

Alcohol User Profile after a Brief Motivational Intervention in Telephone Follow-up: Evidence Based on Coping Strategies

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Abstract

Despite the promising results which were achieved under different intervention programs in alcohol abuse, its beneficial effects seem to vary among patients. In this way, a variable of interest might be the way to deal with a specific situation. Not surprisingly, escaping addiction has also been studied as an underlying ineffective strategy. Thus, to assess the effect of brief motivational intervention on coping strategies, a 6 months treatment was carried out in alcohol abusers. Moreover, differences among these patients' profiles were examined according to their coping outcomes. The survey was conducted by telephone, employing the Coping Behaviours Inventory (CBI) as a dependent measure. A sample of 120 participants took part in the study. Participants were randomly assigned to 2 groups: Intervention (IBM) or control (without intervention). The analysis of the participants' profiles resulted in 3 different groups: i) Most of the participants were in the control group and did not stop drinking, ii) All participants were in the control group and stopped drinking, and iii) All the participants were in the experimental group and almost all of them stopped drinking. With regards to coping strategies, participants in the last group showed better CBI scores. The results help to better understand the profile of users of alcohol following treatment, as well as the kind of strategies that they might use to stop substance use. They also depicted a more homogeneous coping pattern for those participants after intervention and some unusual profile features among the control group.

Keywords: Addictive behaviour; Alcoholism; Motivational interviewing

Introduction

Although a vast number of effective treatments have been developed with regards to alcohol abuse, there exists a higher rate of relapse among this profile of patients. In this way, several approaches have been developed in order to prevent relapse, with treatment being an essential key to abstinence [1,2]. Telephone support is one of the most widespread treatments of the last decade. In particular, it allows the overcoming of barriers such as time, stereotypes and distance. According to some research, this treatment is not only an accessible option, it also has proven its efficacy under counselling through Brief Motivational Intervention (BMI) [3,4]. BMI is an adaptation from the motivational intervention that was designed for brief contacts in the basic healthcare units and can be offered through telephone plus supplementary material that is provided for this [5-7]. This approach aims to change the user's behaviour and examine any increase in self-efficacy. The follow-up is customized and focuses on the individual, who plays an active role. In this perspective, some studies demonstrate the effectiveness of IBM [8,9]. Signor et al. [3] showed that in 6-month follow-up period, 70% of the BMI group had quit alcohol consumption compared to 41% of the participants in the control group. In a study by Ward et al. [10] the participants who received the BMI treatment were significantly more likely to reduce their alcohol use than those who did not; no effect was identified for other substances. Moreover, the cessation of drug use is sought by planning coping

strategies that already are or will be used by the individual. More precisely, this is of particular interest in risk situations and relapse prevention [11].

Relapse—a return to the previous consumption pattern—is a part of the change process that is often related to individual learning and conscience about the problem [11]. The ability of an individual to use effective coping strategies to deal with high-risk situations has been described as a crucial factor to prevent relapse. Thus, maintaining abstinence after use cessation is related to the number, frequency and efficacy on the use of these coping strategies. To identify, understand and replace a coping strategy if needed, is a subject of effectiveness in the interventions [11]. However, the patient profile after an Intervention might suffer changes. Thus, understanding these changes might shed light on the proper use for a cessation therapy, such as the BMI or its modalities through phone counselling.

Objectives

The aim of the present study was twofold. First of all, to examine the alcohol user profiles after six months of BMI therapy in a phone counselling service in comparison with a control group. This will be carried out through a cluster analysis. Secondly, to evaluate the participant's coping strategies with regards to the identified groups in the previous objective.

Method

Participants

From a total sample of 4688 alcohol users, among other drugs eligible for the study, a final sample of 456 (9.7%) were randomized into a control or BMI groups. All alcohol users who called the phone counselling service expressed their intention to quit (n=456) and took part voluntarily in the study. This service provides telephone counselling to drug users and their families under a BMI treatment aimed to increase motivation for behavioural change and planning.

In terms of adherence to the treatment, a number of 120 participants remained in the follow-up program for six months, where 75.8% male, 65.6% not married and had mean age of 32.4 years (sd=10.8), 70 (58.3%) had been assigned to the control group and 50 (51.7%) to the BMI group.

Data collection

Data were collected after the users accepted to take part in the study. This involved an acceptance of an informed consent. The study was approved by the Committee of Research Ethics of the Federal University of Healthcare Sciences of Porto Alegre UFCSPA under protocol no. 1215/10. The data collection took part from October 2011 to October 2012. The whole process is described more precisely in Figure 1.

Procedures

The study comprised a randomized clinical trial. Randomization was performed using specific software created for the procedures of the phone counselling service, which enabled randomly assigning the sample subjects into the control group (minimal intervention) or BMI group.

