

Article

Effectiveness of Virtual Reality-Based Awareness Education on Level of Coping among Alcohol Dependence Clients at Selected Hospital, Puducherry

Article History:

Received: 20-08-2025

Accepted: 21-09-2025

Published: 20-10-2025

Name of Author:

Vasanth Nila. M¹, Karthigeyan R²

Jayanthi. K¹, Rajeswari. R³, Rathidevi. S⁴,
Malliga. M^{*5}

Affiliation:

¹Department of Mental Health Nursing, Indirani College of Nursing, Ariyur, Puducherry, India. Affiliated to Pondicherry University

²Professor, Department of Oral and Maxillofacial Surgery, Sri Venkateshwara Dental college, Ariyur, Puducherry India. Affiliated to Pondicherry University

³Department of Medical Surgical Nursing, Indirani College of Nursing, Ariyur, Puducherry, India. Affiliated to Pondicherry University

⁴Department of Community Health Nursing, Indirani College of Nursing, Ariyur, Puducherry, India. Affiliated to Pondicherry University

⁵Department of Child Health Nursing Indirani College of Nursing, Ariyur, Puducherry, India. Affiliated to Pondicherry University

Corresponding Author:

Malliga. M, principal@icon.ac.in

How to cite this article:

Vasanth Nila. M, Karthigeyan. R, Jayanthi. K, Rajeswari. R, Rathidevi. S³, Malliga. M, "Effectiveness of virtual reality-based awareness education on level of coping among alcohol dependence clients at selected hospital, Puducherry" European Journal of Clinical Pharmacy, vol. 7, no.1x, 2025, pp. 5814-5820.

Abstract:

Background of the study: The consumption of alcoholic beverages to the extent that it harms the user and results in serious health issues is referred to as alcohol dependency. Therefore, the virtual reality-based awareness education that assists clients with alcohol dependence and improves real-life scenarios is a good way to raise the degree of coping.

Aim of the study: The main aim of the study is to assess the effectiveness of virtual reality-based awareness education on level of coping among clients with alcohol dependence at selected hospital, Puducherry.

Methodology: A quantitative technique using a pre-experimental, one group pre-test post-test research design was chosen for the investigation. Using a non-probability purposive sampling technique, the 40 samples were chosen. The modified Brief-COPE questionnaire was used for the pre-test. Clients with alcohol dependence received a seven-minute virtual reality-based awareness education. The collected data were analysed based on the above-mentioned objectives using descriptive and inferential statistics.

Result: According to the frequency and percentage distribution of coping levels among clients with alcohol dependence, 40 (100%) had moderate levels of coping on the pre-test, 28 (70%) had moderate levels of coping on the post-intervention test, and 12 (30%) had high level of coping. In Comparison of pre-test and post-test level of coping among clients with alcohol dependence, in the pre-test mean score of coping was 51.97±3.77 and the post-test mean score of coping was 71.95±10.68. The mean difference score was 19.97. The calculated paired 't' test value of t=11.573 was found to be statistically significant at p <0.001.

Key words: COPE, Alcohol dependence, Awareness education.

INTRODUCTION

Alcohol dependence is a complex set of psychological, cognitive actions and behaviours that can significantly alter an individual's thoughts and behaviour pattern. It may lead to a societal change in their environment who suffers from alcohol dependence and experience intense craving for alcohol, inability to cope that leads to psychological disturbances that can have a profound impact on the individuals overall well-beings.

Continued consumption of alcohol disturbances the coping and can lead to major health problems, making it crucial to increase the level of coping through virtual reality awareness education program which helps to motivates the alcohol dependence clients for better navigation of their real-life situations and engage more fully with their communities.

