positive studies included with this review also fail to discuss the proportion of participants that did not exhibit improvement. Qualitative findings could equally be helpful to explain the difference in intervention effect between different groups of people.

It is also advisable that future studies carefully consider the use of outcome measure to avoid the pitfall made by Chapman et al (2001) who retrospectively claimed that the PTSD-I was not sensitive enough to measure improvements in trauma related symptoms. On this note, Dalton & Krout (2006) should be commended in their endeavour to develop a bespoke instrument for measuring the impact of music therapy as an intervention for bereaved children. The more fitting and helpful tools available to therapists, the more likely they are to be deployed in practice.

Finally, it is vital that practitioners understand the value of research and keep up-to-date with new evidence. Teaching research methods is a requirement of all arts therapy training programmes in the UK and an ability to 'assure the quality of their practice' is a standard of proficiency for all practitioners (HCPC, 2013).

Organisations should seek to embed the collection of pre and post measures as standard procedure so that effective methods can develop and be implemented in potential research projects which, in relation to others, will support and shape the future of practice.

13 Appendices

Appendix A: Overview of Scientific Maryland Scale

The five levels on the Scientific Maryland Scale are classified by:

Level 1: Observed correlation between an intervention and outcomes at a single point in time. A study that only measured the impact of the service using a questionnaire at the end of the intervention would fall into this level.

Level 2: Temporal sequence between the intervention and the outcome clearly observed; or the presence of a comparison group that cannot be demonstrated to be comparable. A study that measured the outcomes of people who used a service before it was set up and after it finished would fit into this level.

Level 3: A comparison between two or more comparable units of analysis, one with and one without the intervention. A matched-area design using two locations in the UK would fit into this category if the individuals in the research and the areas themselves were comparable.

Level 4: Comparison between multiple units with and without the intervention, controlling for other factors or using comparison units that evidence only minor differences. A method such as propensity score matching, that used statistical techniques to ensure that the programme and comparison groups were similar would fall into this category.

Level 5: Random assignment and analysis of comparable units to intervention and control groups. A well conducted Randomised Controlled Trial fits into this category.

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