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Music as an Antidepressant: Exploring the Validity of Music Therapy as a Treatment for Depression

Sonia Vallentin
Durham University Undergraduate

ABSTRACT

The British Association for Music Therapy defines music therapy as "an established psychological clinical intervention" that can "draw upon the innate qualities of music to support people of all ages and abilities and at all stages of life" (Bamt.org, 2018). Whilst assisting a wide array of patients, one of the main uses of music therapy has become mental health wellbeing and its validity as a treatment for mental health problems has been largely supported in research and literature in the past few decades. To provide a clear and critical evaluation, this particular essay will focus primarily on the effects music therapy has on depression. Music therapy as a practice has been increasing, but there are still gaps within research regarding how effective it actually is as a means of treatment in comparison to Treatments As Usual (TAU) such as antidepressants or Cognitive Behavioural Therapy (CBT). Understanding music therapy and the position it has in terms of treatment for depression is essential to providing the most effective aid for the increasing global issue of mental health illness. Music therapy does contribute towards aiding depression but the position of music therapy as a standard form of treatment is still in question.

1. UNDERSTANDING MUSIC THERAPY

To arrive at a conclusion with regards to how valid music therapy is for treating depression, a greater understanding of music therapy must be reached. Music therapy is a practice that was introduced professionally in America in the 1940s and has been growing as a practice ever since. The basis of music therapy (particularly for depression and other mental health illnesses such as anxiety), is that music has the power to stimulate and activate signal pathways, thus potentially modulating neurotransmitters (Castillo-Pérez et al., 2010). This is how a depressed patient might feel their symptoms diminish and their mood elevate, eventually leading to a potential recovery. This elevated mood has been thought to be linked to our 'pleasure and reward' system, as cerebral blood flow increases and decreases as one would expect when exposed to stimuli such as food and sex (Blood and Zatorre, 2001). Music has possible effects on both our neural pathways and blood flow and these effects can potentially rectify symptoms in various diseases that involve DA (brain dopamine) dysfunction, such as depression (Sutoo and Akiyama, 2004, p. 257). This has also been supported by a variety of other studies that demonstrate a reduction in anxiety and heart rate due to relaxing music (Knight and Rickard, 2001; Smolen, Topp and Singer, 2002; Chafin et al., 2004). These studies therefore imply that through a powerful influence upon our brains and blood pressure, music can assist with mental wellbeing.

The structure of a music therapy session is usually dependent on the patient and is either practiced in individual or group sessions. Individual sessions tend to be for children or those that struggle with communication. During a session, anecdotal examples are given where the patient and therapist begin to have a "shared musical experience", becoming more of a "partnership in the music" (Bunt and Stige, 2014, p. 19). Individual sessions allow patients to communicate through music created between them and the therapist. Group sessions differ slightly and are designed for a variety of reasons such as developing social techniques, promoting altruism, and installing hope (Bunt and Stige, 2014, pp. 26-27). Within the parameters of individual and group sessions, the different activities that can occur during these sessions are also varied. One notable technique is that of clinical improvisation. This is a standard practice and has many variations that all depend on each patient's circumstances. These variations include: song improvisation, body improvisation, instrumental referential (where an improvisation is made in reference to a musical idea), conducted improvisation, etc. (Bruscia, 1987). Another music therapy model is called Neurologic Music Therapy (NMT). This is an approach based upon neuroscience and studies what the brain does with and without music. Music therapy also can be used with guided imagery to evoke mental images that simulate or re-create sensory perception, (Kosslyn, Ganis and Thompson, 2001). Therefore, there is not one technique used in music therapy, but rather an array of approaches used depending on the therapist and the patient.

With each of these techniques, anecdotal accounts demonstrate that a positive effect can be found in patients. Indeed, when looking at music therapy in the context of psychiatry, Odell-Miller states that the question should not be, "Does music therapy work?", but rather, "What are the benefits and outcomes?" and "How are these the same as, or different to, other related forms of treatment in a particular service?" (Odell-Miller, 1999, p. 138). Music therapy does produce successful results in patients, but whether these results are strong enough for it to have a place in standard treatment specifically for depression, is the question at present.

