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## Outcome of Camp Approach in Treatment of Alcohol Use Disorder: A Non-randomized Controlled Study

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### Abstract

**Background:** Studies examining the outcome of the camp approach in the treatment of alcohol dependence are limited in India.

**Aim:** The aim of the study was to compare the outcomes of the community-based camp (CBC) approach and the hospital-based camp (HBC) approach in the treatment of persons with alcohol dependence.

**Methods:** The study used a non-randomized controlled study design (quasi-experimental research design before and after with a control group). In total, 60 respondents were selected through the census method (30 in the study group and 30 in the control group). Thirty respondents from the CBC formed the experimental group, and another 30 from the HBC formed the control group. The CBC was held for 7 days, and the HBC was held for 10 days. The tools used are the Alcohol Use Disorders Identification Test and the World Health Organization quality of life (QoL)-BREF.

**Statistical Analysis:** Independent *t*-test and effect size analysis were used. Kasturba Hospital Institute Ethics Committee, Manipal, had given the ethical clearance.

**Results:** The majority (73%) of the respondents in the CBC and 57% of the HBC participants maintained complete abstinence during the post-test. The relapse rate was lower in the CBC (27%) than in the HBC (43%). CBC is effective at increasing the number of follow-ups and decreasing alcohol intake during relapse. The effect of the camp intervention on increasing the number of follow-ups was medium ( $d = 0.36$ ). The CBC had a small effect on enhancing the QoL of treated individuals with alcohol dependence syndrome during the post-test ( $d = 0.27$ ).

**Conclusion:** The CBC approach is more effective than the hospital one at increasing follow-up and QoL and reducing the relapse rate.

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Conflicts of interest

There are no conflicts of interest.

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## Keywords

Alcohol dependence; community care; community-based treatment; mental health camp; substance use

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## INTRODUCTION

There has been concern over the effectiveness of treatment for alcohol dependence syndrome (ADS) owing to two-thirds of treated individuals relapsing within six months.<sup>[1]</sup> Several studies have shown that treatment is more effective than no treatment.<sup>[2]</sup> Most individuals with ADS can be treated on an outpatient basis and do not require inpatient care.<sup>[3]</sup> Inpatient care is preferred for those with severe alcohol-related (including psychosocial) problems, co-morbid psychiatric conditions and for those who are unable to attain abstinence with outpatient treatment. There is a need to compare the effectiveness of various types of treatment for ADS. Community-based treatment has shown increased effectiveness in treating ADS<sup>[4]</sup> and opioid dependence.<sup>[5]</sup>

There is a 75% treatment gap for substance use disorders (SUDs) in India.<sup>[6]</sup> There are 716 district hospitals under district mental health programs, 400 integrated rehabilitation centers for persons with alcohol use disorder (AUD), 120 medical college psychiatry units, and a few private deaddiction centers and nursing homes provide treatment for SUD.<sup>[7]</sup> There is no data on the exact number of treatment facilities, human resources, or beds available to treat SUD. Prevailing addiction treatment facilities and human resources (12,000+ psychiatrists as of 2023)<sup>[8]</sup> are undoubtedly inadequate for treating 7.5 crore individuals with SUD. Therefore, different innovative methods and modes of treatment are needed for persons with SUD.<sup>[9]</sup> One such innovative method for treating persons with SUD is the camp approach. The camp approach refers to care in the community by the people. It aims to reduce the problem's impact on people and protect and prepare the community to face it effectively in future. Camp intervention occurs through a process in which community resources are identified, and community capacity is strengthened through experts in the field. A community is empowered to address issues independently without depending on external resources. The camp approach has three phases: activities before the camp (creating awareness about the camp), activities during the camp (pharmacological treatment, psychoeducation group, recreation and religious activities, and family counseling session), and activities after the camp (follow-up).

## History of the camp approach

The camp approach was introduced initially to improve health care in rural settings. Camps were organized with the help of local volunteers by medical professionals for family planning, immunization, school health, vision problems, and so on.<sup>[10-12]</sup> The first extension clinic (community outreach services) for neuropsychiatric disorders was started in 1967 at Mandar by the Central Institute of Psychiatry, Ranchi.<sup>[13]</sup> Community care for substance use is almost negligible. The first detoxification camp for persons with opium dependence was organized in February 1979 in a village of the Jodhpur district, Rajasthan; this camp was organized by Purohit and Vyas, and Purohit and Razdan,<sup>[14,15]</sup> and they treated opioid

dependents through the camp approach. Deaddiction camps were subsequently organized in a few parts of India, primarily within and around Ranchi,<sup>[12]</sup> Chennai,<sup>[16]</sup> Chandigarh,<sup>[17]</sup> Mohali,<sup>[18]</sup> Vellore,<sup>[19]</sup> Chamrajanagar,<sup>[20]</sup> and Udupi.<sup>[21]</sup>

