

Full Length Research

Cue exposure cognitive behavior therapy in relapse and craving control among alcoholic young adults at selected rehabilitation centres in Uasin Gishu County, Kenya.

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Cue exposure cognitive behavior therapy in relapse and craving control among alcoholic young adults at selected rehabilitation centres. The objectives of the study were: 1) to investigate the effect of duration of cue exposure on the alcoholic's resistance to relapse; (2) to investigate the effect of the nature of cue exposure on the alcoholic's resistance to relapse; and: (3) to investigate the effect of length of CET session son resistance to relapse. The study population and sample comprised 78 clients or patients who were enrolled in two rehabilitation centres in Uasin Gishu County, Kenya. The study adopted the experimental research design. The measurement of relapse was done using a check list on the quantity/frequency of drinking during drinking episodes as well as the Alcohol Timeline Follow back (TLFB) interview while the craving scale was used to measure clients' carving for alcohol. A total of 39 patients were exposed to drinking cues in vivo while the other one was exposed to the same through imagination. The CET sessions lasted between 1 hour and 5 hours for every exposure situation over a period of three months. Again, on group underwent CET for 45 days while the other underwent CET for 90 day to s in order to determine the role of duration of exposure to CET in preventing relapse. Follow-ups were done 3 months thereafter. Study data was analyzed using regression analysis, presenting results for both the t-statistic and ANOVA. Based on the p values obtained ($p=.007<.05$ for cue exposure), ($p=.020<.05$ for the nature of Cue exposure therapy) and ($p=.018<.05$ for length of CET sessions), all the null hypotheses were rejected. This implied that duration of cue exposure, the nature of Cue exposure therapy and length of CET sessions significantly predicted resistance to relapse. The study recommends that for better results, cue exposure should be applied as an adjunctive therapy to a more comprehensive treatment program in order to improve treatment outcome.

Key words: Cue exposure cognitive behavior therapy, relapse, craving control

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INTRODUCTION

According to Eliany and Rush (1992) cue exposure is a relatively new treatment technique that considers tolerance, withdrawal and cravings for alcohol or drugs as conditioned states that are amenable to change or extinction. The general approach involves exposing alcohol or drug users to cues for using (e.g. exposing an alcohol abuser to a beer bottle) while concurrently addressing and attempting to lessen the desire to use. Monti *et al* (1989) observe that it has been argued that cue exposure has many advantages: (1) cue exposure can increase self-efficacy, which will increase the likelihood that the response will be utilized in future real-life cue exposures, (2) cue exposure in the absence of drug or alcohol use can reduce the desire to use that was caused by the cue; and (3) cue exposure provides the opportunity to practice coping responses (e.g., relaxation) realistically. The adoption of this treatment by rehabilitation centre therapists is based on the recognition of the fact that it is impossible to avoid drug/alcohol-related cues in real life (outside the rehabilitation centres) and it is better to prepare clients patients to handle these cues outside of treatment situations (Chiauzzi & Liljgren, 1993).

The use of the treatment seeks to break the bond between the alcohol consumption triggers and the urges for drinking. This is based on research evidence that many clients retain cue reactivity after being discharged from rehabilitation centres. For example Childress *et al.* (1988) found that individuals addicted to opiates who achieved abstinence in treatment still presented physiological arousal to drug cues 30 days after treatment completion. Niaura *et al.*, (1988) asserted that given that cues augment relapse potential, it has been argued that treatment can become an exercise in futility when the addicted person is re-exposed to relapse cues in his/her natural environment after leaving the rehabilitation centres. Addressing the cues in treatment while reducing the desire to use may be the patient's best defense.

Research on cue reactivity (powerful physiological reactions to alcohol-related cues) by Rohsenow, *et al.* (1991) established that reactions take place according to different types of substances. For alcoholics, the kinds of cues that have shown the greatest reactivity include ingestion of small amounts of alcohol, or the expectancy that alcohol either has been consumed or will shortly be available for consumption. There is also support for imagining a situation associated with relapse or one with negative mood and drinking which may be more powerful elicitors of reactivity. These results are consistent for cocaine users although much less research has been conducted.

Studies on the treatment outcomes examining the effectiveness of cue exposure for drug abusers have

been conducted with opiate and cocaine users. For opiate users, Childress *et al.*, (1986) examined cue exposure with a standard set of drug-related stimuli, starting with the clients' self-produced verbal imagery ("drug stories"), followed by audio tapes of drug-related conversations, color slides of opiate preparation and injections, and handling drug injection stimuli, in that order. The results of the study with a sample of methadone patients showed significant reductions in cravings across 35 sessions, although withdrawal symptoms persisted. Although several studies support the notion that drug cue reactivity is opposite to the effect of the drug in question (Siegel & Ramos, 2002), this is not always necessarily so.