2. MUSIC THERAPY IN THE CONTEXT OF TREATMENT AS USUAL

Having defined music therapy, the term, 'valid treatment', must be addressed in the broader context of treatments for depression in order to come to a satisfactory and clear

conclusion. This will be addressed through understanding and reviewing the currently expected forms of treatment. At present, the two most accepted and practiced types of treatment for depression are medication (antidepressants) and psychological treatments, most notably Cognitive Behavioural Therapy (CBT). However, these treatments are not perfect and have been criticised in the past. In 2008, two large papers (Turner et al., 2008; Ioannidis, 2008) were published that questioned the positive effects that antidepressants had on patients. Turner's study discovered that studies with negative results regarding the impact of depression had not been published, meaning that people were falsely told that 91% of antidepressants would have a positive impact, when in actuality this percentage was significantly lower (Turner et al., 2008). The other study by Ioannidis questioned the effectiveness of antidepressants altogether, saying that the short-term benefits are small and in the long term they could potentially be harmful (Ioannidis, 2008). Antidepressants do indeed have a very high relapse rate, with studies showing a 40% relapse rate (Geddes et al., 2003), and other articles stating 80% (Tyrrell and Elliot, 2018). Also, the use of medication can provide an increase in the activity of certain brain chemicals, but this is not the root of the problem. Antidepressants are used only for curing symptoms of depression, not for curing the depression itself, as there is "no scientific evidence that depression is caused by a chemical imbalance which is corrected by antidepressants" (Mind.org.uk, 2018).

As scepticism of the use of medication for depression has increased, alternative forms of psychotherapy, such as CBT, have become more widely practiced. In a large meta-analysis, it was concluded that psychological interventions, most notably Cognitive Behavioural Therapy (CBT), were equally as effective as medication for treating severe depression (Antonuccio, Danton and DeNelsky, 1995). Studies show that CBT can have a significant effect on people with unipolar depression and can be "somewhat superior to antidepressants in the treatment of adult depression" (Butler and others, 2006). However, some recent research also highlights the possible limitations of CBT, drawing attention to its "non-significant effects for behavioral and coping variables" (Chu and Harrison, 2007), whilst others argue that the practice of changing thinking patterns is unethical (McLeod, 2018).

Therefore, it is important to recognise when defining 'valid treatment' that even the most practiced and well-researched forms of treatment have limitations for curing depression. For a treatment such as music therapy to be considered highly valid, it would have to be equally as successful as these already established Treatments As Usual (TAU). As antidepressants have been reported to work successfully on half (Kam, 2012), or even only a third of patients (Tyrrell and Elliot, 2018), for music therapy to be highly valid, it would need to demonstrate approximately this same level of success in patients. However, validity could also be found in the quality of success, rather than quantity. Music therapy could be considered highly valid if treatment appeared to have more long-term benefits than TAU, or if certain patients responded more positively to music therapy than TAU. There are many variables that could imply that music therapy has the potential to be a highly valid form of treatment.

Indeed, there is no perfect model of treatment to aspire towards as each patient responds to treatments differently. The main discussion of this study must therefore be presented: the validity of music therapy within the context of TAU.

3. EVIDENCE FOR MUSIC THERAPY

There are many reasons that suggest music therapy is a highly valid form of treatment. Indeed, from a neuro-scientific standpoint, it has been suggested that there are five factors which contribute towards the effects of music therapy (Koelsch, 2009). These five factors are attention, emotion, cognition, behaviour, and communication. Koelsch notes that emotion is the most important factor when looking specifically at depression, as studies have shown that there can be a modulation of amygdala activity due to music (Blood and Zatorre, 2001). According to Koelsch, this strengthens the "empirical basis for music-therapeutic approaches for the treatment of affective disorders such as depression and pathologic anxiety, because these disorders are partly related to dysfunction of the amygdala" (Koelsch, 2009). Another study has suggested that pleasant classical music can "engage critical neural reward circuitry" in Major Depressive Disorder (MDD) patients, highlighting the importance of this finding because severely depressive patients might have an inability to sustain reward network activation (Jenkins et al., 2018). These studies therefore provide potential evidence-based reasons to support why music therapy has the positive effects that it does and why it could be a highly valued form of treatment. Looking closer at specific studies, the research portrays a clear positive correlation between music therapy and the reduction of depressive symptoms. Perhaps one of the most noteworthy reviews on the effectiveness of music therapy was completed by Maratos, Gold, Wang, and Crawford in 2008. This study suggested that music therapy improved depressed patients' mood if used in addition to standard care such as Cognitive Behavioural Therapy, as four out of the five studies showed a decrease in depressive symptoms (Maratos et al., 2008). A more recent review by Leubner and Hinterberger (2017) evaluated 26 studies and also found music therapy to improve depressive patients more than their comparative control groups. It must also be highlighted that articles have been published that suggest that music therapy may increase responsiveness to antidepressant medications (Ulbricht, 2013) however no such studies have been found to confirm this.