### Rationale for the study

The camp approach has been advocated as an effective alternative to hospital-based treatment for AUDs and SUDs, offering many advantages, such as direct community participation in the treatment process, better patient acceptance, better compliance, and cost-effectiveness. However, there are no follow-up studies documenting the treatment outcome of the camp approach. Earlier studies on the camp approach involved lacunae; standardized tools were not used to assess outcome parameters such as the severity of alcohol dependence and follow-up rate, and no comparisons of posttest results were made after camp. Hence, the study aimed to compare the outcomes of two different camp approaches for the treatment of AUDs (community-based camp [CBC] vs. hospital-based camp [HBC]). We hypothesized that an HBC would significantly improve abstinence and quality of life (QoL) compared to a CBC.

### METHODS

The study used a non-randomized controlled trial (quasi-experimental research design pre- and post-test with a control group). The total sample size for the study was 60. Thirty respondents were selected using a purposive sampling method as per inclusion criteria from a CBC organized by the Shri Kshethra Dharmasthala Rural Development Programme at Sasthana Village, Kundapur Taluk, Udupi District. In this camp, totally 35 individuals with alcohol dependence participated. Two individuals were excluded as they did not meet the inclusion criteria because their age was above 70 years, and another three respondents refused consent to participate in the study [Figure 1].

Another 30 respondents were selected from the HBC conducted by Dr. A. V Baliga Memorial Hospital, Doddanagudde, Udupi District, Karnataka. Forty patients participated in the hospital camp: three from Mangalore and one from Tamil Nadu. Therefore, these four patients were excluded because follow-up and home visits are difficult. Another four patients refused consent for the study, and two respondents had psychiatric comorbidities. Hence, ten patients from the HBC group were excluded from the study [Figure 1].

The inclusion criteria for patients were as follows: individuals with ADS according to the International Classification of Disease-10 and Alcohol Use Disorders Identification Test (AUDIT) scores, aged between 18 and 65 years. The exclusion criteria for individuals were as follows: severe mental illness, mental retardation, any SUD other than nicotine dependence, severe medical complications, or cognitive impairments. The census method was used to select the participants. Hence, all the participants who fulfilled the inclusion criteria and those who gave consent were considered for the study.

The tools used were as follows: a semi-structured interview schedule containing sociodemographic information and AUDIT (World Health Organization [WHO], 1992).<sup>[22]</sup> The AUDIT scale assesses the severity of alcohol use and alcohol-related problems. AUDIT

has excellent inter-rater and retest reliability. This scale comprises ten items, each with a score ranging from 0 to 4. A total score of 8 or more is recommended as an indicator of hazardous and harmful alcohol use and possible alcohol dependence. AUDIT scores in the range of 8–15 represents a medium level of alcohol problems, whereas scores of 16 and above represents a high level of alcohol problems. WHO-QoL-BREF (1998)<sup>[23]</sup> scale has 26 items and four domains namely; physical health, psychological health, social relationships and the environment. The Severity of Alcohol Dependence Questionnaire<sup>[24]</sup> (SADQ) is a 20-item questionnaire designed to measure the severity of alcohol dependence. There are five subscales with four items each: physical withdrawal, affective withdrawal, withdrawal relief drinking, alcohol consumption, and rapidity of reinstatement. Each item is scored on a 4-point scale ranging from “almost never” to “nearly always,” resulting in a corresponding score of 0–3. Thus, the maximum possible score is 60, and the minimum possible score is 0. The answers to each question are rated on a 4-point scale: almost never – 0, sometimes – 1, often – 2, and nearly always – 3. A score of 31 or higher indicates “severe alcohol dependence.” A score of 16–30 indicates “moderate dependence.” A score below 16 indicates mild physical dependency.