In the BMI group, the users received counselling using BMI, screening scales and questionnaires to assess consumption. Each follow-up session had an approximate duration of 60 min. In the control group, the users only received information and the same evaluation on screening scales and consumption assessment questionnaires that were applied in the BMI group. Therefore, their sessions were shorter, approximately 40 min.

In each group, phone appointment was scheduled with the users to continue follow-up, which lasted for six months. Follow-up was scheduled starting from the date the user contacted the centre to quit the drug, i.e., 1, 3, 7, 30, 60, 90, or 180 days later. Moreover, a letter of confirmed phone appointments, as well as other support material with brochures on alcohol use and behavioural change (provided by the National Secretary of Drug Policies) [3] were sent through the post.

The Coping Behaviours Inventory CBI (5) questionnaire was not always applied in each session in order to avoid any bias on the results because of repetition. This was applied after 7 days from the first session and after 6 months. When the reactive calls did not occur (subjects did not return the follow-up calls), pro-active calls (from the phone counselling service to the subjects) were made by the study researchers.

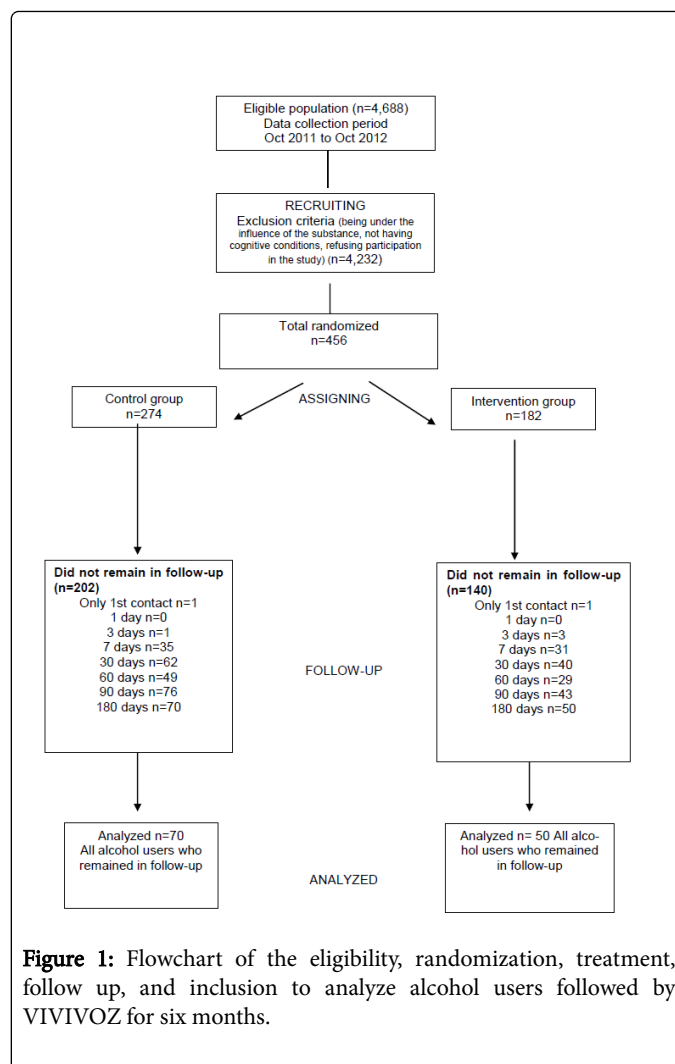


Figure 1: Flowchart of the eligibility, randomization, treatment, follow up, and inclusion to analyze alcohol users followed by VIVIVOZ for six months.

Measures

Semi-structured interviews were applied over the telephone including questionnaires on sociodemographic data, consumption and addiction assessment scales to assess the user's motivational status, and an inventory to identify their coping strategies. The questionnaire was based on drug-use surveys, which have been widely employed in Brazil [12,13].

In order to identify the coping strategies used by the alcohol addicts to cease consumption, the Brazilian version of the CBI, adapted to phone counselling on the Brazilian population, was employed [14]. The inventory approaches coping aspects particularly associated with alcohol consumption and comprises 36 items that show situations experienced by alcohol users during the abstinence process. This tool comprised four factors: positive thinking, negative thinking, distraction/avoidance and social support. The answers followed a Likert scale of 4 points: 0: Usually, 1: Often, 2: Sometimes, and 3: Never. The score of each CBI factor was obtained by adding up the answers of the total raw score or by dividing the total sum by the number of items to obtain an average. Lower scores mean the strategies were used more frequently [5].