Music therapy also appears effective for a large and varied demographic. Studies of older patients (Hanser and Thompson, 1994), females with breast cancer (Li et al., 2011), and patients with dementia (Chu et al., 2013), have all proven to be effective. Music therapy for women with breast cancer was effective enough to reduce the duration of hospital stay and the study concluded that, "it is worthy of applying music therapy as an alternative way of nursing intervention in clinical nursing process of caring for female patients with breast cancer" (Li et al., 2011). Between these studies, it is

evident that current research on music therapy as a treatment for depression proves to be consistently effective in regard to improving mood.

The use of music in hospital environments has been increasing as studies suggest that, "sound conveys meaningful information that is positive for both patients and nurses" (Iyendo, 2016), and that music in mental health waiting rooms can make patients, "more satisfied" (Waldon and Thom, 2015). Indeed, composers such as Brian Eno have dedicated works specifically towards hospitals with the intention of providing music therapy and enhancing a calm mood. Eno believes that his generative and 'discreet' music "doesn't try to grab your attention, but instead invites you into itself" (Eno quoted in Cormier, 2017), thus providing reflective relaxation for depressive patients. Carl Gustav Jung, a leading psychiatrist and psychoanalyst during the twentieth century, also supported music therapy after attending a music therapy session with Dorinda Hawk Hitchcock. He said:

> This opens up whole new areas of research I'd never dreamed of. Because of what you have shown me this afternoon- not just what you have said but what I have actually felt and experienced, I feel that from now on music should be an essential part of every analysis. This reaches the deep archetypal material that we can only sometimes reach in our analytical work with patients. (Jung quoted in Jensen, 1984, p. 31)

The concept that music can reach something that words cannot has since reoccurred in many music therapy settings. In a group therapy session, a client suffering from both anxiety and depression said that music therapy makes him feel understood and that "areas can be hidden in psychotherapy, and/or defended against, but you can't do that in music" (Odell-Miller, 1999, p. 132). This separation from other therapies is important as it potentially demonstrates an area for treating depression that well-established therapies such as CBT have not yet successfully achieved. Indeed, music therapists have stated that "both client and therapist are more often than not active as participants in the interactive music therapy process" and that this "immediately separates the actively involved music therapists from the more traditional passive role of the analyst in most schools of psychoanalysis" (Bunt and Stige, 2014, p. 38). It would appear that music therapy provides a deeper and more natural form of expression for the client than can sometimes be achieved merely through words.

Looking at recent research that has been completed in light of this, there has been one study that compared music therapy to psychotherapy treatment. Patients were asked to practice music therapy for fifty minutes every day for eight weeks and once the study was over, "the music therapy group had less depressive symptoms than the psychotherapy group" (Castillo-Pérez et al., 2010). They stated that music therapy was an effective use of treatment for patients with low or moderate levels of depression (as this was the only category of patients that were reviewed).

Whilst evidence demonstrates that music therapy alone can be an effective form of treatment, further studies have demonstrated that the greatest positive impact can be achieved through combining music therapy with psychotherapy. Indeed, in one study by Dingle, Gleadhill, and Baker (2008), the results were extremely positive for music therapy, showing that patients who had music therapy as well as psychotherapy treatment improved much more significantly than those who did not participate in the music therapy sessions. The study concluded that "although this might detract from the importance of music therapy as a practice in its own right, it certainly does highlight its importance if paired with CBT" (Dingle, Gleadhill and Baker, 2008). The positive effect of music therapy in addition to Treatment As Usual has since been supported by a more recent study, further reinforcing its extent of validity (Aalbers et al., 2017).

