

Music Listening Intervention on Craving and Withdrawal Symptoms in Patients with Alcohol Dependence: A Randomized Controlled Trail

Mr.Rajkumar, M, Dr.Sivaprakash B, Dr.Karthick Subramanian,
Dr.Sumathy Sundar, Dr.Adkoli B V

Centre for Music Therapy Education and Research, Department of Psychiatry, Centre for Health Professions Education;

Mahatma Gandhi Medical College & Research Institute, Puducherry.

Abstract

The effect of music listening on the neurological processes by effecting mesolimbic structural changes which is responsible for reward processing has been explored. Pleasant emotional responses to music are associated with changes in cerebral blood flow in brain regions thought to be involved in reward/motivation, emotion, and arousal - Ventral striatum, midbrain, amygdala, orbitofrontal cortex, and ventral medial prefrontal cortex. However, there are not many studies which conclusively indicate the beneficial effects of listening to music on the recovery of the biological aspects of craving and withdrawal symptoms in patients with alcoholic dependence. This study was conducted on 30 patients with Alcoholic Dependency Syndrome (ADS) in the age group of 18 to 64 with an aim to arrive at a suitable research methodology and to detect any limitations relating to recruitment of patients for the study, randomization, period of intervention and compliance to interventional procedures on the effect of music listening on the craving and withdrawal symptoms of patients with ADS. Patients with alcohol dependence syndrome according to DSM-5, fulfilling the inclusion and exclusion criteria will be considered for recruitment into the study and randomized into two groups. Randomization will be done by computer assisted method (computer assisted randomisation in which the random numbers will be generated in a system and accordingly the patients will be allocated to either intervention or control groups). The 15 patients were received treatment as usual and music listening intervention in experimental group. And another 15 patients were received treatment as usual without music listening intervention in control group. Patients in both the music listening group and the control group will complete an assessment of Alcohol Craving Questionnaire – Short Form - Revised (ACQ - SF - R), to assess the level of craving and Clinical Institute Withdrawal Assessment of Alcohol Scale, Revised (CIWA-Ar) to assess the level of withdrawal symptoms before the music listening intervention commences, on the 7th day and on the 14th day when the study gets completed and when the patients come for follow-up after one week of discharge. All patients in the music listening intervention group and the will complete a music profile schedule at the baseline. The results findings were indicated that music listening may support de-addictive treatment by reducing the withdrawal and craving symptoms in patients diagnosed with ADS then the patients who received treatment as usual without music listening intervention in control group. The presentation will detail on the results of this study.

Date of Submission: 15-05-2021

Date of Acceptance: 31-05-2021

I. Introduction

Music, at a neurobiological level provokes peak experiences, stimulates neural reward and emotion systems (Blood 2001). Music has the potential to promote positive mood states (Koelsch 2015, Sena Moore 2013). Pleasurable music can promote the release of dopamine to positively affect the reward system (Blum 2010), Music can also alleviate pain perception by inhibiting neural activity in limbic system (Neugebauer 2004). In addition to these, music readily acts upon neural activity. Due to such effects on brain, music can be used as therapeutic intervention. Music therapy is a systematic process of intervention wherein the therapist helps the person to promote health.(Bruscia 1998). During this process, a trained music therapist engages with the participant in a range of active and receptive approaches to listening to, discussing, creating, improvising and performing music. Studies have shown that active engagement in music therapy can alleviate anxiety and depression in people with serious mental disorders (Mossler 2011). The numerous benefits with Music therapy for substance use disorders have been documented (Silverman 2011, Alterais 2014). Individuals with Alcohol

dependence syndrome can experience a decrease in substance craving after listening to songs. Music is also reported as being helpful for staying clean/sober (Short 2015).

II. Aim & Objectives

- To study the effect of adjunctive music listening intervention on craving and withdrawal symptoms in patients with alcohol dependence.
- To compare the changes in the level of craving and withdrawal symptoms of patients with Alcohol Dependence Syndrome, receiving treatment as usual (pharmacological and psychological interventions) with and without music listening intervention.

III. Methodology

This Randomized controlled trail study was conducted on 30 patients with Alcoholic Dependence Syndrome (ADS) in the age group of 18 to 64 with an aim to arrive at a suitable research methodology and to detect any limitations relating to recruitment of patients for the study, randomization, period of intervention and compliance to interventional procedures to do a PhD dissertation on the effect of music listening on the craving and withdrawal symptoms of patients with ADS. Patients with alcohol dependence syndrome according to DSM-5, fulfilling the inclusion and exclusion criteria will be considered for recruitment into the study and randomized into two groups. Randomization will be done by computer assisted method (computer assisted randomisation in which the random numbers will be generated in a system and accordingly the patients will be allocated to either intervention or control groups). The 15 patients were received treatment as usual and music listening intervention in experimental group. And another 15 patients were received treatment as usual without music listening intervention in control group.