According to WHO (2019) Worldwide, 3 million deaths every year results due to alcohol. This represents 5.3 % of all deaths. Overall, 5.1 %of the global burden of disease and injury is attributed to alcohol, as measured in disability – adjusted life years (DALYs). Alcohol consumption causes death and disability relatively early in life. In people aged 20-39 years, approximately 13.5 % of total deaths are attributed due to alcohol.(1)

India's reputation as a country with a culture of abstinence regarding alcohol is undeserved. The country, which has been a rapid proliferation of city bars and nightclubs in recent years, is fast shedding its inhibitions about alcohol as a lifestyle choice. With more than half of all drinkers in India falling into the criteria for hazardous drinking, alcohol abuse is emerging as a major public health problem in the country. The problem is that the treatment of alcoholism is a low priority in Indian's health sector, says Rajat Ray, Professor and chief of the National Drug Dependence Treatment Centre at AIIMS. A growing lobby urging the Health Ministry to act. Indian Alcohol Policy Alliance, An NGO aiming to prevent alcohol-related harm through evidence-based policy intervention, says that the key is to break the stranglehold of state revenue departments who see increasing consumption of alcohol as a boon to treasury coffers. The lack of a national alcohol policy creates "a very difficult situation" for health professionals working to tackle alcoholism, Ray says.(2)

Estimated number of alcohol users in India, in 2005, was 62.5 million, 17% of them being dependent users accounting for 20%–30% of hospital admissions due to alcohol-related problems.(3) The National Household Survey 2004 had reported alcohol use in 21% of adult males and <5% among females. State-wise prevalence rate is highly variable being the lowest (7%) in the western part of Gujarat and the highest (75.0%) in Arunachal Pradesh.(4) In Southern India, the prevalence of current alcohol use has varied between 33%&50%.(5)

The prevalence of alcohol use in Puducherry was 7.7%, and among ≥ 18 years of age, it was 9.7%. Since all the females were abstainers, the prevalence of alcohol use among males was 17.9%. The highest prevalence (17.1%) of alcohol use was observed among people above 45 years than any other age group, among married people (12.5%) and those belonging to joint families (12.3%). Illiterates and educated up to primary had high prevalence of 15.7%. Farmers, daily wage labourers, and self-employed (business) group had high prevalence of 17.8%, 14.7%, and 13.2%, respectively.(6)

According to NIH report Tamilnadu, the prevalence of alcohol and psychological disturbances was found to be 9.4%, prevalence was more among male (16.8) as compared to females (1.3).(7)

Prevalence of heavy episodic drinking (HED) (defined as 60 or more grams of pure alcohol on at least one occasion at least once per month) has increased globally from 22.6% in 2000 to 18.2% in 2016 among the total population, but remains high among drinkers. In all WHO regions, female to male ratio was found to be 1:4 and women drink less than men. Worldwide, the prevalence of women's drinking is less in most regions of the world.(8)

According to Ajit R Naik et al., (2020) conducted a descriptive study on psychopathology and coping strategies in patients with alcohol dependence in an urban population, Maharashtra. The sample consists of 100 patients with alcohol dependence. Purposive sampling technique was used in this study. The data were collected by A-COPE for coping strategies. The results shows patients would deal by expressing their emotions, but controls would form social networks and seek out professional assistance. The study concluded that early detection and therapies that enhance coping with tailored care while taking social context into account are crucial. Review shows that Alcohol dependence client have less coping. In order to improve the level of coping, they need to be aware of coping strategies. The virtual reality based awareness education is a technique which eases the clients to understand the content effectively. The researcher found that there is a need to improve the level of coping among clients with alcohol dependence. Hence the researcher was interested to conduct this study for improving coping among alcohol dependence clients through virtual reality-based awareness education.(9)

OBJECTIVES

- To assess the pre-test and post-test level of coping among clients with alcohol dependence.
- To evaluate the effectiveness of virtual reality based awareness education on level of coping among clients with alcohol dependence.
- To find out association between the pre-test level of coping among clients with alcohol dependence with the selected demographic variables.

