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Music Therapy as a supporting method in the treatment of bipolar disorder

Oliwia Brygida Woszczyńska

ORCID: 0009-0001-7724-544X

ob.woszczynska@gmail.com

Independent Public Health Care of the Ministry of the Internal Affairs, ul. Kartuska 4/6, 80-104 Gdańsk, Poland

Agnieszka Ewelina Wojciechowska

ORCID: 0009-0009-3344-9115

ine.wojciechowska@gmail.com

Cardinal Stefan Wyszyński Province Specialist Hospital in Lublin, ul. al. Kraśnicka 100, 20-718 Lublin

Marek Jarosław Molenda
ORCID 0009-0002-7900-4970
markollo1998@gmail.com
4th Clinical University Hospital in Lublin, ul. Kazimierza Jaczewskiego 8, 20-954 Lublin, Poland

Maria Wachowska
ORCID: 0009-0004-2069-9469
maria.wac97@gmail.com
Podhale Specialist Hospital named after St John Paul II in Nowy Targ, ul. Szpitalna 14, 34-400 Nowy Targ, Poland

Marta Szymura
ORCID: 0009-0000-2776-8974
martaszymura3581@gmail.com
Independent Public Healtcare Center No.1 in Rzeszów, ul. Tadeusza Czackiego 2 35-051 Rzeszów

Mateusz Paniak
ORCID: 0009-0009-0110-9634
mateuszpaniak.mp@gmail.com
Cardinal Stefan Wyszyński Province Specialist Hospital in Lublin, ul. al. Kraśnicka 100, 20-718 Lublin

Mateusz Romaniuk
ORCID: 0009-0007-1486-5522
mateusz.romaniuk.44@gmail.com
Independent Public Health Care Center of the Polish Ministry of Interior and Administration in Lublin, ul. Grenadierów 3, 20-331 Lublin, Poland

Michał Brunon Krawczyk
ORCID: 0009-0008-9697-6548
michalkrawczyk@gumed.edu.pl
Pediatric Cardiac Surgery Department of Mikołaj Kopernik Hospital in Gdańsk, Gdańsk, Poland

Paweł Maciej Rycąbel
ORCID: 0009-0008-4039-8312
pawelrycabel@gmail.com
Independent Public Health Care Center of the Polish Ministry of Interior and Administration in Lublin, ul. Grenadierów 3, 20-331 Lublin, Poland

Wojciech Jan Sowiński
ORCID: 0000-0002-2267-4773
wojciechjansowinski@gmail.com
1st Military Clinical Hospital with the Outpatient Clinic, Lublin, Poland

Abstract
Bipolar disorder is a mental illness that affects people of all ages and both sexes equally. Psychiatry primarily relies on conventional treatments such as pharmacotherapy, electroconvulsive therapy, and psychotherapy to manage bipolar disorder. However, despite their effectiveness and many benefits, these methods may not always be sufficient—especially in treatment-resistant cases.

Music therapy, an evidence-based therapeutic approach used in psychology, psychiatry, neurology, rehabilitation, and other fields, influences individuals' well-being through active and receptive techniques. The aim of this article is to review available studies and examine the effectiveness of music therapy in the treatment of bipolar disorder. This review explores its role in conjunction with pharmacotherapy, ketamine infusions, and electroconvulsive therapy. Furthermore, the purpose of this article is to assess whether there are enough reliable studies to determine if music therapy is an effective supportive treatment.

Keywords: music therapy, bipolar disease, mental disorders, psychiatry, drug support

1. Introduction

Bipolar disorder (BD) along with depression, is the most commonly diagnosed condition in psychiatry [1]. It affects many people nowadays. According to WHO, in 2019 approximately 0.53% of the global population was affected by this disease. It affects people of all ages—from youths to the elderly—and both sexes equally [2].