Inclusion and Exclusion criteria

Inclusions: Patients diagnosed of alcohol dependence syndrome as per DSM 5, aged 18 to 64 years, admitted to the in-patient unit of the department of psychiatry for a minimum period of 14 days, availability of informed consent form from the patient/caretaker

Exclusions: Patients with psychosis, Persistent acute physical problems. Other co morbidities in psychiatric diagnosis (Depression, Anxiety, OCD, etc), requiring electro convulsive therapy, Cognitive impairment, Intellectual disability and Hearing loss

Scales & Assessments

- Alcohol Craving Questionnaire – Short Form - Revised (ACQ - SF - R), to assess the level of craving.
- Clinical Institute Withdrawal Assessment of Alcohol Scale, Revised (CIWA-Ar) to assess the level of withdrawal symptoms.
- Assessed on before the music listening intervention commences, on the 7th day and on the 14th day when the study gets completed and when the patients come for follow-up after one week of discharge

Table 1 shows that ANCOVA for ACQ Experimental with control group

Test	Experimental group			Control group			F value	P value
	N	Mean	SD	N	Mean	SD		
Baseline	15	34.13	16.957	15	36.33	18.341	0.116	0.736
7 th day	15	16.33	15.913	15	23.00	14.273	3.517	0.072
14 day	15	3.67	6.477	15	13.73	11.486	10.40	0.003
Follow up	15	1.00	2.360	15	8.87	8.863	10.499	0.003

The table.1 shows that, the pre-test (Base line) mean value of experimental group and control group of craving was 34.13 and 36.33 and the obtained 'F' value 0.116 which was not significant at 0.05 level.

The 7th day of craving of alcoholics' mean value of experimental group and control group was 16.33 and 23.00 and obtained 'F' value 3.517 which was not significant at 0.05 level.

On the 14th day, the mean value of experimental group and control group of ACQ was 3.67 and 13.73 and obtained 'F' value 10.40 which was significant at 0.05 level.

When we analysis the day of follow up, the mean value of experimental group and control group of ACQ was 1.00 and 8.87 and obtained 'F' value 10.499 which was significant at 0.05 level.

The results of above table shows that, there was significant difference between experimental group and control group on 14th day and the day of follow up in ACQ of alcoholics. Further the result shows that the experimental group had better improvement on ACQ of alcoholics when compared with control group.

Table 2 shows that ANCOVA for CIWA Experimental with control group

Test	Experimental group			Control group			F value	P value
	N	Mean	SD	N	Mean	SD		
Baseline	15	20.67	17.999	15	19.47	12.029	0.046	0.832
7 th day	15	7.93	11.931	15	11.80	8.108	3.591	0.069
14 day	15	2.07	4.906	15	2.93	4.217	0.546	0.466
Follow up	15	0.27	1.033	15	1.93	2.631	5.453	0.027

The table 2 shows that, the pre-test (Base line) mean value of experimental group and control group of CIWA was 20.67 and 19.47 and the obtained ‘F’ value 0.046 which was not significant at 0.05 level.

The 7th day of CIWA of alcoholics’ mean value of experimental group and control group was 7.93 and 8.108 and obtained ‘F’ value 3.591 which was not significant at 0.05 level.

On the 14th day, the mean value of experimental group and control group of CIWA was 2.07 and 2.93 and obtained ‘F’ value 0.546 which was not significant at 0.05 level.

When we analysis the day of follow up, the mean value of experimental group and control group of CIWA was 0.27 and 1.93 and obtained ‘F’ value 5.453 which was significant at 0.05 level.

The results of above table shows that, there was significant difference between experimental group and control group on the day of follow up in CIWA of alcoholics. Further the result shows that the experimental group had better improvement on CIWA of alcoholics when compared with control group.

IV. Discussion & conclusion

The results indicated that music listening may support de-addictive treatment by reducing the withdrawal and craving symptoms in patients diagnosed with ADS then the patients who received treatment as usual without music listening intervention in control group. The findings also indicated that music listening supports de-addictive treatment by reducing the withdrawal and craving symptoms in patients diagnosed with ADS.

References

- [1]. Blood AJ, Zatorre, RJ (2001). Intensely pleasurable responses to music correlate with activity in brain regions implicated in reward and emotion. *Proceedings of the National Academy of Sciences of the United States of America*. 2001; 98, 11818-11823.
- [2]. Bruscia, K. E. (Ed.). (1998). *The dynamics of music psychotherapy*. Ginsum, NH: Barcelona Publishers.
- [3]. James CG, Suzanne LW, Timothy SC, Kathleen NL, Fulton TC.(1999) Pharmacological treatment of alcohol dependence: A review of evidence. *JAMA*. 1999; 281(14): 1318-25
- [4]. Mathis, W., (2015). The Neuroscientific Basis for Aesthetic Preference as an Intervention for Drug Craving Associated with Addiction. *J. Addict. Res. Ther.* 6:213.
- [5]. Neugebauer L. (2005). The importance of music therapy for encouraging latentpotential in developmentally challenged children. *Music Therapy Today* 2005, VI(3):430-455[http://www.musictherapyworld.net].
- [6]. Silverman MJ. (2016). Effects of a single lyric analysis intervention on withdrawal and craving with inpatients on a detoxification unit: A cluster-randomized effectiveness study. *Subst Use Misuse*. 2016;51: 241–249. pmid:26800444

Mr.Rajkumar, et. al. “Music Listening Intervention on Craving and Withdrawal Symptoms in Patients with Alcohol Dependence: A Randomized Controlled Trail.”*IOSR Journal of Dental and Medical Sciences (IOSR-JDMS)*, 20(05), 2021, pp. 10-12.