

## Chapter 1

# Music Therapy as an Integrative and Complimentary Treatment for Substance Abuse Withdrawal Symptoms

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First Published **October 28, 2016**

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## Abstract

Substance abuse withdrawal symptoms are often precipitants of relapse. Music therapy is a complementary and integrative psychosocial treatment modality that is often used in substance abuse rehabilitation settings. The purpose of this chapter is to orient readers to music therapy as a complimentary and integrative treatment and briefly summarize music therapy studies targeting substance abuse withdrawal. To date, three randomized controlled studies measuring the impact of music therapy on craving and withdrawal exist. Although results of all three studies did not reach statistical significance, there tended to be between-group mean differences supporting lyric analysis interventions within the temporal limitations of single-session music therapy that is common on detoxification units. As existing published literature indicates that music therapy may function as a non-pharmacological treatment intervention to target traditional addiction-related dependent measures including motivation, emotional expression, and change, music therapy may also function concurrently as a psychosocial treatment to impact substance abuse withdrawal symptoms in adult detoxification settings.

## Keywords

Systematic Review; Music Therapy; Addiction; Substance Abuse; Withdrawal; Craving; Chemical Dependency

Although authors have noted substance abuse withdrawal symptoms constitute ambiguous and subjective constructs [1], these are essential precipitating factors when attempting to explain and understand the relapse phenomenon. Withdrawal from abused substances often results in craving and thus constitutes a predictor of treatment outcome and relapse [2-4]. In fact, due to the interrelation of withdrawal, craving, and relapse, researchers have proposed a Craving Withdrawal Model (CWM) for alcohol dependence, wherein both craving and withdrawal are required for a substance abuse related diagnosis [5]. Other researchers have also found craving to be a principal contributor in substance misuse relapse [6].

In understanding the relapse phenomenon from a cognitive behavioral philosophical orientation, there exists a paired association between various environmental stimuli and the euphoric state resultant of substance abuse that often results in a return to substance misuse [7]. These environmental stimuli can elicit conditional urges to use the substances despite known negative consequences. Therefore, the Conditioned Appetitive Motivational Model of Craving [8] can be used in an attempt to understand the arduous experiences that people in substance abuse recovery have when they return to the environments where they developed their addictions. Moreover, this model recognizes that substance misuse can be maintained and supported via craving and withdrawal symptoms, negative affective states and problems and stressors.

Most people in longer-term treatment for substance use and misuse are no longer actively experiencing acute symptoms of withdrawal or the heightened state of craving resultant of withdrawal. These excruciating symptoms are more characteristic on inpatient detoxification units, wherein the primary treatment focus constitutes a medically supervised detoxification from a substance, be it alcohol, illegal drugs, or prescription medication. Detoxification units are often the first step in recovery but are typically more medically oriented and, as such, there is only minimal focus on addiction-related psychosocial issues through therapy and counseling. However, as patients on detoxification units are frequently experiencing crisis situations, psychosocial treatments and therapy may be ideal. In fact, people experiencing crises are often more receptive and open to new ideas and innovative treatments [9], which may include pharmacological as well as complementary and alternative treatments.

Complementary and alternative medicine, often referred to as CAM, is a purposely-broad term for health- and wellness-based therapies that have not traditionally been associated with conventional Western medicine. The term “complementary” indicates treatments that are used with established medicine whereas “alternative” indicates treatments used in place of conventional medicine. This distinction is consequential as many people in substance abuse detoxification units receive pharmacological interventions to help ease physiological symptoms during the

excruciating withdrawal period. CAM typically focuses on holistic aspects of the person and thus may include physical, emotional, mental and spiritual health. CAM may include mind-body medicine (i.e., meditation, acupuncture, yoga), manipulative and body-based practices (i.e., massage therapy, spinal manipulation), as well as natural products (i.e., herbs, dietary supplements). However, few people in the United States forgo conventional medicine altogether in favor of CAM. Therefore, the term “integrative medicine” is typically more applicable than CAM. Integrative medicine combines or integrates the best of conventional medical care with CAM. In the case of integrative therapies for people on detoxification units, patients could still receive pharmacological interventions to ease withdrawal symptoms but could also participate in a more non-traditional psychosocial treatment to potentially address relapse prevention, sobriety and a substance-free lifestyle. Integrative treatments may also be able to distract patients on detoxification units from withdrawal symptoms and teach them how to cope with their negative physiological and affective states.