### Study procedure

After ethics committee approval, persons with ADS were subsequently contacted on the day of admission at both the community camp and HBC, and the nature of the study and its objectives were explained. Informed consent was obtained from the respondents who fulfilled the inclusion criteria. Confidentiality was maintained, and anonymity was ensured. The data were collected from January 1, 2012, to January 10, 2012, at Dr. A. V. Baliga’s Hospital, Udipi, and from February 10, 2012, to February 17, 2012, at the community-based deaddiction camp in Sasthana, Kundapura. The data were collected for 7–10 days in both camps. A posttest was carried out after two months of discharge from the camp. After the CBC, patients were followed up during monthly meetings in the community, which occurred at the Shri Kshethra Dharmasthala Rural Development Office, Sasthana. In the HBC, a posttest was conducted for all patients at Dr AV Baliga Hospital, Udupi, for follow-up on different days except at the first follow-up week after the camp. In the 2<sup>nd</sup> month after discharge from the HBC, patients were contacted by phone and asked to visit the hospital for follow-up. For others, those who were unwilling to attend follow-up because of fear (especially relapsed patients), telephone calls were made to their family members to know about their alcohol use status.

### Statistical analysis

Statistical Package for the Social Sciences (SPSS for Windows, Version 10.0; IBM Corp. Armonk, New York, USA) was used for data analysis. Descriptive statistics were used to express the sociodemographic variables. Differences in categorical variables between the two camps were analyzed using the Chi-square and Fisher’s exact tests. Independent sample *t*-tests were used to compare the means of the two groups and to test the hypothesis. Alpha was set at  $p < .05$  to indicate statistical significance. The regression analysis was used to find out the predictors of QoL. Survival analysis was used to determine the difference in the time to lapse between the two-camp approach. Cohen’s *d*-test was used to determine the effect size of the camp approach. The study obtained ethical clearance

from the Kasturba Hospital Institute Ethics Committee, Manipal Academy Higher Education (Reference Number 447/2011) dated: December 14, 2011.

### **Intervention components in community-based camp**

**Phase 1: Activities prior to camp**—Deaddiction Management Association: There will be 30–50 community members in this association from different fields, such as youth clubs, women’s clubs, cooperative banks, nationalized banks, village panchayaths, lion clubs, Junior Chambers of India, Rotary clubs, sports clubs, local nongovernmental organization, village leaders, proprietors, religious priests from all faiths, primary health centers, and co-operative agricultural and milk society members. These associations usually formed two months before the camp; at least three meetings would be held about the forthcoming deaddiction camp in their community. The association takes all the responsibilities for the deaddiction camp. It is responsible for identifying alcohol dependents in its village, appointing volunteer groups, cooking and food arrangements in camps, fundraising, arranging all medical facilities and cultural programs and bhajans, identifying suitable venues, and arranging accommodations for the patients.

Identifying alcohol-dependent persons through home visits by field workers and advertisements through newspapers and announcements about the camp dates and venue in banners

Fundraising: Decisions regarding fundraising are made at association meetings about the expected expenditures and maintenance of bank accounts for the camp. Patients can give money to the camp organizers as much as possible. Camp organizers fix the minimum amount to be borne by patients without causing a financial burden on them.

**Phase 2: Activities during camp**—Treatment team: A resident nursing officer would be available for five hours daily for the first four days. A camp supervisor and organizer would be present on a round-the-clock basis. A yoga teacher would be available for morning yoga practice during the camp. Various resource persons from different fields (teachers, doctors, and Nava Jeevan members [former camp patients who are maintaining abstinence] would be available at times; they are supposed to participate in an awareness program. Volunteers provide services round-the-clock; they stay in the camp and support the camp organizers and patients

The treatment consists of both pharmacological and non-pharmacological therapies. Pharmacotherapy comprises tablets or ointments for aches and pains, nausea, vomiting, and so on. If organizers find patients with severe withdrawal symptoms, they refer them to nearby hospitals for further management. Non-pharmacological therapy included awareness sessions on the ill effects of alcohol on health and social life, a drug-free life as a step toward a happy life, and psychoeducation sessions (drug-related complications, cues, coping strategies, relapse prevention, and role of family members) for both patients and their family members

Recreational activities: Each patient must participate in a 1-h daily yoga session. Cultural program: Dance, drama, by schoolchildren and youth, and indoor games and other religious activities would be conducted.

Community involvement: All the village visit and participate in the camp's cultural activities, and they even attend group psychoeducation sessions during the camp except for the first two days. During the camp, women self-help group members in the village perform cooking activities on a rotation basis.

### Phase 3: Activities after the camp

**Forming the Nava Jeevana Group**—On the 6<sup>th</sup> day of the camp, group members would be divided into three groups based on their village. After this group formation, one name would be assigned to their group, and one person will be president and another person will be vice-president from the group. Before the formation of the group, information regarding the rationale behind forming the Nava Jeevana Group would be conveyed to them regarding how the group members help each other to prevent relapse.

**Follow-up**—During the 7<sup>th</sup> day of the camp, all the patients would gather at the Shri Kshethra Dharmasthala Rural Development Project (SKDRDP) office, inaugurate their Nava Jeevana Sameethi, and start their first group meeting.