According to ICD-11, bipolar and related disorders are defined as episodic mood disorders defined by the occurrence of manic, mixed or hypomanic episodes or symptoms. These episodes typically alternate over the course of these disorders with Depressive episodes or periods of depressive symptoms. ICD-11 differentiates two types of bipolar disorder: Bipolar type I disorder (6A60) and Bipolar type II disorder (6A61). Furthermore, Cyclothymic disorder (6A62), other specified bipolar or related disorders (6A6Y) and Bipolar or related disorders, unspecified (6A6Z) also belong to this category of mood disorders [3].

Bipolar disease may affect many areas of a patient's life, such as social life, family life, career etc. Nowadays, there are some ways of treatment of bipolar disease, mostly based on pharmacotherapy and psychotherapy. In some cases, electroconvulsive therapy or Transcranial magnetic stimulation are also used. However, conventional treatments are sometimes not enough. In response to this issue, there are alternative methods that could be used to support common methods of treatment. One of them is music therapy.

Music has been an indispensable element of humans' life all along. Through the centuries, it was believed that it can influence mental and physical health and humans' well-being [4]. However, for the first time ''music therapy'' as a term was used in 1965 by Paul Nordorff i Clive'a Robbinsa. They used musical improvisation as an instrument of therapeutic process for children with autism [5]. From that time forward, music as a form of therapy is Evidence-Based Practice and is becoming commonly used nowadays.

The aim of the article is to review the published articles from the latest 20 years (2000-2024), which investigated usage of music therapy in psychiatric treatment of bipolar disease and consider whether therapy based on the use of music can be an additional, supporting method of treatment in bipolar and related mental disorders.

2. Methods of treatment

The Department of Psychiatry in Oxford University says that treatment of bipolar disorder conventionally focuses on acute stabilization, in which the goal is to bring patient with mania or depression to a symptomatic recovery with euthymic (stable) mood; and on maintenance, in

which the goals are relapse prevention, reduction of subthreshold symptoms, and enhanced social and occupational functioning. Treatment of both phases of the illness can be complex, because the same treatments that alleviate depression can cause mania, hypomania, or rapid cycling (defined as four or more episodes in 12 months), and the treatments that reduce mania might cause rebound depressive episodes. [6]

Treatment is mostly based on pharmacotherapy and depends on the presenting phase of illness, severity, and patient factors such as prior responses or current medications. [7] However, there are also different methods of treatment, which are mostly used in treatment-resistant bipolar disorder [8].

Moreover, in addition to pharmacotherapy, activities and issues such as nutrition, exercise, coping strategies, and positive attitudes toward good health can be beneficial and affect patients' mental health positively [7].

2.1 Drug Therapy for Patients with Bipolar Disorders

There are three main categories of medicines used in treatment of BD. Salts, atypical antipsychotics (neuroleptics) and anticonvulsants are first-line treatments that should be continued indefinitely because of the risk of patient relapse. Salt - Lithium - is the treatment of choice for classic euphoric mania, which is defined as a predominance of manic symptoms associated with elevated mood (can include irritability) rather than a mixed or depressed state. Atypical antipsychotics such as aripiprazole, asenapine, cariprazine, lurasidone, olanzapine, quetiapine, risperidone, and ziprasidone are effective as an alternative to lithium (in monotherapy) or in combination with these mood stabilizers [9]. Regarding anticonvulsants, carbamazepine, valproic acid and lamotrigine - these three- have strong evidence-based support for use in clinical states of bipolar disorder. Other anticonvulsant drugs investigated in bipolar disorder either have evidence of lack of benefits in bipolar disorder or have been inadequately studied to determine possible effectiveness [10].

Moreover, in acute mania, benzodiazepines (e.g. quetiapine, risperidone) and haloperidol can also be used in conjunction with lithium or/and antipsychotics [11].

