Music and Obsessive-Compulsive Disorder

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Contributor: Hubertus Himmerich

Obsessive-compulsive disorder (OCD) is a severe psychiatric disorder, which can be associated with music-related symptoms. Music may also be used as an adjunct treatment for OCD. Patients with OCD might benefit from music therapy, which includes listening to music.

Keywords: obsessive compulsive disorder ; OCD ; music ; music therapy ; musical obsession ; musical hallucination

1. Obsessive Compulsive Disorder: Symptoms and Diagnosis

The characteristics of obsessive-compulsive disorder (OCD) include repetitions of thoughts, images or impulses, and the engagement of compulsive actions or rituals to alleviate associated anxiety and fear [1]. Obsessions in OCD are defined by the intrusion of thoughts, images, or sounds, which are unwelcome and unavoidable, whereas compulsions are the rule-bound behaviours that one performs to obstruct unwanted obsessions [2]. Additionally, cognitive inflexibility is commonly presented in OCD patients [3]. Patients with OCD experience a significant reduction in their quality of life (QoL) [4] across different cultures, for example Asian [5] and North American [6] cultures.

According to the 5th edition of The Diagnostic and Statistical Manual of Mental Disorder (DSM-V), the diagnosis of OCD is met when there are all four of the following features: the presence of compulsions, obsessions, or both; severe enough to be time-consuming/cause significant distress/significant impairment; the disturbance is not due to physiological effects of a substance or another medical condition; the disturbance is not better explained by the symptoms of other mental disorders [1]. Obsessions and compulsions are defined consistently across the 10th edition of the International Statistical Classification of Diseases (ICD-10) [7] and DSM-V. ICD-11, which has already been released by the World Health Organization (WHO) and will soon replace ICD-10, has many revisions and additions for OCD. First, OCD has been reclassified from “Neurotic, Stressed Related, and Somatoform Disorders” to “Obsessive Compulsive and Related Disorders (OCRD)”, which is similar to DSM-V [1]. Second, the requirement of a 2-week duration of symptoms has been abolished because of the absence of robust data [8]. In parallel with DSM-V, ICD-11 specifiers now include the level of insight [1].

The lifetime prevalence of OCD is estimated to be up to 2% [9]; OCD is ranked sixth in the Global Burden of Disease (GBD) and is associated with a 10-fold increased risk of death from suicide compared to the general population [10][11][12]. Many studies have shown that during adulthood, OCD occurs more frequently in women than men [13][14], although others found the disorder’s prevalence to be higher in boys during childhood [15].

Despite both obsessions and compulsions being distinctive attributes of OCD, some patients mainly present with obsessive thoughts but limited or no compulsive actions [16]. Even though there is some evidence of obsessions appearing as sensory impressions, mostly in visual imagery, research on auditory imagery, such as musical obsession, remains scarce [17]. Nonetheless, this clinical feature of OCD is listed under “miscellaneous obsessions” in the Yale–Brown Obsessive Compulsive Symptom Checklist (Y-BOCS) [18] and defined as the intrusion of musical fragments, sounds, or tunes, inciting anxiety that is tedious to restrain [19]. Roughly one hundred occurrences of musical obsessions have been reported worldwide, predominantly in young adults [19].

2. Music-Related Symptoms in OCD Patients

Many individuals also experience involuntary musical imagery, or “earworms”, which occur when a repetitive piece of music is spontaneously and involuntarily recalled inside the “mind’s ear” [20]. Despite the possibility of disturbances, unlike obsessions, involuntary musical imagery is not ego-dystonic, where one’s behaviours conflict with one’s beliefs [20]. This phenomenon is often observed in the non-psychiatric population [21]. An online survey found that 89.2% of survey responders experienced it weekly, and 33.2% daily [22]. Furthermore, although Sacks [23] and Levitin [24] suggested that

involuntary musical imagery is closely correlated to OCD considering its overlapping characteristics with musical obsession, Negishi and Sekiguchi [21] believe that involuntary musical imagery is not necessarily a symptom of OCD.

Music hallucinations, or musical hallucinations, also count as involuntary musical imagery [25][26]. Auditory hallucinations are defined by the hearing of songs, music, or sounds in an absence of an external musical source [23][27]. However, the affected individual is not aware that the music hallucinations are unreal and only exist within their mind. Musical hallucinations were once regarded as a rare phenomenon. However, recent studies have shown their commonness among the psychiatric population, especially in OCD patients, with a prevalence of up to 41% [28]. The number rises to 50% in individuals with other comorbid mental disorders such as schizophrenia or bipolar disorder [22].

