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FACTORS INFLUENCING ALCOHOL RELAPSE AFTER TREATMENT IN A REHABILITATION PROGRAMME IN KIAMBU COUNTY, KENYA

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ABSTRACT

Background: Alcohol dependence is public health hazard that demands medical intervention. However, alcohol relapse is usually a significant setback commonly experienced after treatment.

Objective: To determine the factors influencing relapse after alcohol treatment.

Methodology: This was a case-control study conducted among alcohol addicts after undergoing treatment. Cases included those who relapsed to alcohol use while the controls were those who remained alcohol free for at least 6 months. The study population were randomly selected from the list of clients in the rehabilitation centres. Questionnaires were used to collect data that included Penn Alcohol Craving Scale to measure craving score. Comparisons were done using chi square and independent t tests. Multiple logistic regression was used to determine factors independently associated with alcohol relapse.

Findings: 134 cases and 131 controls were studied. The two groups were not significantly different by age and gender with majority being males in both groups. There was a higher risk of relapse among those who were not married [aOR 4.0 (95% CI 1.9-8.2), $p < 0.001$], who reported trouble sleeping [aOR 4.8 (95% CI 2.3-9.7), $p < 0.001$] and those who were using other drugs besides alcohol [OR 15.9 (95% CI 7.7-34.0), $p < 0.001$]. Individuals who had alcohol relapse had a significantly higher Penn alcohol craving score (PACS) with a mean of 25.3 compared to a mean of 8.8 in those who remained alcohol-free ($p < 0.001$).

Conclusion: Alcohol relapse individuals have a very high craving score. Being unmarried, having sleep disturbance and use of other drugs besides alcohol increased the risk of relapse.

INTRODUCTION

Alcohol consumption is a common lifestyle habit in the population around the world. A survey in Kenya reported a prevalence of 14% in adults (1). Alcohol use becomes a public health hazard when its use results in dependence. Alcohol-dependent individuals have their lives disrupted by the strong urge to drink and are unable to discontinue the habit in spite of adverse physical and social effect (2). Alcohol dependence require treatment to combat the addiction. Alcoholism treatment interventions are both psychosocial and pharmacologic (3). Despite the availability of interventions, alcohol addicts are usually unable to seek treatment on their own because of their lack of awareness of their sickness and the need for help. In Kenya, a study showed that 5% of alcohol users had ever sought medical treatment for alcohol-related ailments (1). The family and community play a significant role in the efforts to seek alcohol treatment for addicts. However, alcohol relapse is usually a setback for the addicts undergoing treatment. Alcohol relapse can be defined as any consumption of alcohol after discharge from treatment (3). This is a common occurrence among addicts reported at 43.1% in Kenya (4). There are several factors that may trigger the urge to go back to alcohol consumption after completing treatment. Clinical studies have demonstrated that alcohol-dependent people are more sensitive to relapse-provoking cues and stimuli than nondependent people (2). Several biological and psychosocial factors such as alcohol craving, coping strategies, stressful life events and perceived social support can cause alcohol relapse (3,5). Higher craving scores in alcoholics receiving treatment have been associated with more severe alcohol dependence and subsequent relapse. Alcohol relapse has been associated with a

higher level of craving at admission and at discharge (3,6). Also, sleep disturbances have been shown to be common in the early stages of recovery from alcohol dependence and may persist for several months despite continued abstinence hence a risk for relapse to alcohol (7). Demographic characteristics of the recovering addicts may also influence relapse to alcohol use. A study showed that alcohol relapsers had significantly fewer years of education (8). Family history of substance dependence and past history of alcohol relapse have also been shown to be associated with relapse in alcohol dependence (9). The purpose of this study was to determine the risk factors influencing alcohol relapse among recovering addicts.

METHODS

Study design, site and population: This was a case-control study among alcohol addicts rehabilitated in Alcohol and Substance Abuse Treatment and Rehabilitation Programme (ASATREP) in Kiambu County in Central Kenya. The high rate of alcohol consumption leading to alcohol dependence among young people in the county attracted the attention of the government resulting in establishment of ASATREP to deal with treatment and rehabilitation of alcohol dependent individuals. The programme had 17 centres located in different health facilities in the county. The study group comprised of individuals who were rehabilitated in ASATREP and had relapsed while the comparison group included individuals who were rehabilitated and had remained alcohol free for at least 6 months at the time of the study.

Sampling, recruitment and data collection procedures: Family history of alcohol dependence was used in the estimation of sample size where a previous study reported it to be more common at 74.3% in those who relapsed after treatment

compared to 58.1% in those who remained alcohol-free (9). A minimum of 134 individuals were required in each group based on sample size estimation using formula for unmatched case-control studies. Simple random sampling procedure was used to select the cases and the controls from a list of clients obtained from ASATREP computerised system used to monitor weekly progress of treatment. Those eligible had to be 18 years and above and had been on follow up for treatment since 2015. The cases were those who enrolled in the programme but had been drinking alcohol in previous 6 months prior to the study while the controls had abstained from alcohol consumption for at least six months. Those with a history of unstable mental state hence were unable to respond properly to the interviews were excluded.