**Punaschethana (Recovery from relapsed state)**—In this process, the camp organizers bring the relapsed patients to the SKDRDP office on the same day of relapse, counsel them, and advise them to maintain abstinence. These patients are more likely to experience relapse as a process of recovery rather than failure of an individual or treatment. The camp organizers remind the patients about the decision they made to abstain from alcohol during the camp.

### Intervention process in hospital-based camp

**Phase 1: Activities before camp**—Identifying those with alcohol dependence: The hospital administration publishes news about the camp through newspapers or information through other abstinent individuals treated earlier in the hospital and advises them to bring the individuals with regular alcohol use to the hospital camp. Information about the camp in the hospital and the date would be provided on the banners and posters. The hospital would provide all the needed resources for the camp.

**Phase 2: Activities during the camp**—Treatment: The treatment team comprises two psychiatrists, four primary care physicians to look after the physical complaints, one yoga therapist, ten counselors, four nursing staff, and two support staff members who would be available throughout the camp. Pharmacotherapy consists of managing withdrawal symptoms and administering anti-aversion therapy using disulfiram, prescribed by a team of psychiatrists and primary care physicians. Non-pharmacological therapy: psychoeducation sessions consist of alcohol as a disease, family members' role in recovery, codependency among caregivers and effects on children, yoga and stress management, early warning signs, risk factors for relapse, the importance of follow-ups and medication adherence in

the treatment of alcohol dependence, the importance of attending Alcoholics Anonymous meetings, and ill effects of smoking. Trained counselors in the hospital would provide all these sessions

Recreational and religious activities: All the patients participate in daily yoga sessions for 1 h, watch television, and play indoor games. Everyday evening, cultural programs are performed by nursing college students. Patients would be motivated to perform bhajans.

Family session: On the sixth day of the camp, family meetings would be held, and patients would be educated about alcohol dependence is a brain disease and about the role of family members in recovery.

Alcoholics Anonymous (AA) meeting: The AA members would organize an AA meeting every day except on the first day of the camp. The AA members used to share their experiences and how the AA meeting helped them to maintain abstinence and attain recovery.

On the last day, patients would be referred and linked to a local hospital in their native place. At the time of discharge, all patients would be given 10 days of free medication and advised to come for follow-up with their family members after one week of discharge.

## RESULTS

The mean age of the respondents in the CBC group was lesser ( $34.7 \pm 9.3$  years) than the HBC group ( $39.5 \pm 8.8$  years). Most respondents had less education in CBC ( $5 \text{ years} \pm 3.6$ ) than the HBC participants ( $8.0 \pm .31$ ). Most of the respondents in both groups employed semi-skilled laborers working in the private sector. The two groups were comparable in most demographic profiles except for age and education. There were significant differences between the two groups regarding age and education [Table 1].

During the preassessment, both groups were comparable regarding alcohol-related clinical variables except for the mean duration of alcohol consumption, severity of alcohol dependence and AUDIT score, and positive family history. The CBC respondents had higher scores in AUDIT ( $30.3 \pm 6.3$ ) than the HBC respondents ( $25.7 \pm 5.2$ ). This difference is statistically significant ( $t = 3.24, p = .002$ ). The respondents in both camps had a mean score of more than 30 on the SADQ, indicating severe alcohol dependence. The mean QoL score was  $82.06 (\pm 9.08)$  for the CBC and  $86.56 (\pm 11.70)$  for the HBC, indicating that both groups had neither excellent nor poor QoL [Table 2].

During the posttest, HBC respondents had a lesser intake of alcohol during relapse (12.5 units per day) than the CBC group (16.1 units per day). This difference was statistically significant ( $t = 2.83, p = .01$ ) [Table 3].

Pre- and posttest comparisons of the mean QoL scores of CBC respondents ( $82.06 \pm 9.08$  and  $86.26 \pm 5.42$ ) revealed a statistically significant improvement in overall QoL after camp treatment ( $t = 2.22, p = .03$ ). However, in the HBC group, there was no statistically significant difference between the pre- and posttest mean QoL scores ( $t = 1.38, p = .18$ ).

Very few (13%) respondents did not come for follow-up CBC, whereas nearly half of the HBC respondents (43%) did not. More CBC respondents (50%) had three regular follow-ups during the 2-month posttest than the HBC group (43%). Fisher's exact test indicated a statistically significant difference in follow-up rates between the two groups ( $\chi^2 = 22$ ,  $p = .03$ ). CBC interventions had a medium effect ( $d = 0.27$ ) on increasing the number of follow-ups [Table 3].