Music therapy is a specific type of creative, complementary and integrative therapy that can be defined as the clinical use of music-based interventions to accomplish individualized goals within a therapeutic relationship by a credentialed professional who has completed a music therapy program approved by the American Music Thera-

py Association (AMTA; [www.musictherapy.org](http://www.musictherapy.org)). The music therapy profession has tremendous breadth and music therapists practice in a wide variety of clinical settings, including various types of substance abuse rehabilitation facilities. There are approximately 7500 Board Certified Music Therapists in the United States and the most recent available data indicate that nearly 10% of these music therapists work in addiction settings [10]. However, there is no available datum concerning what specific type of addictions setting (i.e., detoxification, 28-day, six-month or age group) in which these music therapists are practicing.

Although few scholars maintain an active music therapy and addiction research agenda, there are published studies that support music therapy in the treatment of addictions for various dependent measures including depression [11], non-drug induced emotions [12], depression, stress and anxiety [13], attendance, enjoyment, and motivation [14], emotional change [15], psychological symptoms, general functioning, and motivation [16], treatment eagerness and working alliance [17], change, depression and treatment perceptions [18], change readiness [19] and motivation and readiness for treatment [20,21]. These authors have found that various types of music therapy interventions, including clinical improvisation, therapeutic songwriting, and lyric analysis, may be effective as they may constitute a break from the typical monotony of talk-based programming in addiction facili-

ties. The unique and non-invasive medium of music can be an engaging and motivational way to relate to peers and the therapist.

To date, there is one published systematic review concerning music therapy and addiction [22]. In this study, the authors found a need for randomized controlled studies. As the contemporary healthcare environment in the United States is focused on evidence-based practice and heightened accountability, randomized controlled trials are vital as they represent a higher level of evidence than can be integrated into meta-analyses to determine an overall effect size. However, as the existing systematic review [22] studied all types of dependent measures related to addiction, there is a need to address more specific treatment aspects using randomized controlled studies, such as substance abuse withdrawal symptoms. As people in detoxification units have idiosyncratic needs due to the excruciating substance withdrawal process that people in longer-term addictions treatment no longer experience to the same extent (i.e., withdrawal and craving), there is a need to review randomized controlled music therapy research that specifically addresses the negative physiological aspects of withdrawal.

To date, there are three randomized controlled published music therapy studies in English targeting substance abuse withdrawal symptoms [19,23,24]. These studies are summarized in Table 1.

**Table 1:** Music therapy studies targeting substance abuse withdrawal.

Author(s)	Year	Journal	Participant Type	N	Design	Independent variable/Treatment	Dependent measures	Results
Silverman	2010	<i>The Arts in Psychotherapy</i>	Adult inpatients on a detoxification unit	118	Two group cluster randomized controlled study; post-test only	Lyric analysis of Under the bridge, verbal therapy	Withdrawal (Adjective Rating Scale for Withdrawal)	Between-group differences were not significant, but MT group had lower withdrawal
Silverman	2011b	<i>Journal of Music Therapy</i>	Adult inpatients on a detoxification unit	141	Three group cluster randomized controlled study; post-test only	Rockumentary of Red Hot Chili Peppers with lyric analysis of Under the bridge, verbal therapy, recreational music therapy (rock and roll bingo)	Craving (Brief Substance Craving Scale)	Between-group differences were not significant, but MT groups had lower craving
Silverman	2016	<i>Substance Use and Misuse</i>	Adult inpatients on a detoxification unit	144	Two group cluster randomized controlled study; pre or posttest only	Lyric analysis of Soul to squeeze (posttest only), waitlist control (pretest only)	Craving (Brief Substance Craving Scale); Withdrawal (Adjective Rating Scale for Withdrawal)	Between-group differences were not significant, but MT group had lower craving and withdrawal

The lack of contributing scholars indicates a stark need for additional scholars to undertake this work and increase the diversity of treatment interventions, measures, designs, and paradigms. Studies were published in 2010, 2011 and 2016 in *The Arts in Psychotherapy*, the *Journal of Music Therapy* and *Substance Use and Misuse*, respectively. All participants (mean participants/study = 133.67;  $SD = 11.09$ ) were inpatients on an adult detoxification unit. Likely due to the same researcher designing them, all three studies had a similar design consisting of cluster-randomization within a single-treatment session due to the group-based settings common on detoxification units. Two studies contained two treatment groups

and one study contained three treatment groups. All three studies used a pre- or posttest, but no study used both pre and posttests. Additionally, all studies used a lyric analysis (or derivative of a lyric analysis in the case of the rockumentary [19]) of a Red Hot Chili Peppers song and measured withdrawal, craving, or both using self-report instruments. No study had a statistically significant result. However, there were mean differences in all three studies consistently favoring the music therapy conditions. As there were only three studies, a meta-analysis was not conducted. When additional and more diverse literature is available, a meta-analysis would be an appropriate tool to determine an overall effect size and the next steps for empirical study.