HYPOTHESIS

H1: There is a significant difference in the pre-test and post-test level of coping among clients with alcohol dependence with the administration of virtual reality-based awareness education.

H2: There is a significant association between the pre-test level of coping among clients with alcohol dependence with the selected demographic variables

MATERIALS AND METHODS

STUDY DESIGN

Pre experimental one group pre-test post-test research design was adopted for this study.

STUDY POPULATION

The accessible population of the study was clients with alcohol dependence who was admitted in SVMCH&RC, Ariyur, Puducherry.

SAMPLE SIZE

The sample size was 40 clients with alcohol dependence.

SAMPLING CRITERIA

INCLUSION CRITERIA

Clients with both gender who are addicted to alcohol.
Clients who are willing to participate in this study.
Clients who are able to read and write tamil or English.

EXCLUSION CRITERIA

Clients who are with neurological problems.
Clients who are not available at the time of data collection.
Clients who are with chronic illness.

METHOD OF DATA COLLECTION

The data collection was started after obtaining permission from the Institutional Review Committee (IRC NO: ICON IRC-2021-2022-011). The data was collected over a period of four weeks from 17.07.2023 to 31.08.2023. The research approach selected for the study was a quantitative approach with Pre experimental one group pre-test post-test research design. The 40 samples were selected through a non-probability purposive sampling technique. Pre-test was done with the modified Brief-COPE questionnaire. The virtual reality-based awareness education was provided among clients with alcohol dependence for 7 mins which includes definition, coping mechanism, level of coping and coping strategies namely problem focused coping, Emotional focused coping and Avoidant coping. Post-test was done after 7th day of intervention by using demographic variables and modified Brief-COPE questionnaire. The collected data were analyzed based on the above mentioned objectives using descriptive and inferential statistics.

RESULTS

Table 1: Frequency and percentage distribution of demographic variables of clients with alcohol dependence.

(N = 40)

S.NO	Demographic Variables	Frequency	Percentage
		n	%
1	Age in years		
	25 – 35	13	32.5
	36 – 46	17	42.5
	47 – 57	10	25.0
2	Gender		
	Male	40	100.0
	Female	-	-
3	Religion		
	Hindu	15	37.5
	Christian	21	52.5
	Muslim	4	10.0
	Others	-	-
4	Educational status		
	Primary education	12	30.0
	Secondary education	15	37.5
	UG	13	32.5
	PG	-	-

S.NO	Demographic Variables	Frequency	Percentage
		n	%
5	Marital status		
	Married	7	17.5
	Unmarried	19	47.5
	Divorce	14	35.0
	Widow/separated	-	-
6	Types of family		
	Nuclear family	16	40.0
	Joint family	17	42.5
	Extended family	7	17.5
7	Number of children		
	One	13	33.0
	Two	14	35.0
	No children	12	30.0
8	Employment status		
	Self-employee	13	32.5
	Private employee	16	40.0
	Government employee	11	27.5
9	Income per month (Rs.)		
	<10,000	10	25.0
	10,001 – 20,000	16	40.0
	20,001 – 30,000	14	35.0
	>30,000	-	-
10	No. of years of alcohol intake		
	4 – 6 years	11	27.5
	7 – 9 years	15	37.5
	10 – 12 years	14	35.0
11	Place of living		
	Urban	17	42.5
	Rural	15	37.5
	Slums	8	20.0
12	Family history of alcohol dependence		
	Yes	18	45.0
	No	22	55.0

The above table shows that, the frequency and percentage distribution of most clients with alcohol dependence, 17(42.5%) were aged between 36 – 46 years, 40(100%) were male, 21(52.5%) were Christians, 15(37.5%) had secondary education, 19(47.5%) were unmarried, 17(42.5%) belonged to joint family, 16(40%) were private employee and had income of Rs.10,001 – 20,000, 15(37.5%) were consuming alcohol for 7 – 9 years, 17(42.5%) were living in urban area and 22(55%) had no family history of alcohol dependence.