Figure 2 shows a graphical representation of the Kaplan–Meier curve corresponding to the time to lapse alcohol consumption after camp intervention. The median time taken for the first relapse in CBC was 16 days, whereas, in HBC, it was 31 days. Log-rank analysis revealed no statistically significant difference in the median survival time to first lapse between the CBC and HBC groups ( $\chi^2 = 0.51$ ,  $p = .47$ ) [Table 4]. Regression analysis shows that the duration of abstinence alone predicts 52% ( $R^2$ ) of QoL in the CBC camp and 37% ( $R^2$ ) of QoL in HBC.

Hypothesis testing revealed that both camp approaches are effective at attaining abstinence and improving QoL. Hence, the stated hypothesis that “there would be significant improvement in abstinence and quality of life among hospital-based camp participants compared with community-based camp participants” is rejected.

## DISCUSSION

The study compared the outcomes of two different camp approaches for treating persons with ADS (HBC vs. CBC approach). We found that both the camp approaches had participants who were educated and frequently employed. This finding was in concordance with the study by Chavan and Priti.<sup>[17]</sup>

We found that most of the participants in both camps were drinking alcohol for a longer duration of more than 10 years; the majority had a family history of alcohol use and an AUDIT score of above 25. This finding is similar to Murthy *et al.*'s findings.<sup>[20]</sup>

Both the camps differ regarding the provision of financial support. Faith in religion played a crucial role in higher recovery in CBC. Earlier studies reported similar findings.<sup>[17]</sup>

Regarding the QoL of the respondents, both groups had poor QoL during the pretest. Volk *et al.*<sup>[25]</sup> reported that alcohol-dependent individuals had a poorer QoL.<sup>[26]</sup> In our study, the overall QoL of the respondents in CBC increased during the posttest compared with those of HBC. This finding was in contrast to Mary and Ramasamy.<sup>[27]</sup> The study reported no difference between individuals with ADS who received treatment at a hospital- and community-based deaddiction treatment services regarding QoL.

In the CBC, most respondents were abstinent ( $n = 22$ ), and very few people ( $n = 8$ ) had relapsed. Our study showed that respondents in both camps who abstained had significantly better QoL than the relapsed individuals. There was a significant difference between abstainers and relapsers regarding QoL. Peters *et al.* reported similar findings,<sup>[28]</sup> who reported that QoL improves with abstinence and deteriorates with relapse. This finding is in



concordance with those of previous studies.<sup>[29–32]</sup> We found that the duration of abstinence is a significant predictor of the QoL of alcohol-dependent individuals.

Studies reporting the effect size of camp interventions on the treatment outcome of alcohol dependence are rare. We measured the effect size of the camp intervention on abstinence and QoL. The CBC had a negligible effect on enhancing QoL ( $r = 0.27$ ) compared to the QoL before the camp. These findings concur with those of Khan *et al.*,<sup>[33]</sup> who reported that community-based extended psychosocial intervention had a negligible effect on the QoL of alcohol-dependent individuals ( $r = 0.118$ ). Niketha *et al.*<sup>[26]</sup> reported that hospital-based treatment had a more significant effect on the QoL of people with SUDs after 6 months of discharge.

The effect of the CBC on increasing the number of follow-up visits was moderate ( $r = 0.36$ ). The effect of HBC on reducing the intake of alcohol during relapse was more significant ( $r = 0.54$ ). This finding was similar to previous study which reported, treating ADS patients in a hospital setting had a more significant effect on reducing alcohol intake during relapse ( $r = 0.589$ ), reducing alcohol-related problems,<sup>[34]</sup> increasing the QoL and social support, and reducing family burden.<sup>[35]</sup>

All the participants in both camps completed the treatment course. We found that the CBC group fared better than the HBC group regarding the number of complete abstainers, follow-up, more days of maintaining abstinence, and reduced intake of alcohol during relapse. Nadkarni *et al.*<sup>[36]</sup> reported that their systematic review on community detoxification was safe, had high treatment completion rates, had better drinking outcomes, was cost-effective, and had increased access to treatment.

### Strengths

The study used standardized tools such as AUDIT for measuring alcohol dependence, SADQ for severity, and WHOQoL for QoL. There was no premature discharge in either camp. The study included a comparative group (HBC) to compare the community-based camp outcomes. The camp intervention included only individuals with ADS with comorbid nicotine use, and no other substance users were included. Thus, homogeneity was maintained. The study determined the effect size of the camp intervention on abstinence and QoL.