Concerning music hallucinations, the term 'musical pseudohallucination' has often been used despite its controversial definition. Despite the similarity in name, pseudohallucinations are recognised by the affected person as being subjective and unreal. Pseudohallucinations seem to share more standard features with musical obsessions than musical hallucinations [29]. Both phenomena occur in the personal space (inner ears) and independently of one's will. Although obsessions are also experienced from the personal space, Lewis has described three essential features for diagnosing obsessions: subjective compulsion, resistance to them, and the preservation of insight (26). **Table 1** summarises the characteristics of hallucinations, pseudohallucinations, and musical obsession.

Table 1. Characteristics of musical hallucinations, pseudohallucinations and obsessions [30].

Musical Hallucinations	Musical Pseudohallucinations	Musical Obsessions
• Corporeal, complete, sensory-rich; • Projected in external space; • Independent of the subject's will; • No insight that the auditory sensation is subjective and unreal; • No compulsion; • No resistance.	• Imaginary; • Projected in internal space; • Independent of the subject's will; • Have insight that the auditory sensation is subjective and unreal; • No compulsion; • No resistance.	• Figurative, subjective space; • Heard in the past; • No voluntary control; • Associated compulsion possible; • Insight; • Resistance.

OCD symptoms have a significant impact on patients and the life of their families. Compared to some other psychiatric illnesses (e.g., panic disorder and social phobias), individuals with OCD have lower mean QoL scores [31]. Additionally, suicidal thoughts and behaviours are frequent in people with OCD [32]. Apart from the devastating impact of OCD on one's life, more than half of their families/carers report performing rituals together with the patient [33], leading to the development of depression and low QoL in family members and carers [34].

3. Treatments for OCD and Music Therapy

The current treatments for OCD may not always result in a cure, but can be helpful in bringing symptoms under control, alleviating its burden on everyday life and delaying the aggravation of the condition. According to the National Institute for Health and Care Excellence (NICE) guidelines [35], specialist services should directly engage and provide treatments for OCD. Additionally, the information of the disorder, its course, and treatments should be well communicated with the patient's families and carers (34). Psychological and pharmacological approaches are the two main types of treatment for OCD. Medication with selective serotonin reuptake inhibitors (SSRIs) has been preferred to treat OCD, with sertraline most commonly used [36]. Evidence-based psychotherapy, including cognitive behavioural therapy (CBT) with exposure and response prevention and cognitive therapy elements, have been reported to be effective for many individuals with OCD [37]. However, although SSRIs' success rate is up to 60% [38], CBT's efficacy is routinely inconsistent between people. Even the combination of both treatment approaches only reaches up to 70% effectiveness [38]. Thus, additional therapeutic approaches are needed.

Generally, music therapy has shown positive impacts on people with mental health problems. As a catalyst of change, music therapy can reduce the symptoms of various disorders and foster overall well-being [38]. Some studies, for example, Atiwannapat et al. [39], have found that individual or group music therapy, either active or receptive, as an adjunct to

standard medication and psychological treatment, have some effect in reducing depressive scores in major depressive disorder (MDD) [40]. Furthermore, a systematic review by Testa et al. summarised studies that reported improvements in food consumption and symptom reduction in anorexia nervosa patients with the help of listening to classical music and singing [41]. Considering the comorbidity of OCD and other mental disorders (e.g., general anxiety disorders and eating disorders), the therapeutic advantages of music may also be used to alleviate symptoms of OCD or anxious and depressive symptoms in people with OCD [40][41][42][43][44]. Several empirical studies have suggested the benefits of music therapy on OCD. For example, receptive music therapy helped reduce obsessive symptoms with comorbid anxiety and depression [42]. A replication of this research reported similar findings where receptive music therapy was beneficial in easing the seriousness of both obsessive and compulsive symptoms [43]. Furthermore, improvisational music therapy might also alleviate symptoms in OCD patients [44].

There are three different connections between music and OCD: First, the perception of music can appear as a symptom of OCD. Published case reports suggest that these musical obsessions may be treated with SSRIs or a combination of an SSRI with psychotherapy or with an atypical antipsychotic. However, there is no evidence from clinical studies to further substantiate this therapeutic approach; Second, studies regarding the peculiarities of music perception in people with obsessive-compulsive personality traits or OCD have shown an increased desire for harmony and alignment in these people when listening to music; Third, music may have therapeutic potential for people with OCD. However, the level evidence for the use of music listening and music therapy in the treatment of OCD is low, and the specific approaches (active vs. passive) and the settings (group vs. individual therapy; inpatient vs. outpatient) remain unclear.

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