Table 2: Frequency and percentage distribution of pre-test and post-test level of coping among clients with alcohol dependence

(N = 40)

Level of Coping	Pre-test		Post-test	
	Frequency	Percentage	Frequency	Percentage
	n	%	N	%
Low (1 – 28)	-	-	-	-
Moderate (29 – 84)	40	100.0	28	70.0
High (85 – 112)	-	-	12	30.0

The above table depicts that in the pre-test among clients with alcohol dependence, 40(100%) had moderate level of coping and in the post-test after the intervention 28(70%) had moderate level of coping and 12(30%) had high level of coping.

Table 3: Comparison of pre-test and post-test level of coping among clients with alcohol dependence (N = 40)

Test	Mean	SD	Mean Difference	Paired 't' Test value
Pre-test	51.97	3.77	19.97	t = 11.573 p = 0.001, S***
Post Test	71.95	10.68		

***p<0.001, S – Significant

The above table depicts that in the pre-test mean score of coping was 51.97±3.77 and the post-test mean score of coping was 71.95±10.68. The mean difference score was 19.97. The calculated paired 't' test value of t=11.573 was found to be statistically significant at p<0.001 level. This clearly infers that Virtual Reality Based Awareness Education on level of coping administered to the clients with alcohol dependence was found to be effective in increasing the level of coping among them in the post test. Hence hypothesis H1 was accepted, there is effectiveness of virtual reality-based awareness education on level of coping among clients with alcohol dependence.

Table 4: Association of Pre-test level of coping among clients with alcohol dependence with selected demographic variables. (N=40)

S.NO	Demographic Variables	Moderate		High		Chi-Square Value
		n	%	n	%	
1	Age in years					$\chi^2=7.817$ p= 0.020 S***
	25 – 35	12	30.0	1	2.5	
	36 – 46	8	20.0	9	22.5	
	47 – 57	8	20.0	2	5.0	
2	Gender					-
	Male	28	70.0	12	30.0	
	Female	-	-	-	-	
3	Religion					$\chi^2=0.147$ p = 0.929 NS
	Hindu	10	25.0	5	12.5	
	Christian	15	37.5	6	15.0	
	Muslim	3	7.5	1	2.5	
	Others	-	-	-	-	
4	Educational status					$\chi^2=4.573$ p = 0.102 NS
	Primary education	7	17.5	5	12.5	
	Secondary education	9	22.5	6	15.0	
	UG	12	30.0	1	2.5	
	PG	-	-	-	-	
5	Marital status					$\chi^2=0.920$ p = 0.631 NS
	Married	5	12.5	2	5.0	
	Unmarried	12	30.0	7	17.5	
	Divorce	11	27.5	3	7.5	
	Widow/separated	-	-	-	-	
6	Types of family					$\chi^2=2.683$ p = 0.262 NS
	Nuclear family	9	22.5	7	17.5	
	Joint family	14	35.0	3	7.5	
	Extended family	5	12.5	2	5.0	
7	Number of children					$\chi^2=4.456$ p = 0.108 NS
	One	7	17.5	7	17.5	
	Two	12	30.0	2	5.0	
	No children	9	22.5	3	7.5	
8	Employment status					$\chi^2=0.673$ p = 0.714 NS
	Self-employee	8	20.0	5	12.5	
	Private employee	12	30.0	4	10.0	
	Government employee	8	20.0	3	7.5	
9	Income per month (Rs.)					$\chi^2=0.706$
	<10,000	8	20.0	2	5.0	