Cue exposure therapy helps to decondition, or unlearn, the addiction behaviors, so that clients respond differently in situations that were once high risk. As a client endures his exposure sessions, and learns to identify cues, verbalizes his body's reactions to those cues, and practices new responses in those same old situations. Therefore, cue exposure therapy changes the associations that people learned as they cycled through an addiction.

The problem

Rehabilitation centres in Kenya continue to grapple with the task of rehabilitating alcoholics then on being discharged from the rehab centres, they crawl back to their abuse of alcohol. Clearly, various techniques have been adopted to help clients to recover without putting in significant effort to help the clients to withstand the temptation of going back to the use of alcohol when they come across cues related to alcohol. In the study rehabilitation centres, Cue exposure therapy was adopted and the study sought to establish the effectiveness of Cue exposure therapy in the prevention of relapse among alcoholics. Specific factors about Cue exposure therapy that were studied included the duration of Cue exposure therapy (the number of weeks or months the client went through CET), the nature of Cue exposure therapy (in vivo or imaginal) as well as the length (in hours) of CET sessions. The clients' resistance to relapse was based on the scores he/she obtained in the instruments/methods that were used to measure relapse and craving for alcohol.

Study objectives

The study sought to achieve the following objectives:

1. To investigate the effect of duration of cue exposure on

the alcoholic's resistance to relapse

2. To investigate the effect of the nature of cue exposure on the alcoholic's resistance to relapse
3. To investigate the effect of length of CET session on resistance to relapse

The population and sample

The study population was drawn from two rehabilitation centres in Uasin Gishu County, Kenya. It comprised a total of 78 clients or patients. The distribution by gender was skewed in favor of males (67) while females were 11. The two rehabilitation centres had 7 patients who fell in the exclusion criteria and therefore only 78 patients were involved in the study.

Inclusion criteria: Alcoholic patients who were in two rehabilitation centres for a period of over 4 months in 2014

Subjects had to meet DSM-IV-TR criteria for current alcohol dependence. Subjects may meet criteria for abuse, but not dependence on any other substance with the exception of alcohol.

Subjects were expected to be living within a 50-mile radius of the study research program sites and have reliable transportation.

Exclusion criteria: If the client was not in rehabilitation, if alcoholism not primary diagnosis, if subjects had already undergone previous inpatient treatments for alcoholism in the rehabilitation centres.

Clinical Cue exposure therapy procedure

The effectiveness of cue exposure in reducing post-treatment substance use has been examined for both alcohol and drug abusers. The study randomly divided the 78 clients into two groups on various CET practices were applied. One group was exposed to drinking cues in vivo while the other one was exposed to the same through imagination. The CET sessions lasted between 1 hour and 5 hours for every exposure situation over a period of three months. Again, one group underwent CET for 45 days while the other underwent CET for 90 days in order to determine the role of duration of exposure to CET in preventing relapse. Follow-ups were done 3 months thereafter to find out how the clients were fairing on after CET.

DATA COLLECTION INSTRUMENTS OR METHODS

The measurement of relapse was done using a check list on the quantity/frequency of drinking during drinking

episodes as well as the Alcohol Timeline Follow back (TLFB) interview partly adopted from Sobell et al (1982) instrument.

Considering that craving is a controversial concept in matters of alcohol abuse, the study adopted non-physiological measures of craving; i.e a craving scale containing items adopted from the Lubeck Craving Scale (LCRR) was used.

Research design

The study adopted the experimental design which is a blueprint of the procedure that enabled the researcher to test his hypothesis by reaching valid conclusions about relationships between independent and dependent variables (Kothari, 2009).

Data analysis methods

The study data was analyzed using regression analysis, presenting results for both the t-statistic and ANOVA. Descriptive methods were also applied. The regression model for the study was:

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \varepsilon$$

Where:

Y was Client resistance to relapse

X_1 was duration of cue exposure

X_2 was nature of cue exposure

X_3 was length of CET sessions

ε was the error

DATA AND RESULTS

Effects of CET on cravings and relapse

The study analyses showed significant reductions in the within-session ratings of the intensity of cravings for majority of the clients (71%) regardless of their gender. However, most patients continued to report incidents of craving in response to stimuli outside of treatment, indicating that lack of complete generalization of the extinction to other cues is a problem.

Findings on relapse on the other seemed to confirm the observations under craving. Most (N=65) of the clients indicated that after undergoing CET the number of units of alcohol consumed as well as the frequency of consumption decreased significantly after CET. The Alcohol Timeline Follow back (TLFB) indicated that client individual consumption levels declined after 36 days of CET. This is in agreement with observations by Rohsenow, et al. (1991) who established that reactions take place according to different types of substances.