The eligible cases and controls were contacted using cell phone contacts obtained from ASATREP health records. The purpose of the call was explained to each one of them and requested to meet at counselling or nearest health centres for questionnaire administration at their convenient time. Informed consent was obtained before collecting information on socio-demographic characteristics, family background factors and craving score using Penn Alcohol Craving Scale (PACS). PACS is a validated five-item instrument for assessing craving with numerical ratings ranging from 0 to 6. Higher score indicates higher alcohol craving (10). 134 cases and 131 comparison clients consented to participate in the study. Data collection was done by four trained research assistants who were clinical officers and nurses in the county referral hospital.

Data management and analysis: Data was entered and analysed in SPSS version 23.0 statistical software. The study and

comparison populations were described by summarizing the categorical and continuous variables into percentages and means respectively. Comparisons between the two groups was done using chi square test of association for categorical data and independent t test to compare means. Odds ratios were calculated to estimate the magnitude of risk for each independent characteristic associated with alcohol relapse. Multiple logistic regression model was used to test factors independently associated with alcohol relapse while controlling the effect of confounders. Statistical significance was interpreted at 5% level of significance (p value less or equal to 0.05).

Ethical approval: Approval to undertake this study was obtained from KNH -UON Ethics and Research Committee. Permission was also sought from Kiambu County Health Committee and ASATREP. Informed consent was administered to the study participants and confidentiality observed at all stages.

RESULTS

Alcohol relapse occurred within an average of 12.8 weeks after starting alcohol dependence treatment. At the time of the study, both groups had been on treatment for a comparable duration of time; 19.7 months for the relapsed versus 21 months for non-relapsed ($p=0.171$). Similarly, the two groups were not significantly different in relation to their gender distribution, level of education, employment status and their religion. Marital status was associated with alcohol relapsed ($p=0.010$) with higher likelihood of relapse among the single [OR 2.2 (95% CI 1.3-3.9)], divorced/separated [OR 2.1 (95% CI 1.1-4.2) and widowed [OR 5.9 (95% CI 1.2-29.9) compared to those who were married (Table 1).

Table 1*Socio-demographic characteristics for alcohol relapse and non-relapse cases*

Variable	Relapsed (n=134) n (%)	Not relapsed (n=131) n (%)	OR (95% CI)	P value
Mean age (SD)	34.2 (6.8)	35.5 (5.6)	-	0.093
Gender				
Male	105 (78.4)	107 (81.7)	0.8 (0.4-1.5)	0.499
Female	29 (21.6)	24 (18.3)	1.0	
Level of education				
None	13 (9.7)	6 (4.6)	0.6 (0.1-3.9)	0.610
Primary	72 (53.7)	67 (51.1)	0.3 (0.1-1.5)	0.150
Secondary	42 (31.3)	56 (42.7)	0.2 (0-1.1)	0.063
Tertiary	7 (5.2)	2 (1.5)	1.0	
Marital status				
Married	34 (25.6)	57 (43.8)	1.0	0.006
Single	62 (46.6)	47 (36.2)	2.2 (1.3-3.9)	
Divorced/separated	30 (22.6)	24 (18.5)	2.1 (1.1-4.2)	
Widowed	7 (5.3)	2 (1.5)	5.9 (1.2-29.9)	
Employment				
Yes	5 (3.7)	0	-	0.060
No	129 (96.3)	131 (100.0)		
Religion				
Christian	133 (100.0)	128 (98.5)	-	0.243
Muslim	0	2 (1.5)		

Psychosocial factors associated with alcohol relapse:

As shown in Table 2, the patients who relapsed to alcohol after treatment had started alcohol drinking habit at a significantly older age (20.7 years) compared to their counterparts (19.2 years), $p=0.011$. Peer pressure as a reason for drinking alcohol was noted to be significantly higher in alcohol-relapse group (22.4%) compared to those who remained alcohol-free (8.5%), OR 3.1 (95% CI 1.5-6.6), $p=0.002$. The other reasons for drinking alcohol reported among relapsed patients included frustration

(50.7%), unemployment (17.2%) and enjoyment (9.7%) were not significantly different from the comparison group. In addition, patients who relapsed to alcohol use were more likely to report trouble sleeping (86.5%), OR 6.9 (95% CI 3.8-12.6) and suffering from an illness or a medical condition (21.6%), OR 3.3 (95% CI 1.5-7.1), $p=0.001$. As compared to the comparison group, alcohol-relapse clients reported significantly higher use of other drugs (68.4%), OR 17.5 (95% CI 9.2-33.5), $p<0.001$ and smoking (64.9%), OR 12.4 (95% CI 6.7-23.1), $p<0.001$.