Another point that must be acknowledged when determining music therapy as a highly valid form of treatment is that there are no clear disadvantages or side effects. This is crucial when comparing to treatments such as antidepressants which have been reported to have side effects of sexual dysfunction, gastrointestinal effects, insomnia (Khawam, Laurencic & Malone, 2006), weight gain (Bet et al., 2013), and cardiovascular toxicity which can lead to life-threatening arrhythmia (Pacher and Kecskemeti, 2004). Music therapy can be extended in validity simply due to its lack of harmful side effects when compared to treatments such as antidepressants.

Therefore, the extent of validity for music therapy would appear to be substantial as studies have continuously found it to be a safe treatment that reduces depressive symptoms in a wide demographic.

4. LIMITATIONS OF MUSIC THERAPY

To counter-argue these studies it must be acknowledged that there are also limitations to the extent of validity of music therapy as a treatment for depression. The notion that music can heal mental illness is often criticised for being heavily romanticised and not entirely practical. Indeed, studies have been found to suggest that music therapy has a "negligible effect on symptoms of anxiety and depression" (Trimmer et al., 2017) or no effect at all (Zerhusen, Boyle and Wilson, 1995). A critical evaluation of music therapy has been provided by Kenneth Aigen portraying a concern of exaggerated effectiveness in overall research. Indeed, his evaluation criticises music therapy's "narrow understandings of the nature of science, restrictive notions of evidence, methodological issues in the randomized controlled trial...and the potentially corrupting effect of commercial influences in research" (Aigen, 2015). Indeed, in support of Aigen, the lack of sufficient research on the effects of music therapy is the first limitation that must be reviewed. Although music therapy has become a substantial practice in recent decades, there are still very few studies in comparison to other forms of treatments such as antidepressants and CBT. Koelsch also acknowledges this and states that "studies fulfilling the standards of evidence-based medicine (controlled, randomized, blind trials with experimental and control

groups) are required to provide convincing evidence for beneficial effects of music therapy on depression" (Koelsch, 2009). The general consensus regarding music therapy research highlights the importance of further studies with larger sample sizes being carried out (Erkkilä et al., 2008). The lack of sufficient research is even more pressing as research that has been done, commonly demonstrates that the "methodological quality of the studies [are] generally poor and the study results could not be validated or pooled for further analyses" (Vink et al., 2003). Another study observed that "most studies [on music therapy] met criteria for the lowest level of evidence" (Silverman, 2010). Some have even argued that it is unethical to practice music therapy when we do not fully understand it and have not acquired sufficient evidence (Witkowski and Zatonski, 2015). Therefore, to improve this lack of research, Aigen stresses that music therapists would have to document their methods and findings much more precisely to strengthen literature on the topic. This would also ensure that the ways that music therapists practiced would be improved upon and a more rigorous and critical approach would ensue (Aigen, 2015). Clearly it is challenging to be confident in music therapy's validity when there is so little evidence, and the evidence which has been collected to date is deemed to be scientifically weak.

The second limitation that potentially reduces the extent of validity regarding music therapy is that it is not as effective a treatment as other Treatments As Usual. Indeed, looking back at studies mentioned previously, there are examples where other forms of therapy worked equally as well as music therapy. The clearest example of this was Li's study of female patients with breast cancer. Indeed, both music therapy and massage therapy were used and provided the same benefits (Li et al., 2011). This suggests that music therapy in itself might not be particularly different to other creative therapies, such as art and massage therapy. Music therapy treatment has also been reported to only provide short-term beneficial effects for patients (Aalbers et al., 2017) which could potentially diminish its value as a practice. With patients suffering from depression, some treatments, such as antidepressants are used for at least six months, whereas music therapy could sometimes only be one session and the benefits of music therapy would therefore not be apparent.