One of the often-perceived design-based problems with the three identified studies is the lack of both a pre- and posttest. However, with an adequate sample size and randomization, these do not constitute limitations [25-27]. Within the unique temporal and contextual parameters of single-session treatment that is common on detoxification units, using both pre- and posttests can result in testing fatigue [28]. Moreover, testing fatigue may be enhanced with people on detoxification units due to their substance abuse withdrawal symptoms. Additionally, the three included studies were effectiveness studies, designed to represent contemporary clinical practice. As most detoxification units are extremely short-term and patients are often too sick to attend sessions during their initial

days due to their withdrawal symptoms, music therapists may only be able provide a single treatment session during patients' inpatient stay.

It is tremendously concerning that only three studies—all related investigations within a research line by the same author—exist. A potential reason for the lack of research is that researchers are likely more interested in traditional variables when studying addiction, including stage of change, motivation, emotional expression, relapse, and recidivism. When examining symptoms of substance abuse withdrawal, researchers are limited to detoxification settings as patients are only transferred to longer-term and more traditional rehabilitative settings for addiction treatment (i.e., 28-day inpatient or six-month facilities) after their withdrawal symptoms have subsided. Anecdotal evidence suggests that most music therapists working in addictions treatment practice in non-detoxification settings where substance abuse withdrawal symptoms are not a priority as the patients have already progressed through this stage and are undergoing intensive psychological treatments to understand and change their cognitions, affective states and behaviors.

One of the potential problems with using music and music-based interventions in addiction treatment is that it may inadvertently induce craving due to previously established associations between music and substance misuse [29]. These associations highlight the importance

of the music therapy assessment and educating patients concerning how some music may function as a situational risk factor – or trigger–for substance use. As it may be difficult for patients to avoid certain music, this represents an opportunity for music therapists to collaboratively work with patients to find appropriate coping skills during these high-risk situations. Thus, as music therapy involves a formalized assessment process wherein the music therapist can screen for songs that may function as triggers for craving and relapse, music therapy may be more beneficial than listening to pre-determined non-music therapy interventionist-selected recorded music (i.e., music medicine), wherein no assessment occurs.

In the 2014 National Survey of Substance Abuse Treatment Services, the authors found that medication was used in 80% of detoxifications [30]. As medical professionals in detoxification facilities frequently utilize pharmacological interventions to reduce patients' agonizing withdrawal and craving symptoms, it may inadvertently reinforce reliance upon chemically induced physiological, cognitive, affective, and behavioral change. This reinforcement compounds patients' existing reliance upon substances for affective change and alternative methods are needed. Thus, results of the three music therapy studies targeting substance abuse withdrawal symptoms–although it should be reiterated that none of the three studies reached statistical significance–warrant clinical implementation given the well-established Craving Withdrawal Model [5] and the Conditioned Appetitive Motivational Model of Craving

[8]. As such, using lyric analysis interventions targeting motivation and change may be a non-pharmacological and positive method to distract people from their negative symptoms without relying upon medications or reinforcing the effectiveness of chemically induced change. The lyric analysis interventions in the identified studies targeted relapse prevention, but the researcher measured craving and withdrawal and found positive results. Thus, clinical music therapists might utilize results from this study as an educational tool to explain to patients in substance abuse rehabilitation–as well as administrators and staff on detoxification units–that participation in group-based music therapy may immediately relieve patients from craving and withdrawal symptoms while simultaneously targeting relapse prevention.

Future researchers might consider studying how other types of music therapy interventions, including clinical improvisation and therapeutic songwriting, might impact substance abuse withdrawal. Additional considerations for future research include the maintenance of treatment effects by collecting follow-up data and lyric analysis interventions of songs by different artists. Moreover, other integrative treatments and CAMs might have a place in the treatment of substance abuse withdrawal symptoms. For example, acupuncture may be an effective tool to manage the negative affective and physiological symptoms associated with detoxification. However, acupuncture is not as appropriate in group-based settings, which is how

detoxification units are typically designed to deliver psychosocial treatments. Interventions and approaches that lend themselves to group-based formats—such as music therapy—may be more successful and monetarily feasible.

## Conclusion

Music therapy is a complimentary and alternative treatment intervention commonly used in substance abuse treatment that can also positively impact substance abuse withdrawal symptoms. To date, three randomized controlled studies exist evaluating the effects of music therapy on substance abuse withdrawal symptoms. These studies tentatively support music therapy as a single-session intervention that can positively impact the substance abuse withdrawal symptoms of craving and withdrawal with inpatient adults on detoxification units. Thus, music therapy may function as a non-pharmacological complementary and integrative treatment intervention to target not only traditional addiction dependent measures including motivation and change readiness, but can also positively impact substance abuse withdrawal symptoms. Additional research incorporating various paradigms and data types is warranted to better serve this marginalized, poorly understood and disenfranchised clinical population.

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