Table 2
Psychosocial factors associated with relapse

	Relapsed n (%)	Not relapsed n (%)	OR 95% CI	P value
Mean age started drinking (SD)	20.7 (5.7)	19.2 (3.5)	-	0.011
Mean age started regular drinking (SD)	25.2 (5.0)	24.7 (4.0)	-	0.357
Main reason for drinking alcohol				
Unemployment	23 (17.2)	32 (24.6)	0.6 (0.4-1.2)	0.145
Peer pressure	30 (22.4)	11 (8.5)	3.1 (1.5-6.6)	0.002
Frustration	68 (50.7)	64 (49.2)	1.1 (0.7-1.7)	0.758
Enjoyment	13 (9.7)	23 (17.7)	0.5 (0.2-1.0)	0.062
Drinking company before treatment				
Friends	109 (81.3)	109 (83.2)	0.9 (0.5-1.7)	0.691
Family	25 (18.7)	22 (16.8)	1.0	
Close family members who drink				
Yes	125 (93.3)	123 (94.6)	0.8 (0.3-2.2)	0.650
No	9 (6.7)	7 (5.4)	1.0	
Belong to an alcohol support group				
Yes	110 (82.7)	113 (86.9)	0.7 (0.4-1.4)	0.341
No	23 (17.3)	17 (13.1)	1.0	
Have trouble sleeping				
Yes	115 (86.5)	63 (48.1)	6.9 (3.8-12.6)	<0.001
No	18 (13.5)	68 (51.9)	1.0	
Finds life stressful				
Yes	122 (91.7)	111 (85.4)	1.9 (0.9-4.2)	0.106
No	11 (8.3)	19 (14.6)	1.0	
Suffer from illness/medical condition				
Yes	29 (21.6)	10 (7.7)	3.3 (1.5-7.1)	0.001
No	105 (78.4)	120 (92.3)	1.0	
Using other drugs other than alcohol				
Yes	93 (69.4)	15 (11.5)	17.5 (9.2-33.5)	<0.001
No	41 (30.6)	116 (88.5)	1.0	
Smoking				
Yes	87 (64.9)	17 (13.0)	12.4 (6.7-23.1)	<0.001
No	47 (35.1)	114 (87.0)	1.0	

Predictors of alcohol relapse

As shown in Table 3, the independent factors associated with of alcohol relapse were being unmarried [aOR 4.0 (95% CI 1.9-8.2), $p < 0.001$], having trouble sleeping [aOR 4.8 (95% CI 2.3-9.7), $p < 0.001$] and use of

other drugs [aOR 15.9 (95% CI 7.4–34.0), $p < 0.001$]. Peer pressure, suffering from other medical conditions and smoking were not independently associated with alcohol relapse.

Table 3*Predictors of alcohol relapse*

Variable	Adjusted OR (95% CI)	P value
Marital status-not married	4.0 (1.9-8.2)	<0.001
Having trouble sleeping	4.8 (2.3-9.7)	<0.001
Using other drugs other than alcohol	15.9 (7.4-34.0)	<0.001

Alcohol craving

As shown in Figure 1, the clients who relapsed to alcohol use had a significantly

higher Penn alcohol craving score (PACS) with a mean of 25.3 compared to those who did not relapse (mean 8.8), $p < 0.001$.