2.2 Ketamine infusions

Nowadays, many reviews focus on studies that have been conducted to assess the antidepressant efficacy of glutamate modification in mood disorders [12]. Ketamine belongs to this group of medications. Ketamine’s mechanism of action primarily involves modulation of

the glutamatergic system, rather than the monoamine systems typically targeted by conventional antidepressants [13].

As an updated systematic review concludes, ketamine is an experimental, innovative treatment for BD with rapid action [13]. Moreover, it might have significant anti-suicidal effects in select BD patients presenting with suicidality [14]. Dr. Alina Wilkowska et al. also finds different benefits of using ketamine, such as rapid antidepressant effects (both, after using low-dose infusion and multiple administration), stimulation of synaptogenesis, acting cia an epigenetic mechanism; possible immunomodulatory role in patients with bipolar disease, who have a predisposition to autoimmune disease, as well as improving gut microbiota composition so that ketamine can mediate antidepressant effect [15]. However, in spite of the effectiveness and benefits of using ketamine, it can cause some side effects. Most commonly observed: : feeling dissociated (separation of mind and body), 'Ego dissolution' (the feeling of "oneness with everything"), dizziness, feeling a bit drunk or lightheaded, feeling tired for the rest of the day after treatment, altered perception, things "look peculiar" or sound different, nausea or vomiting, anxiety, headache, tinnitus, temporary bruising and increase in blood pressure or a fast heart rate [16].

It must be indicated that ketamine is still an innovative and experimental treatment of BD, which it has not spread and used yet.

2.3 Electroconvulsive therapy

Electroconvulsive therapy (ECT) uses an electric current to create a generalized cerebral seizure. It is done in a patient under intravenous sedation or general anesthesia [17]. ECT is mostly used during depressive episodes during the course of bipolar disorder and it seems to be equally effective for bipolar depression in comparison to unipolar depression [18]. There is almost no data that prove effectiveness of ECT on patients with hypomanic or manic episodes or mixed state [19]. Regarding effectiveness of electroconvulsive therapy for bipolar depression, the study assumes that electroconvulsive therapy was associated with very high response rates - Four of five patients with bipolar depression were responders to electroconvulsive therapy [20]. Therefore, this therapy should be used commonly in the treatment of bipolar disease, however there are not many places where this type of therapy is done. For example, in Poland, according to data published by the Polish Psychiatric Society (Polskie Towarzystwo Psychiatryczne), in 2020, only 21 hospitals offered electroconvulsive therapy [21].

3. Effectiveness of treatment

Above, there are presented most commonly used ways of treatment of bipolar disorder. It is recommended and spread all over the world for example by The Diagnostic and Statistical Manual of Mental Illnesses (DSM-5) [22]. However, regarding effectiveness, the most commonly known way of medicine is sometimes not enough to cure this particular disease. In Journal of Psychiatric Practice, it can be read: "An evaluation of the efficacy of any psychiatric medication in maintaining remission is generally based on the percentage of patients who do not experience symptomatic recurrence or prematurely discontinue study treatment because of symptoms" [23].

According to the review that assumes placebo effect in using pharmacotherapy in acute bipolar mania and depression, the placebo response rate in studies of patients with acute mania is substantial (averaging 23%) and in studies of acute bipolar depression the placebo response rate is even higher (averaging 29%) [24].

Moreover, regarding ketamine, there is a study showing that cyclic infusions of ketamine were admittedly associated with greater symptom reduction and adequate tolerability, however, study showed treatment-emergent side effects such as hypomania that was observed in some cases [25].

Furthermore, electroconvulsive therapy or bipolar depression is associated with a very high response rate, however not every patient responds. There are several factors that can influence the results of treatment such as: higher age, absence of comorbid obsessive-compulsive disorder or personality disorder, and less prior pharmacologic treatment [20].

Therefore, while conventional medicine is somehow limited by placebo effects, side effects or unpredictable, variable response, there are other ways of treatment that can be used to support conventional methods and enhance effectiveness of reviving.

