

# Effect of Mandala Colouring on Anxiety and Withdrawal Symptoms Among Alcohol Dependent Patients

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## Abstract

The present study was intended to assess the effect of mandala colouring on anxiety and withdrawal symptoms among alcohol dependent patients. The main objectives of the study were to assess the anxiety and withdrawal symptoms among alcohol dependent patients, to evaluate the effect of mandala colouring on anxiety and withdrawal symptoms and to find out the relationship between anxiety and withdrawal symptoms among alcohol dependent patients. Quasi experimental nonequivalent control group design was adopted. Sample consisted of 60 alcohol dependent patients 30 each in control and experimental group from selected deaddiction centers in Thiruvananthapuram by purposive sampling. The data was collected by interview method using interview schedule to assess the socio demographic and clinical variables, Spielberger State- Trait Anxiety Inventory and Clinical Institute Withdrawal Assessment for Alcohol scale. Followed by pre-test, mandala colouring was administered to the participants of experimental group for 30 minutes for 6 days. Post-test was done on 6<sup>th</sup> day of intervention for both the groups by using the same tool. Results revealed that majority of the participants 63.3% (38) had high anxiety, 30% (18) had moderate anxiety and 6.7% (4) had low anxiety. Alcohol dependent patients mostly 50% (30) had severe withdrawal symptoms, 33.3% (20) had moderate withdrawal symptoms and 16.7% (10) had mild withdrawal symptoms. There was a statistically significant ( $p < 0.05$ ) difference in the post-test score of anxiety and withdrawal symptoms between alcohol dependent patients in experimental and control group. There was statistically significant association found between anxiety and educational status among alcohol dependent patients. No significant relationship between anxiety and withdrawal symptoms was found. Hence the findings of the present study revealed that mandala colouring is effective in reducing anxiety and withdrawal symptoms. The study concluded that mandala colouring can be considered as a safe and effective nursing intervention for patients admitted for de-addiction.

**Keywords:** anxiety; withdrawal symptoms; mandala colouring; alcohol dependent patients

## Introduction

Alcoholism is a major public health and social problem all over the world.<sup>1</sup> Alcohol is one of the leading causes of death and disability globally and in India.<sup>2</sup>

According to the global status report on alcohol and health by World Health Organization (WHO), about

38.3% of the world's population consumes alcohol regularly. The report also says that, about 30% of Indian population consumes alcohol regularly.<sup>3</sup>

The World Health Organization estimates that there are about 2 million people worldwide who consumes alcoholic beverages and 76.3% with diagnosable alcohol use disorder.<sup>4</sup> Prevalence of alcohol dependence in India is 2.1% in general population and it is much higher for adult male population (3.8%).<sup>5</sup> Unfortunately, Kerala the God's own country is one of the highest consumers of alcohol use in India.<sup>6</sup> Prevalence of alcohol dependence among adult male in Thiruvananthapuram district, Kerala is estimated as 38.41%.<sup>7</sup> The most glaring trend is that people are beginning to drink at younger age over the last few decades.<sup>8</sup>

In United States the prevalence of Alcohol Use Disorder in 2019 based on the National Survey on Drug Use and Health, 29.5 million people aged 12 years and older (10.6% in this age group) had Alcohol Use Disorder. This includes 16.6 million male aged 12 and older (12.1 % in this age group).<sup>9</sup>

The number of alcoholics gets high on daily basis. The increasing number of alcohol beverages are not new in our system. The alcohol consumption causes so many physical as well as psychological problems. There are many problems suffered by them, withdrawal symptoms are one among the major problem.<sup>10</sup> In recent years alcohol dependence has become a major social and personal menace in most societies.<sup>11</sup> Among alcoholics, withdrawal symptoms are a pervasive problem that is taking an increasing toll on the world's alcoholic population. The world development report found that alcohol related disorder affects 5-10% of the world's population each year and accounted for 2% of the global burden of disease.<sup>12</sup>

Sometimes alcoholics fails to receive adequate treatment, they fear about the withdrawal symptoms that may be a reason for the relapse. The severity of withdrawal symptoms extends up to suicidal behaviours. Severe anxiety and withdrawal symptoms are the biggest issue experienced by alcoholics. So, the reduction of withdrawal symptoms has importance in deaddiction treatment.<sup>13</sup>

### **Statement of the problem**

A study to assess the effect of mandala colouring on anxiety and withdrawal symptoms among alcohol dependent patients admitted in selected deaddiction centre, Thiruvananthapuram.