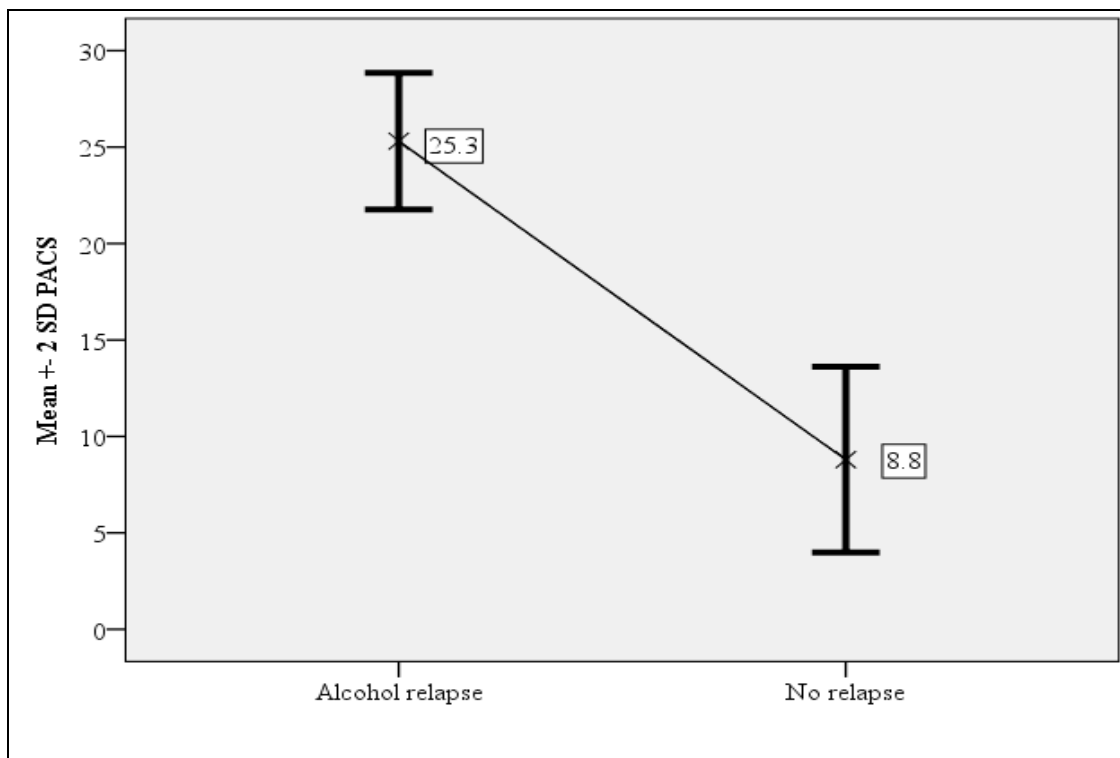


Figure 1: PACS between the relapsed patients compared to the non-relapsed patients

DISCUSSION

Alcohol dependence treatment effectively assists alcohol addicts in breaking free from their addiction. According to these findings, alcohol relapse occurred several weeks into treatment which indicated the potential of all addicts becoming alcohol-free if other factors were taken into consideration during treatment period. There were factors that were found to have an influence on whether the addicts reverted back to alcohol use or not.

Demographically, the relapsed and alcohol-free populations were similar with respect to their age, gender and level of education which was different from findings from previous studies. A study reported increased risk of relapse associated with those with older age (11). Also, another study reported relapsed patients were significantly younger at onset of dependence as compared to their counterparts (9). This study did not measure age at onset of dependence but found the patients who relapsed to have started drinking at a significantly older age than the group that

did not relapse. These findings reported a high number of males who underwent treatment both groups indicating a trend where alcohol dependence was more of a problem to males than females in the area. However, gender of the addict did not influence alcohol-relapse after undergoing treatment. Elsewhere, it was reported that men were at a reduced risk of relapse compared to women (11).

Notably, addicts who were married had a reduced risk of relapsing to alcohol use after starting treatment. Those who were not married were at high risk of relapse. These findings revealed the importance of family being psychosocial support system that encourages the recovering addicts to stay off alcohol during the treatment period. In the contrary, a family with similar alcohol dependence problems may increase the risk of relapse after treatment though this was not determined in this study. A study elsewhere showed that women in postpartum stage who had partners who were risky drinkers had increased risk of engaging in risky drinking (12).

Alcohol addicts who used other drugs besides alcohol were found to be at a high risk of relapsing after alcohol dependence treatment. Similar findings were reported in a previous study among women showing smokers to be at increased risk of engaging in risky drinking (12). Another recent study showed that smokers were at a higher risk of relapsing to drinking at 6 months after treatment compared to non-smokers (8). Besides smoking which was not a very important determinant of alcohol relapse in this study, use of other drugs multiplied the risk of relapsing after treatment. This was a significant finding that informed the necessity of addressing other addictions during alcohol dependence treatment period in order to reduce relapse.

This study found that the alcohol-relapse cases had about 5-fold increased risk of sleep disturbance. This was contrary to a

study that showed no association between alcohol relapse and PSDI sub-scales measuring sleep onset latency, daytime dysfunction, and nighttime sleep disturbance at both admission and discharge (11). The current study did not use PSDI tool to assess sleep disturbance.

Alcohol craving was significantly higher in the relapsed group than the non-relapsed group. Similar findings have been reported in previous studies showing a higher discharge PACS associated with relapse (3). A higher craving score with availability of alcohol cues and stimuli increases the chance of a recovering addict to revert to alcohol use. Peers can be a source of alcohol-related cues which are among the key factors associated with high relapse rates in addictive disorders (13). In this study, peer pressure was associated with about 4-fold increased risk of alcohol relapse among recovering addicts.

CONCLUSIONS

Alcohol addicts who relapsed to alcohol use after undergoing treatment had a very high alcohol craving score. The factors that showed significant influence on the success of alcohol dependence treatment included availability of a family support system and the type of peers in everyday life of the addict. Also, sleep disturbance could be a cue that indicates the risk of alcohol relapse.

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