S.NO	Demographic Variables	Moderate		High		Chi-Square Value
		n	%	n	%	
	10,001 – 20,000	11	27.5	5	12.5	p = 0.703 NS
	20,001 – 30,000	9	22.5	5	12.5	
	>30,001	-	-	-	-	
10	No. of years of alcohol intake					$\chi^2=3.222$ p = 0.200 NS
	4 – 6 years	10	25.0	1	2.5	
	7 – 9 years	9	22.5	6	15.0	
	10 – 12 years	9	22.5	5	12.5	
11	Place of living					$\chi^2=0.401$ p = 0.818 NS
	Urban	11	27.5	6	15.0	
	Rural	11	27.5	4	10.0	
	Slums	6	15.0	2	5.0	
12	Family history of alcohol dependence					$\chi^2=0.943$ p = 0.332 NS
	Yes	14	35.0	4	10.0	
	No	14	35.0	8	20.0	

*p<0.05, S – Significant, NS – Not Significant

The above table shows that the demographic variable age ($\chi^2=7.817$, $p=0.020$) had shown statistically significant association with pre-test level of coping among clients with alcohol dependence at $p<0.05$ level. The other demographic variables did not show significantly statistical association with post-test level of coping among clients with alcohol dependence. Hence the research hypothesis H2 was accepted. There is significant association of pre-test level of coping among clients with alcohol dependence with selected demographic variable.

DISCUSSION

The first objective was to assess the pre-test and post-test level of coping among clients with alcohol dependence.

In the current study, result indicates that in the pre-test, among clients with alcohol dependence, 40(100%) had moderate level of coping. The pre-test mean score of coping was 51.97 ± 3.77 . In post-test, post-test after the intervention 28(70%) had moderate level of coping and 12(30%) had high level of coping. the post-test mean score of coping was 71.95 ± 10.68 . In the similar study conducted by Ghorpade et al., (2020), a cross-sectional study on the road to good spirits perceived stress, self-esteem and coping skills in patients with 63 alcohol dependence, Mumbai. The sample consists of 200 patients with alcohol use disorder. Purposive sampling technique was used in this study. The data were collected by coping inventory for stressful situations and severity of alcohol dependence questionnaire. The results show almost half of the patients had a serious alcohol addiction. The pre-test value 58.32 and post-test value is 89.2. Most patients adopted coping mechanisms that were task-oriented. Low self-esteem alcohol dependence patients primarily adopted avoidant-focused coping mechanisms ($p=0.005$). The study concluded that counselling, supportive psychotherapy, and teaching people to cope well can be helpful and also increases the coping skills of alcohol dependence.⁽¹⁰⁾

The second objective was to effectiveness of virtual reality based awareness education on level of coping among client with alcohol dependence

In the present study, the pre-test mean score of coping was 51.97 ± 3.77 and the post-test mean score of coping was 71.95 ± 10.68 . The mean difference score was 19.97. The calculated paired 't' test value of $t=11.573$ was found to be statistically significant at $p<0.001$ level. This clearly infers that Virtual Reality Based Awareness Education on level of coping administered to the clients with alcohol dependence was found to be effective in increasing the level of coping among them in the post test.

In the similar study, conducted by Gammanpila et al., (2020) a descriptive study on virtual reality for learning assessment of awareness and preference in emerging regions, Sri Lanka. The sample consists of 250 participants. Random sampling technique was used in this study. The data were collected by virtual learning awareness. The results show that the majority of school students exhibit a strong interest in utilizing virtual reality (VR) as a learning tool, with undergraduate students showing the second-highest level of enthusiasm within the sample. The mean difference score was 20.02. The calculated "t" value of $t=14.57$ was found statistically significant. Even though the majority of students and undergraduates have never used virtual reality before, this was their first time using a VR-based program, and the results were encouraging ($p<0.05$). The study concluded that the experiment's findings revealed that using different hand motions for the tutoring virtual avatars was also quite effective.⁽¹¹⁾

The third objective was to associate between the pre-test level of coping among client with alcohol dependence with the selected demographic variables