4. Music Therapy

Krzysztof Stachyra defines music therapy as a process, in which a qualified music therapist uses music or its elements to revive, improve functioning or support developments of patients with diverse requirements (physical, emotional, mental, social and spiritual). Besides, it is a transdiscipline that integrates many areas of science such as general psychology, music psychology, psychiatry, psychotherapy, medicine, pedagogy, music education, music philosophy, art therapy, and others [5].

According to Galińska, there are four areas that music affects human: psychosomatic (influencing autonomic system) psychological (affecting emotions, cognition, communications and others) psychomotor (mobilizing musculoskeletal system) and pedagogical (influencing psychophysical disabilities and didactic problems of children and youths [26]. In addition to effectiveness in many mental, motor and somatic disorders, this form of therapy is also noninvasive, pleasant and not much expensive.

There are two techniques of music therapy: active and receptive. Active music therapy uses the activating role of music, through singing, improvisation, composing therapeutic songs and dancing. Receptive form of music therapy depends on listening to therapeutic music, music-elicited imagery, music and vibroacoustic therapy, relaxation, techniques redolent of the past by using music [27].

Music therapy can be conducted individually and in the group of patients. Group music therapy is commonly used in psychiatry, rehabilitation and resocialization. This kind of therapy creates community, therefore it can use interpersonal interactions in the group. While individual music therapy can examine a patient's psyche perfunctorily (symptomatically, non-declaratively) or deeply (leading patients to several behaviors) [28].

5. Music Therapy in bipolar disorder

Above, there are some examples of treatments dedicated to bipolar disease that are used in medicine. They are undoubtedly effective and helpful in treatment, but they are also limited by side effects, expensiveness and unpredictable effects. Therefore, music therapy, thanks to its advantages, can be also used as a method, which would not replace conventional methods of treatment, but which would support them, especially because music therapy affects emotionality of bipolar patients more than healthy people [29].

5.1 Medication support

Nowadays, there are studies that represent the influence of music therapy on improving mental health in some psychiatric diseases. For instance, according to one study, patients with mental disorders (involving bipolar disorder), who were experiencing psychotic symptoms, participating in group music therapy represented greater improvement in drug dosage with respect to neuroleptics than those who did not receive group music therapy. Neuroleptics (antipsychotics) are obviously also used in bipolar disorder treatment. However, neither

antidepressants, benzodiazepines and mood stabilizers did not show such a great colleration in this particular study [30].

5.2. Ketamine infusions combined with music therapy sessions

Regarding ketamine, there was a case study that examined two patients suffering from severe bipolar depression. Both underwent first ketamine infusion without music and chose music with posterior infusions. After that, they reported that music significantly improved the tolerance of side effects, thereby reducing distress and facilitating subsequent treatments [31]. Additionally, the other study investigated patients who were listening to music during ketamine infusions and results show that "listening to music during intranasal esketamine therapy appears to be linked to reduced anxiety and lower blood pressure, stable or increased dissociation levels, and improved tolerance for higher doses" [32].

5.3 Music therapy and electroconvulsive therapy

Also, the scientists in one study state: "MT intervention can be used in clinical settings as an adjunct with ECT, to control anxiety and depression in patients receiving ECT. Its effect on improving cognitive functioning is an added advantage as cognitive dysfunction still remains an important side effects of ECT" [33]. Nonetheless, there are no more studies found that could support this statement.

5.4 Music therapy as a prevention of bipolar disorder

Besides, it is suggested that music therapy has the potential to be used in adolescents and young adults as an indicated prevention for individuals who have a higher risk of bipolar disorder and who use an early detection centre [34]. Author suggests that music's influence on prevention of bipolar disorder could be mostly linked to the regulation of emotions [35].