### **Objectives**

1. Assess the level of anxiety among alcohol dependent patients.
2. Assess the withdrawal symptoms among alcohol dependent patients.
3. Evaluate the effect of mandala colouring on anxiety among alcohol dependent patients.
4. Evaluate the effect of mandala colouring on withdrawal symptoms among alcohol dependent patients.
5. Find out the correlation between anxiety and withdrawal symptoms among alcohol dependent patients.
6. Determine the association between level of anxiety and selected socio demographic variables among alcohol dependent patients.
7. Determine the association between level of anxiety and selected clinical variables among alcohol dependent patients.
8. Determine the association between withdrawal symptoms and selected socio demographic variables among alcohol dependent patients.
9. Determine the association between withdrawal symptoms and selected clinical variables among alcohol dependent patients.

### Hypothesis

- H<sub>1</sub>: There is significant difference in the level of anxiety among alcohol dependent patients in experimental group after administering mandala colouring compared to the control group.
- H<sub>2</sub>: There is significant difference in withdrawal symptoms among alcohol dependent patients in experimental group after administering mandala colouring compared to the control group.

### Conceptual framework

The conceptual framework of the present study is based on J W Kenney's open system model (1990)

### Methodology

**Research approach:** Quantitative research approach

**Research design:** Quasi experimental nonequivalent control group design.

**Setting of the study:** The study was conducted in Dale View Care Point, Vellanand (experimental group) and Pratheeksha Integrated Rehabilitation Centre for Addicts, Shangumugham (control group), Thiruvananthapuram. These are two integrated rehabilitation centre for addicts which has taken a stand against drugs and alcohol which consists of around 100 alcohol dependent patients.

**Population:** The study population comprised of alcohol dependent patients undergoing treatment in Thiruvananthapuram.

**Sample:** Sample consisted of 60 alcohol dependent patients admitted for treatment in Dale View Care Point, Vellanad (30 in experimental group) and Pratheeksha Integrated Rehabilitation Centre for Addicts, Shangumugham (30 in control group).

**Sample size:** 60

**Sampling technique:** Purposive sampling

### Inclusion criteria

- Alcohol dependent patients who satisfy the ICD 11 criteria for alcohol dependence syndrome
- Alcohol dependent patients 5 days after the admission in the de-addiction centre
- Alcohol patients who can understand Malayalam or English
- Available at the time of data collection

### Exclusion criteria

- Those who have chronic mental illness
- Critically ill patients

### Tool:

Tool 1: Interview schedule which consisted of two sections.

Section A: Socio-demographic variables of alcohol dependent patients.

Section B: Clinical variables of alcohol dependent patients.

Tool 2: Spielberger State-Trait Anxiety Inventory (STAI)

Tool 3: Clinical Institute Withdrawal Assessment for Alcohol (CIWA-Ar) Revised scale

**Technique:** Interview method.

## Results

The major findings of the study were as follows,

### Section 1: Distribution of alcohol dependent patients based on socio-demographic variables.

- Based on age in experimental group 36.7% (11) were 31-40 years of age, 33.3% (10) of participants were  $\leq 30$  years of age and 30% (9) were  $> 40$  years of age. Whereas in the control group 46.6% (14) were 31-40 years of age, 26.7% (8) of participants were  $\leq 30$  years of age and 26.7% (8) were  $> 40$  years of age.
- Regarding education, in experimental group 33.3% (10) of participants were having primary education and 26.6% (8) were having secondary education. In control group 33.3% (10) of participants having plus two and 30% (9) were having primary education.

### Section 2: Level of anxiety among alcohol dependent patients

- Majority of the participants in the experimental and control group 66.6% (20) and 60% (18) were having high anxiety. 33.3% (10) in control and 26.7% (8) in experimental group were having moderate anxiety and only 6.7% (2) having low anxiety.
- The mean pre-test anxiety score in experimental group was 26.7 and that in control group was 30.2.

### Section 3: Withdrawal symptoms among alcohol dependent patients before intervention

- In the present study, 60% (18) participants in experimental group were having severe withdrawal symptoms, 33.3% (10) were having moderate withdrawal symptoms and 6.7% (2) had mild withdrawal symptoms. In control group 40% (12) participants were having severe withdrawal symptoms, 33.3% (10) were having moderate withdrawal symptoms and 26.7% (8) having low withdrawal symptoms. Among the total participants, 50% (30) were having severe withdrawal symptoms, 33.3% (20) had moderate withdrawal symptoms and 16.7% (10) had low withdrawal symptoms.
- The mean pre-test withdrawal score in experimental group was 16.6 and that in control group was 24.2.