### Limitations

The study had a limited follow-up period of two months, as previous studies suggested that the follow-up period should be a minimum of six months to one year after the camp. The study findings cannot be generalized owing to the limited sample size. The study results can be interpreted considering the limitations of the initiatives the volunteers and staff and community participation in both camps. The higher follow-up rate in CBC might be because the camps were organized in their community, which enabled them to access continuous care services.

## CONCLUSION

Both community and HBC approaches are effective at attaining abstinence. More than half of the respondents in both camps maintained complete abstinence for 2 months. More CBC participants (73%) attained abstinence than HBC (57%). The relapse rate was lower in the CBC (27%) than in the HBC (43%). CBC was effective at increasing the number of follow-ups and decreasing alcohol intake during relapse. The effect of the camp intervention on increasing the number of follow-ups was medium ( $d = 0.36$ ). The CBC had a small effect on enhancing the QoL of treated individuals with ADS during the posttest ( $d = 0.27$ ).

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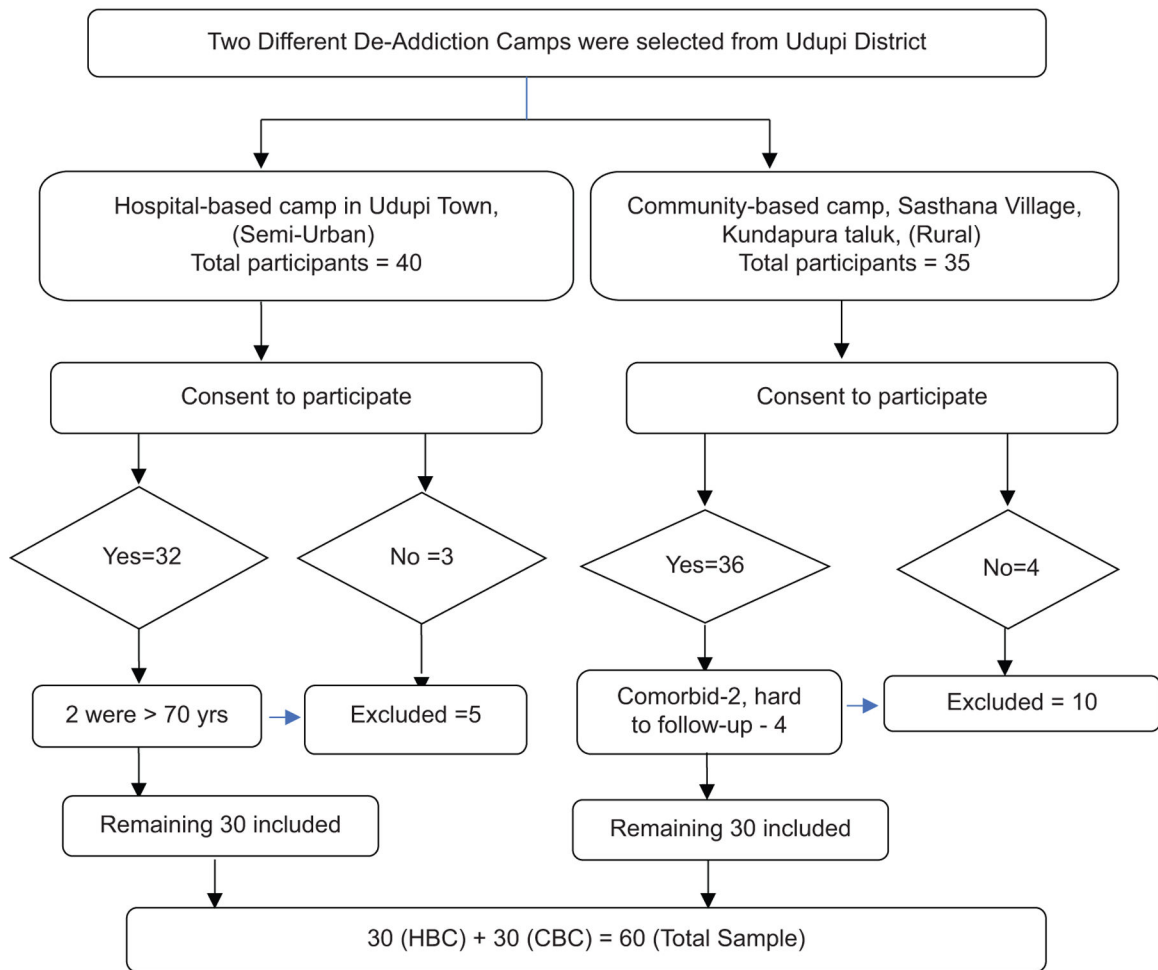
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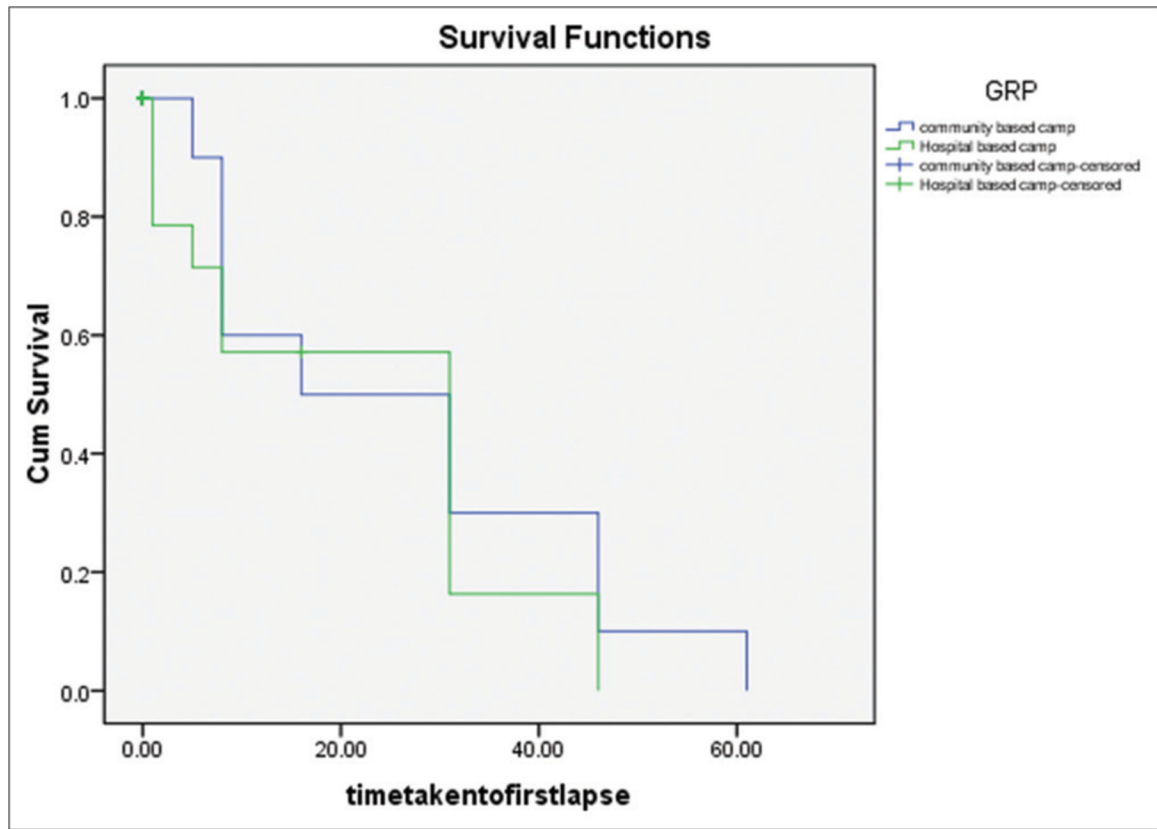
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Ezhumalai: Outcome of camp approach in treatment of alcohol use disorder