Another crucial argument that has already been mentioned is that music therapy appears to work best when combined with a more usual form of therapy, such as CBT (Castillo-Pérez et al., 2010; Dingle, Gleadhill and Baker, 2008). As Dingle, Gleadhill and Baker acknowledged in their study, this would "detract from the extent of validity of music therapy in its own right", suggesting that it is not as valid a form a treatment as CBT, but rather, a means of treatment to help enhance the benefits of CBT (Dingle, Gleadhill and Baker, 2008). Castillo-Pérez and others in his study also suggest that, not only should music therapy be paired with CBT, but that it has not been studied on patients with severe depression, suggesting that music therapy might only be effective for those with low or moderate levels of depression (Castillo-Pérez et al., 2010).

The fourth limitation is that, although music therapy has no found side effects, music therapists cannot say that music therapy is never harmful. Indeed, the delicacy of any therapy treatment would mean that "even highly qualified music therapists might do something incorrect, sometimes due to a lack of knowledge (of the latest research results), sometimes out of counter-transference, or because patients do not respond to the music therapy as expected" (Hakvoort, 2014). Although there are no physical side effects, such as those that occur when taking antidepressants, this does not mean that music therapy could not potentially be harmful. It would be illogical to argue that a harmful side effect is only one which can be perceived and measured, especially when dealing with mental health issues such as depression. Although health issues such as arrhythmia or insomnia would most likely not occur due to music therapy, there is no guarantee that music therapy will not be the cause of greater harm for specific patients, and therefore it cannot be said to be a treatment that will work for everyone.

The final, and perhaps most intriguing limitation is that there are potentially no negative studies on music therapy that have been allowed to be published. As previously acknowledged, Aigen points to "the potentially corrupting effect of commercial influences in research" (Aigen, 2015) and Hakvoort supports this with her own accounts, stating that "I had to change texts (or delete them) if I published a 'negative' result on music therapy for certain journals" (Hakvoort, 2014). This is a significant concern as doubt must therefore be present in all available research that has been used to evaluate the current standings on music therapy research. If negative findings on music therapy are not available then an unfair evaluation will be made, portraying the success and exaggerated extent of validity in regard to music therapy being used as a form of usual treatment. Finding research that suggests any negative results regarding music therapy has been challenging and there are clearly positive studies that dominate current research. Therefore, for any concluding evaluation to be made, it would appear that it unfortunately cannot be entirely accurate or reliable due to the possibly biased state of research presently available.

5. EVALUATION AND ENSURING GREATEST EFFECTIVENESS

Having considered the overall research of music therapy for depression, its benefits and limitations can now be evaluated within the context of current Treatments As Usual and an understanding of its most valid settings can be determined.

There is no doubt that music therapy is a valid treatment, however, it appears to be most valid within specific clinical settings. Addressing the aforementioned studies, it has been suggested that music therapy works effectively in hospital environments when music is played to patients suffering from depression alongside other ailments (Li et al., 2011; Chu et al., 2013). Studies acknowledge that music listening enhances mood (Maratos et al., 2008), improves communication and function (Field, 1998), and can shorten hospital stay (Li et al., 2011). Based on Castillo-Pérez and others research (Castillo-

Pérez et al., 2010), hospitals could invest in scheduled classical music sessions where patients are exposed to music listening on a daily basis. Music listening therapy could therefore be a highly feasible and cost-effective way to enhance positive moods within hospitalised patients.

The particular role of a music therapist for treating depression directly has also proven to be valid. Music therapy appears to be most effective when paired alongside psychotherapy (Maratos et al., 2008) and could potentially be even more beneficial than the already established forms of psychotherapy (Castillo-Pérez et al., 2010). However, a significant amount of research must be done before music therapy could be classified as a TAU as Castillo-Pérez's study (2010) is the only known study to suggest that music therapy provides greater positive results than psychotherapy. Therefore, currently it would seem logical to have music therapy used alongside TAU such as CBT, and monitor these results to further test current research.

With regards to which particular depressive patients might be most suited to music therapy, research implies that any level of depression, whether mild, moderate, or severe, can be helped (Castillo-Pérez et al., 2010; Jenkins et al., 2018). Interestingly, in terms of reducing depression in hospitalised patients, elderly patients improve the most when exposed to music listening therapy (Leubner and Hinterberger, 2017; (Gök Ugur et al., 2016) and this should be explored in settings outside of hospitals, such as elderly care homes.