### Section 4: Effect of mandala colouring on anxiety among alcohol dependent patients

- The average anxiety score of experimental group in post-test was 21.97 and in control group was 28.68. The calculated 't' value is more than the table value. Hence the null hypothesis ( $H_{01}$ ) was rejected and the alternative hypothesis ( $H_1$ ) was accepted.
- In experimental group 53.3% (16) participants had moderate anxiety and only 23.3% (7) had high and low anxiety. Whereas in control group 63.3% (19) participants had high anxiety, 30% (9) had moderate anxiety and only 6.7% (2) had low anxiety. Chi square value shows statistically significant difference between both groups. It can be interpreted that mandala coloring is effective in reducing anxiety among alcohol dependent patients.

### Section 5: Effect of mandala colouring on withdrawal symptoms among alcohol dependent patients.

- The mean total post-test score of withdrawal symptom was 16.6 in experimental group and 22.4 in control group. The obtained 't' value is significant. Thus the null hypothesis ( $H_{02}$ ) was rejected and the alternative hypothesis ( $H_2$ ) was accepted.
- In experimental group 46.7% (14) participants had moderate withdrawal symptoms, 40% (12) had severe withdrawal symptoms and 13.3% (4) had mild withdrawal symptoms. Whereas in control group 46.7% (14) participants had severe withdrawal symptoms, 33.3% (10) had moderate withdrawal symptoms and 20% (6) had mild withdrawal symptoms. Chi square value shows statistically significant difference between both groups. It can be interpreted that mandala coloring is effective in reducing withdrawal symptoms among alcohol dependent patients.

**Section 6: a. Association between level of anxiety and selected socio demographic variables among alcohol dependent patients**

- Chi square was used to assess the association between level of anxiety among alcohol dependent patients and socio demographic variables.
- There was statistically significant association between level of anxiety among alcohol dependent patients and socio demographic variable such as educational status ( $p < 0.05$ ).

**Table 1 : Association of level of anxiety among alcohol dependent patients and educational status. (n=60)**

Educational status	Level of anxiety						$\chi^2$	df	p value
	Low f	%	Moderate f	%	High f	%			
Primary education	3	15.7	5	26.3	11	58			
Secondary education	2	13.3	4	26.7	9	60	11.59*	4	0.04
Plustwo/pre-degree	2	14.3	4	28.6	8	57.1			
Graduate and above	2	33.3	3	50	1	16.7			
Professional/ technical	3	50	2	33.3	1	16.7			

(\*significant at 0.05 level)

**Discussion**

The present study focused on the effect of mandala colouring on anxiety and withdrawal symptoms among alcohol dependent patients in selected de-addiction centres in Thiruvananthapuram.

The first objective of the study was to assess the level of anxiety among alcohol dependent patients. In the present study, 63.3% of the participants had high anxiety, 30% had moderate anxiety and 6.67% had low anxiety. A similar study conducted on anxiety among alcohol dependent patients admitted in various deaddiction centres at Finland, showed that among 121 alcohol dependent patients 68.12% had severe level of anxiety, 19.4% had moderate level of anxiety and 12.48% had low level of anxiety.<sup>14</sup> Another study conducted among 40 alcohol dependent patients, in Nordic also revealed that 82.5% of the participants had high anxiety.<sup>15</sup> These findings highlight that there is a significant level of anxiety among alcohol dependent patients.

Second objective of the study was to assess the withdrawal symptoms among alcohol dependent patients. In the present study, 50% had severe withdrawal symptoms, 33.3% had moderate withdrawal symptoms and 16.7% had mild withdrawal symptoms. A similar study conducted to assess the severity of withdrawal symptoms among alcohol dependent patients also reported that withdrawal symptoms were high among alcoholics.<sup>16</sup> In another supportive study it was identified that withdrawal symptoms like tremor, sweating, agitation and disorientation were high among alcohol dependent patients. All these studies highlight that alcohol dependent patients have severe withdrawal symptoms.<sup>17</sup>

The third major objective of the study was to evaluate the effect of mandala colouring on anxiety among alcohol dependent patients. In the present study there is significant difference in anxiety score between alcohol dependent patients in experimental group after the mandala colouring technique. Mandala colouring was effective in reducing anxiety among alcohol dependent patients. In a similar study to assess the effectiveness of mandala colouring on anxiety among alcohol dependent patients in Puducherry,

reported significant reduction in anxiety after administering mandala coloring.<sup>18</sup> This study supports the current study findings. There are many studies which support that mandala colouring reduces anxiety.<sup>19</sup> The present study evaluated the effect of mandala colouring on withdrawal symptoms among alcohol dependent patients. There was significant difference in total score between experimental and control group. Similar study conducted to assess effect of mandala colouring on withdrawal symptoms such as tremor and agitation among alcoholics showed significant difference in tremor and agitation in experimental group compared to control group.<sup>20</sup> Thus it can be inferred that mandala colouring could be used to manage anxiety and withdrawal symptoms.