**Figure 1:** Flowchart showing sample recruitment. HBC: Hospital-based camp, CBC: Community-based camp



**Figure 2:** Survival analysis showing alcohol use status after the 2nd month of camp intervention

**Table 1:**Sociodemographic profile of the camp participants ( $N=60$ )

Sociodemographic profile	HBC ( $n=30$ ), $n$ (%)	CBC ( $n=30$ ), $n$ (%)	$t/\chi^2$	$p$
Age (years), mean $\pm$ SD	39.5 $\pm$ 8.8	34.7 $\pm$ 9.3	2.05	.049*
Education (years), mean $\pm$ SD	8.0 $\pm$ 3.1	5.0 $\pm$ 3.6	3.14	.003**
Gender				
Male	30 (100)	30 (100)		
Marital status				
Unmarried	10 (33.3)	10 (33.3)		1.0
Married	19 (63.3)	19 (63.3)		
Separated/widower	1 (3.3)	1 (3.3)		
Family type				
Nuclear	12 (40.0)	18 (60.0)		.09
Extended	14 (46.6)	6 (20.0)		
Joint family	4 (13.3)	6 (20.0)		
Religion				
Hindu	28 (93.3)	30 (100)		
Christian	2 (6.6)	-		
Occupation				
Unskilled	6 (20.0)	2 (6.6)	3.45	.33
Skilled	7 (23.3)	12 (40.0)		
Semi-skilled	14 (46.6)	14 (46.6)		
Others	3 (10.3)	2 (6.6)		
Employed				
Government sector	3 (10.3)	-	2.78	.32
Private sector	15 (50.0)	17 (56.6)		
Self-employed	12 (40.0)	13 (43.3)		
Employment status				
Employed	25 (83.3)	24 (80.0)	0.11	1.0
Unemployed	5 (16.6)	6 (20.0)		

\* Significant at  $p < .05$ ,\*\*  $p < .01$ .