Conclusion

According to the review based on the articles involving experimental methods, case studies and other reviews it can be stated that music therapy could have a positive influence on the treatment of bipolar disorder, and it can support well known methods of treatment such as drugs, ketamine and electroconvulsive therapy. Furthermore, it can protect people at a higher risk of bipolar disorder from the symptoms. However, there are still not enough studies with

large sample sizes that can certainly prove the effect of music therapy on bipolar disease. Moreover, this method cannot be used as a substitute for conventional methods of medicine such as pharmacotherapy, electroconvulsive therapy, and/or psychotherapy. Nonetheless, thanks to cheapness, availability and lack of side effects this method of support can be used to help bipolar disease suffering patients.

Statement of the authors' contribution

Conceptualization: Agnieszka Wojciechowska, Marek Molenda, Maria Wachowska, Marta Szymura, Mateusz Paniak, Mateusz Romaniuk, Michał Krawczyk, Oliwia Woszczyńska, Paweł Rycąbel, Wojciech Sowiński

Methodology: Agnieszka Wojciechowska, Marek Molenda, Maria Wachowska, Marta Szymura, Mateusz Paniak, Mateusz Romaniuk, Michał Krawczyk, Oliwia Woszczyńska, Paweł Rycąbel, Wojciech Sowiński

Software: Agnieszka Wojciechowska, Marek Molenda, Maria Wachowska, Marta Szymura, Mateusz Paniak, Mateusz Romaniuk, Michał Krawczyk, Oliwia Woszczyńska, Paweł Rycąbel, Wojciech Sowiński

Check: Agnieszka Wojciechowska, Marek Molenda, Maria Wachowska, Marta Szymura, Mateusz Paniak, Mateusz Romaniuk, Michał Krawczyk, Oliwia Woszczyńska, Paweł Rycąbel, Wojciech Sowiński

Formal analysis: Agnieszka Wojciechowska, Marek Molenda, Maria Wachowska, Marta Szymura, Mateusz Paniak, Mateusz Romaniuk, Michał Krawczyk, Oliwia Woszczyńska, Paweł Rycąbel, Wojciech Sowiński

Investigation: Agnieszka Wojciechowska, Marek Molenda, Maria Wachowska, Marta Szymura, Mateusz Paniak, Mateusz Romaniuk, Michał Krawczyk, Oliwia Woszczyńska, Paweł Rycąbel, Wojciech Sowiński

Resources, data curation: Agnieszka Wojciechowska, Marek Molenda, Maria Wachowska, Marta Szymura, Mateusz Paniak, Mateusz Romaniuk, Michał Krawczyk, Oliwia Woszczyńska, Paweł Rycąbel, Wojciech Sowiński

Writing - rough preparation: Agnieszka Wojciechowska, Marek Molenda, Maria Wachowska, Marta Szymura, Mateusz Paniak, Mateusz Romaniuk, Michał Krawczyk, Oliwia Woszczyńska, Paweł Rycąbel, Wojciech Sowiński

Writing - review and editing: Agnieszka Wojciechowska, Marek Molenda, Maria Wachowska, Marta Szymura, Mateusz Paniak, Mateusz Romaniuk, Michał Krawczyk, Oliwia Woszczyńska, Paweł Rycąbel, Wojciech Sowiński

Visualization: Agnieszka Wojciechowska, Marek Molenda, Maria Wachowska, Marta Szymura, Mateusz Paniak, Mateusz Romaniuk, Michał Krawczyk, Oliwia Woszczyńska, Paweł Rycąbel, Wojciech Sowiński

Supervision: Agnieszka Wojciechowska, Marek Molenda, Maria Wachowska, Marta Szymura, Mateusz Paniak, Mateusz Romaniuk, Michał Krawczyk, Oliwia Woszczyńska, Paweł Rycąbel, Wojciech Sowiński

Project administration: Agnieszka Wojciechowska, Marek Molenda, Maria Wachowska, Marta Szymura, Mateusz Paniak, Mateusz Romaniuk, Michał Krawczyk, Oliwia Woszczyńska, Paweł Rycąbel, Wojciech Sowiński

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