In the present study the withdrawal symptoms of the participants in experimental group were less compared to control group. There was significant difference in withdrawal symptoms in experimental group after intervention compared to control group.

In the present study significant association was found between anxiety and educational status. Similar to this study significant association was found between anxiety and educational status, in a study conducted among alcohol dependent patients.<sup>21</sup>

In the present study no association was found between withdrawal symptoms and socio demographic or clinical variables such as duration of alcohol use and relapse.

Significant correlation was not found between anxiety and withdrawal symptoms among alcohol dependent patients. In contrary to this there was studies which had association between anxiety and withdrawal symptoms among alcohol dependent patients.

### Summary

The present study was undertaken to assess the effect of mandala colouring on anxiety and withdrawal symptoms among alcohol dependent patients. Quantitative approach and quasi experimental design were adopted. Purposive sampling technique was used for the study. The study was conducted among 60 alcohol dependent patients admitted in selected de-addiction centres, Thiruvananthapuram. 30 participants from Pratheeksha de-addiction centre, Shankumugham (control group), and 30 from Dale view de-addiction centre, Vellanadu (experimental group). The conceptual framework adopted for this study was based on J W Kenney's open system model. Permission from concerned institution and informed consent from participants was obtained. Data collection was done from control group and experimental group simultaneously by using structured interview technique to assess the socio demographic data and clinical variables, State Trait Anxiety Inventory was used to assess the anxiety level and Clinical Institute Withdrawal Assessment of Alcohol scale was used to assess the withdrawal symptoms with alcohol dependent patients. Mandala colouring was administered to the experimental group as intervention, which consisted of 6 different patterns of mandala colouring sheets. Post test was done on 6<sup>th</sup> day by using the same tool for experimental and control group. After completing the post-test a session regarding mandala colouring was taken for control group in order to educate the benefits of mandala colouring. Appropriate descriptive and inferential statistical methods were used to analyse data.

### Nursing implications

- Nurses who are working in deaddiction centres can utilize mandala colouring as an interventions to reduce anxiety and withdrawal symptoms among alcohol dependent patients.
- Nurses can suggest the family members or caregivers of alcohol dependent patients the benefit of colouring therapy as a non-pharmacologic measure in their own settings.

- The concept and theories of anxiety and withdrawal symptoms among alcohol dependents should be given adequate weightage in the nursing curriculum.
- Both the undergraduate and postgraduate level nursing students should be trained to identify the level of anxiety and withdrawal symptoms among alcohol dependents using standardized tool.
- The nurse administrators in de addiction centres can ensure use of alternative therapies of relieving anxiety such as mandala colouring technique.
- Mandala colouring is nonpharmacological and cost-effective measure to relieve anxiety, so this therapy can be utilized for mental relaxation of patients.
- The findings of the study can be presented in any conference and make the data available for other nurse researchers.
- Proper dissemination of the study is essential so that it can be utilized by the nurses.

### **Limitations of the study**

- Due to limited number of participants, alcohol dependents who take other substances along with alcohol could not be excluded from the study.

### **Recommendations**

- Nurses can initiate to conduct further qualitative research studies on anxiety and withdrawal symptoms among alcohol dependent patients.
- Further research studies can be conducted on effect of other alternative therapies on anxiety and withdrawal symptoms among alcohol dependent patients.
- Emerging researchers should expand and extend the present study for a larger sample in different settings to generalize the study findings.
- Effect on mandala colouring can be tested on patients with other condition depression and stress.

### **Conclusion**

The study proved that mandala colouring is effective in reducing anxiety and withdrawal symptoms. Today alcohol dependence is a sensitized issue in this world. A large population of individuals who have been treated for addiction tend to get relapsed shortly after treatment. Factors such as anxiety and withdrawal symptoms have been reported as reason for relapse. It should be given great importance to adopt non-pharmacological interventions to reduce anxiety and withdrawal symptoms along with the de-addiction treatment. Safe and cost-effective alternative methods like mandala colouring can be incorporated with the regular treatment modalities to contribute the success of de-addiction treatment programme as well as relapse prevention. Mandala colouring can be used as an effective measure to relieve anxiety.

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