In the present study, the demographic variable age ($\chi^2=7.817$, $p=0.020$) had shown statistically significant association

with pre-test level of coping among clients with alcohol dependence at $p < 0.05$ level. The other demographic variables had not shown statistically significant association with pre-test level of coping among clients with alcohol dependence. In the similar study, conducted by Backiyaraj Shanmugam et al., (2021) a descriptive study on expressed emotions and coping among relapsed persons with alcohol dependence syndrome, Ranchi. The sample consists of 50 patients. Purposive sampling technique was used in this study. The data were collected by using ways of coping questionnaire. The results show that 60% of patients who were abstinent had a history of alcoholism in their families. Patients who were absent got considerably high scores across the board for coping strategies ($\chi^2=9.24$, $p=0.002$). Association exists between pre-test level of coping. Comparing relapse patients to abstinent patients, relapse patients scored higher in perceived emotional support, irritation, intrusiveness, and criticism. The study concluded that relapse among those with alcohol dependence was highly influenced by coping and perceived expressed emotions.⁽¹²⁾

CONCLUSION:

The pre-experimental study was used to assess the effectiveness of virtual reality based awareness education on level of coping among clients with alcohol dependence in selected hospital, Puducherry. The calculated "t" value was 11.53, which was greater than the tabulated value $p < 0.001$. The result of the study showed that there is association between level of coping with the selected demographic variables among the group.

REFERENCES

- [1] World Health Organization. Department of Mental Health, Substance Abuse. Global status report on alcohol 2004. World Health Organization; 2004.
- [2] Prasad R. Alcohol use on the rise in India. *The Lancet*. 2009 Jan 3;373(9657):17-8.
- [3] Second Report: WHO Expert Committee on Problems Related to Alcohol Consumption. WHO Regional Office for the Western Pacific. 2007
- [4] Benegal V. India: Alcohol and public health. 2005;100:1051-6
- [5] India National Family Health Survey (NFHS-3), 2005-2006. International Institute for Population Sciences. 2007
- [6] Ramanan VV, Singh SK. A study on alcohol use and its related health and social problems in rural Puducherry, India. *J Family Med Prim Care*. 2016 Oct-Dec;5(4):804-808. doi: 10.4103/2249-4863.201175. PMID: 28348995; PMCID: PMC5353818.
- [7] Premarajan KC, Subitha L, Suguna E, Kumar V. Kumar S G, K C P, L S, E S, Vinayagamoorthy, Kumar V. Prevalence and Pattern of Alcohol Consumption using Alcohol Use Disorders Identification Test (AUDIT) in Rural Tamil Nadu, India. *J Clin Diagn Res*. 2013 Aug;7(8):1637-9. doi: 10.7860/JCDR/2013/5521.3216. Epub 2013 Aug 1. PMID: 24086861; PMCID: PMC3782918.
- [8] World Health Organization. Global status report on alcohol and health 2018. World Health Organization; 2018.
- [9] Naik AR, Adarkar SA. Psychopathology and Coping strategies in adolescent children of patients with alcohol dependence in an urban population. *Journal of Indian Association for Child and Adolescent Mental Health*. 2020; 16(4):97-118. doi:10.1177/0973134220200407.
- [10] Ghorpade GS, Kadam KS, Angane AY, Unnithan VB. The road to good spirits: Perceived stress, self esteem and coping skills in patients with alcohol dependence. *Int J Res Med Sci*. 2020 Aug;8:2994-3001.
- [11] Gammanpila A, Perera P, Senaratna H, Edirisinghe EW, Randula, Manawadu U and Silva P. Virtual Reality for Learning: Assessment of Awareness and Preference in Emerging Regions. 19th International Conference on Advances in ICT for Emerging Regions (ICTer), Colombo, Sri Lanka. 2019; 1-8.
- [12] Shanmugam B, Das B, Bhattacharjee D, Ezhumalai S. Expressed Emotions and Coping among Relapsed Persons with Alcohol Dependence Syndrome: A Comparative Study. *Indian J Ment Health*. 2021 Oct-Dec; 8(4):429-434