In terms of style of music therapy, research suggests that the longer the treatment, the more effective the results will be, as an increase in mood and greater emotional stability can be found over a longer period of time (Gold et al., 2009). For depression, music listening appears to be the most used form of music therapy as Leubner and Hinterberger (2017) found 79% of studies used CDs or live music whereas only 46% of studies could be found to engage depressive patients through active singing, playing or improvisation. However, this does not necessarily prove that music listening is more effective, but merely demonstrates that it currently is the most used form of music therapy. Likewise, group music therapy sessions for depression seem to be most common as very few studies have been found where depressive patients have private music therapy sessions. Leubner and Hinterberger (2017) provide the only researched comparison between group and private sessions stating that "results indicated a slightly better outcome for those [group] cases". Although this is very limited evidence, it would not be surprising that a social and creative atmosphere would be more stimulating than a one on one session for a depressive patient.

Therefore, for now it would appear that music therapy, whether listening or practical, would be most effective when used regularly over a long period of time, within a group environment and paired with another established form of treatment. At this point in time music therapy cannot be considered reliable enough to be classed as a form of Treatment As Usual as there is only one study that out-rightly suggests that music therapy is more beneficial than psychotherapy (Castillo-Pérez et al., 2010) and other studies oppose this (Trimmer et al., 2017).

6. AREAS FOR FURTHER STUDY

Although a place for music therapy has been found, this evaluation must acknowledge that further steps need to be taken to confirm and improve its position in a clinical environment. This current standing of limited research has been noted by many such as Koelsch, who states that "there is a lack of methodologically sound studies on beneficial effects of music therapy on individuals suffering from depression" and that "it is our challenge for the next decade to change this" (Koelsch, 2009). Having said this in 2009, the research that has occurred in the past ten years is still disappointing, with researchers admitting only last year that "we do not know whether one form of music therapy is better than another" due to "the small numbers of identified studies" (Aalbers et al., 2017).

Perhaps the most pressing area for research is the confirmation of music therapy as a complimentary form of therapy. Other creative therapies such as art therapy have also been shown to have positive effects on depressive patients (Zubala, MacIntyre and Karkou, 2016) and comparing the effects of these therapies would be essential to understanding if there are differences in these creative treatments.

What is most interesting and potentially threatening for all forms of treatment is that there is a possibility that any two forms of treatment might be more effective than one, implying that specific types of therapy are irrelevant. Indeed, a study has discovered that psychotherapy and antidepressant medication combined had a more positive effect than just one form of treatment, although individually they had relatively the same impact (Khan, Faucett, Lichtenberg, Kirsch & Brown, 2012). This study then suggested that the means of treatment might be solely down to a patient's preference or practicality (in terms of cost or regularity of treatment) and that the actual treatment itself is potentially not that significant, as long as two types of treatment are used. In fact, multiple studies seem to have come to the conclusion that more than one form of treatment is advised (Hollon, Thase and Markowitz, 2002; Dingle, Gleadhill and Baker, 2008; Castillo-Pérez et al., 2010). This would suggest that all types of treatment for depression should be paired with another form of treatment in order to ensure the greatest efficient recovery. Although research certainly does highlight that music therapy as a complementary treatment is effective, this could detract from the significance of music therapy itself if any forms of treatment, if paired together, are more successful. A significant amount of research must be done in regard to all forms of treatment to fully understand how depressive treatments can be affected and improved with this knowledge.

7. CONCLUSION

In conclusion, evaluating the validity of a treatment and prescribing it to a depressive patient is extremely complex and

must be done with great care. There are several causes to this mental illness and each individual will experience it uniquely, therefore making a standard form of treatment difficult to prescribe. Given that there are still significant gaps within research, this evaluation cannot state that music therapy is as valid as already established treatments such as antidepressants and CBT. However, this evaluation has demonstrated that there are many different settings in which music therapy certainly can provide benefits for depressive patients and that a greater potential in validity could be achieved if further research can discover its ideal clinical environment. In order to provide the most effective treatment for such a complex mental illness we should "expand our ideas of an antidepressant as anything that reduces depression" (Hari, 2018, p. 33), and music therapy certainly does this.

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