HBC: Hospital-based camp, CBC: Community-based camp, SD: Standard deviation

**Table 2:**Clinical profile of the camp participants ( $N=60$ )

Clinical profile	CBC, n (%)	HBC, n (%)	$t/\chi^2$	$p$
Age at initiation (mean±SD)	21.2±4.8	20.9±5.9	0.192	.85
Age at dependence (mean±SD)	26.6±5.6	28.6±6.6	-1.246	.22
Average intake of alcohol (units/per day)	12.1 (5.0)	13.8 (5.7)	-1.161	.25
Mean duration of dependence (years)	8.1 (6.8)	10.9 (8.8)	-1.395	.17
Mean duration of drinking (years)	13.53 (8.8)	18.6 (8.1)	-2.321	.02 *
AUDIT score (mean±SD)	30.03±6.3	25.7±5.2	2.94	.005 **
Severity of ADS (mean±SD)	31.9±9.1	39.5±9.2	3.2	.002 **
QOL (mean±SD)	82.1±9.1	86.6±11.7	1.67	.10
Past duration of abstinence (months)	7.7 (8.6)	10.3 (8.1)	0.87	.39
Duration of camp treatment (days)	7	10	-	-
Onset				
Early	10 (33.3)	9 (30.0)	0.07	1.0
Late	20 (66.6)	21 (70.0)		
Family history of alcohol use				
Present	19 (63.3)	27 (90.0)	5.9	.02 *
Absent	11 (36.6)	3 (10.3)		
Past treatment history				
Yes	2 (6.6)	6 (20.0)	2.31	.13
No	28 (93.3)	24 (80.0)		
History of abstinence				
Yes	12 (40.0)	19 (63.3)	3.27	.07
No	18 (60.0)	11 (36.6)		

\* Significant at  $p < .05$ ,\*\*  $p < .01$ .

HBC: Hospital-based camp, CBC: Community-based camp, SD: Standard deviation, QOL: Quality of life, ADS: Alcohol dependence syndrome, AUDIT: Alcohol Use Disorders Identification Test



**Table 3:**

Outcome of community-based and hospital-based camp after 2 months

Outcome measures	CBC, <i>n</i> (%)	HBC, <i>n</i> (%)	$\chi^2/t$	<i>p</i>	Effect size
QOL of sobers (mean±SD)	88.7±3.6	88.8±2.8	0.09	.92	
QOL of relapsers	79.4 (3.0)	76.8 (7.1)	0.98	.33	
Alcohol use status					
Complete abstinent	22 (73.3)	17 (56.6)	1.83	.18	
Relapse	8 (26.6)	13 (43.3)			
Drinking outcome (mean±SD)					
Average days of abstinence	49±19.97	44±22.36	0.87	.38	0.54
Alcohol intake during relapse (units/per day), mean±SD	16.1±3.2	12.5±2.7	2.83	.01*	
Median time to first lapse (days)	16	31	0.51	.47	
QOL during posttest	86.3 (5.4)	83.6 (7.8)	1.53	.13	
Follow-up					
Lost to follow-up	4 (13.3)	13 (43.3)	2.22	.03**	0.27
1–2	11 (36.7)	4 (13.3)			
3	15 (50.0)	13 (43.3)			

\* Significance at  $p < .01$ ,\*\*  $p < .05$  level.

HBC: Hospital-based camp, CBC: Community-based camp, SD: Standard deviation, QOL: Quality of life

**Table 4:**Median survival time for the first lapse<sup>a</sup>

Group	Median	SE	95% CI		Log-rank (mantel-cox)
			Lower bound	Upper bound	
CBC	16.00	12.12	0.00	39.75	$\chi^2=0.514$
HBC	31.00	5.89	19.44	42.55	df=1
Overall	31.00	5.65	19.91	42.08	$p=.473$

<sup>a</sup>Estimation is limited to the largest survival time.

HBC: Hospital-based camp, CBC: Community-based camp, CI: Confidence interval, SE: Standard error