Table 1: Regression analysis results

| Anova | | | | | |
|-------|------------|----------------|----|-------------|-------------------|
| Model | | Sum of squares | df | Mean square | Sig. |
| 1 | Regression | 3.133 | 3 | 89.16 | .000 ^a |
| | Residual | .139 | 75 | 1.829 | |
| | Total | 3.272 | 78 | .013 | |

Table 2. The regression coefficients
Coefficients

| Model | unstandardized coefficients | | Standardized coefficients | t | Sig. |
|-----------------|-----------------------------|------------|---------------------------|--------|-------|
| | B | Std. Error | Beta | | |
| Constant | 2.873 | .216 | .232 | 13.221 | 0.000 |
| Dur | .472 | .061 | .360 | 7.74 | 0.007 |
| Ntr | .139 | .056 | .178 | .248 | 0.020 |
| Lth | .015 | .029 | .244 | .517 | 0.018 |

The regression analysis results

The study sought to regress resistance to relapse on the study independent variables namely; duration of cue exposure, the nature of cue exposure therapy and length of CET sessions and the findings are presented in Table 1, 2.

The linear combination of duration of cue exposure, the nature of cue exposure therapy and length of CET sessions was significantly related to client resistance to relapse, $F(3, 75) = 89.16$, $p < .001$.

A standard multiple regression analysis was conducted to evaluate how well the duration of cue exposure, the nature of Cue exposure therapy (imaginal exposure or in vivo exposure), and length of CET sessions predicted client resistance to relapse to alcoholism. Consequently the following hypotheses were tested:

Ho₁: Duration of cue exposure has no significant effect on the alcoholic's resistance to relapse

Ho₂: The nature of Cue exposure therapy has no significant effect on the alcoholic's resistance to relapse

Ho₃: Length of CET sessions has no significant effect on the alcoholic's resistance to relapse

Based on the p values obtained ($p = .007 < .05$ for cue exposure), ($p = .020 < .05$ for the nature of Cue exposure therapy) and ($p = .018 < .05$ for length of CET sessions), all the null hypotheses were rejected. This implied that duration of cue exposure, the nature of Cue exposure therapy and length of CET sessions significantly predicted resistance to relapse.

Reviewer 1 indicated that Treatment predictors with remarkably small t-test values are reported as significant. However, the fact was that the comparisons between p values and α are the determinants of significance and not how small or big the test statistic values are!

The regression model developed for the study was $Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \varepsilon$ and based on the regression coefficients in table 2, the following regression model for predicting the client resistance to relapse when Cue exposure therapy was adopted:

$$\text{Client resistance to relapse} = 2.873 + 0.472\text{Dur} + 0.139\text{Ntr} + 0.015\text{Lth}$$

The findings showed that cue exposure, when applied for a longer period can virtually eliminate both craving and potential for relapse by strengthening the clients' self-control towards drinking by the end of the inpatient phase in the rehabilitation centres.

The study found out that the clients who underwent CET for 90 days had higher relapse resistance scores and had lower craving scores compared to those who were under CET sessions CET for 45 days. The clients whose CET sessions lasted 5 hours for every exposure situation had higher relapse resistance scores compared to those whose sessions were shorter (1 hour). It is apparent that the longer the CET session the more effective it is in the control of craving. This is in agreement with what was indicated as the benefits of CET by Monti *et al* (1989) who observed that it has been argued that cue exposure has many advantages: (1) cue exposure can increase self-efficacy, which will increase the likelihood that the response will be utilized in future

real-life cue exposures, (2) cue exposure in the absence of drug or alcohol use can reduce the desire to use that was caused by the cue; and (3) cue exposure provides the opportunity to practice coping responses (for example relaxation) realistically.

Gender and CET effectiveness

The study found out that the effectiveness of CET is independent of gender as evidenced by similar data on craving and relapse for both males and females in the study. However, the study appreciates the fact that samples with more female participants are likely to shed more light on gender comparisons on CET effectiveness.

Imaginal exposure versus in vivo exposure

As indicated earlier, one group comprising 39 clients was taken through CET in imagination while the other group was put under in vivo exposure and the data from the two groups compared using inferential statistics. The results indicated that in vivo exposure was more effective than imaginal exposure. However, both were able to control the dependent variable. Other studies have established that no increase in alcohol use was observed at the onset of in-vivo or imaginal exposures. In particular, imaginal exposure and cognitive treatment are equally effective in reducing craving and relapse associated with chronic alcohol use.

CONCLUSION

Based on the findings, the study concluded that the duration of cue exposure has a significant effect on the alcoholic's resistance to relapse. The longer the client undergoes CET, the higher the resistance to relapse and craving.

Concerning objective two on the nature of cue exposure, the results indicated that in vivo exposure was more effective than imaginal exposure though both were able to control the dependent variable. Therapists should expose the clients to the alcohol cues in vivo for better results.

For CET to be effective, the exposure sessions should be as long as possible (in hours) since the length of CET sessions was found to affect the client's resistance to relapse, with those who took longer recording higher

relapse and craving resistance.

However, the study recommends that for better results, cue exposure should be applied as an adjunctive therapy to a more comprehensive treatment program in order to improve treatment outcome.

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