Data analysis and design

Data were analysed using the software BMI SPSS Statistics for Windows version 23.0 [15]. Descriptive statistics were applied onto the distribution of variables presented in absolute and relative frequency tables. Quantitative data were described as means and standard deviation. In order to verify the change in the scores of the CBI factors between the groups at the different measures in time, a mixed-design analysis was undertaken as follows: 3 (moments) × 4 (CBI factors) × 2 (treatment group) designs. Furthermore, a cluster analysis was performed including the cited variables plus the situation with regards to their outcome (e.g., relapse, quit, among others). This analysis allows us to include both continuous and categorical variables. This was performed under the Log-likelihood test. Finally, a second, mixed-design analysis was carried out following the previous logic. However, the factor group employed was the one suggested under the cluster analysis conducted before. Lastly to examine the role of coping, a one way ANOVA was carried out.

Results

An analysis of the sociodemographic data of the alcohol users included in the study did not indicated significant difference among the experimental and control group in terms of age, education, gender, marital status, salary and occupation (all $p > 0.05$ for t students or χ^2 test with regards to the type of variable selected and underlying characteristics).

In relation to the alcohol consumption characteristics of the 120 participants, 89.9% reported having maintained this use for over five years and most alcohol users (90%) met the criteria for addiction diagnosis. Most users (61.3%) were at an action motivational stage. In terms of associated drug use, 40% of the sample used three or more substances and the combination only of alcohol and tobacco was reported by 16.2% of respondents.

| | | Experimental | | Control | | Cluster 1 | | Cluster 2 | | Cluster 3 | |
|-----------|-----------------------|--------------|------|---------|------|-----------|------|-----------|------|-----------|------|
| | | Mean | SD | Mean | SD | Mean | SD | Mean | SD | Mean | SD |
| Initial | Positive Thinking | 1.21 | 0.71 | 1.33 | 0.63 | 1.55 | 0.61 | 1.14 | 0.67 | 1.09 | 0.68 |
| | Negative Thinking | 1.28 | 0.73 | 1.37 | 0.76 | 1.61 | 0.67 | 1.14 | 0.78 | 1.13 | 0.72 |
| | Distraction-Avoidance | 1.64 | 0.51 | 1.81 | 0.53 | 1.71 | 0.48 | 1.8 | 0.53 | 1.63 | 0.52 |
| | Social support | 1.72 | 0.61 | 1.94 | 0.56 | 2.06 | 0.52 | 1.83 | 0.52 | 1.68 | 0.54 |
| Follow-up | Positive Thinking | 1.22 | 0.72 | 1.1 | 0.68 | 1.51 | 0.62 | 0.94 | 0.62 | 1.19 | 0.76 |
| | Negative Thinking | 1.22 | 0.83 | 1.2 | 0.82 | 1.6 | 0.8 | 0.98 | 0.74 | 1.23 | 0.87 |
| | Distraction-Avoidance | 1.79 | 0.55 | 1.76 | 0.59 | 1.84 | 0.55 | 1.73 | 0.55 | 1.65 | 0.54 |
| | Social support | 1.91 | 0.53 | 1.96 | 0.56 | 2.1 | 0.5 | 1.91 | 0.55 | 1.76 | 0.54 |
| Final | Positive Thinking | 1 | 0.73 | 1.13 | 0.71 | 1.57 | 0.71 | 0.81 | 0.57 | 0.73 | 0.58 |
| | Negative Thinking | 1.11 | 0.71 | 1.39 | 0.8 | 1.66 | 0.77 | 1.13 | 0.78 | 0.97 | 0.68 |
| | Distraction-Avoidance | 1.8 | 0.56 | 1.96 | 0.65 | 2.03 | 0.64 | 1.91 | 0.7 | 1.68 | 0.47 |
| | Social support | 1.99 | 0.6 | 1.99 | 0.56 | 2.2 | 0.52 | 1.93 | 0.59 | 1.82 | 0.62 |

Table 1: Descriptive statistics on the 3 cluster stipulated with regards to post treatment.

Table 1 shows the descriptive analysis on the CBI factors and measurements. As mentioned before, a mixed repeated measure was carried out. First of all, the differences between moments (1st, 2nd and 3rd) did not reach the statistical significance ($F < 1$). On the other hand, the differences between CBI factors were statistically significant: $F = 68.18$; $MSE = 28.92$; $\eta^2 = 0.45$. Moreover, an interaction between moments and CBI factors was found: $F = 5.41$; $MSE = 0.86$; $p < 0.05$; $\eta^2 = 0.06$.

A cluster analysis was also carried out, obtaining 3 different profiles. A 3-solution was proposed by the analysis, where samples were similar in size. Generally speaking, the control group was divided into two sub clusters, whereas the cluster 3 was mostly made up of the experimental

group. In the Cluster 1, the subgroup was made up of 38 participants (35.5% of the global set). The majority of participants were in the control group (68.4%) and did not quit the drug (47.4%). For cluster 2, the subgroup consisted of 38 participants (35.5% of the global set). The full subgroup comprised participants from the control group (100%) and managed to quit the drug (100%). Finally, Cluster 3 had 31 participants (29% of the global set). The full subgroups were participants from the experimental group (100%) and almost all of them quit the drug (96.8%).

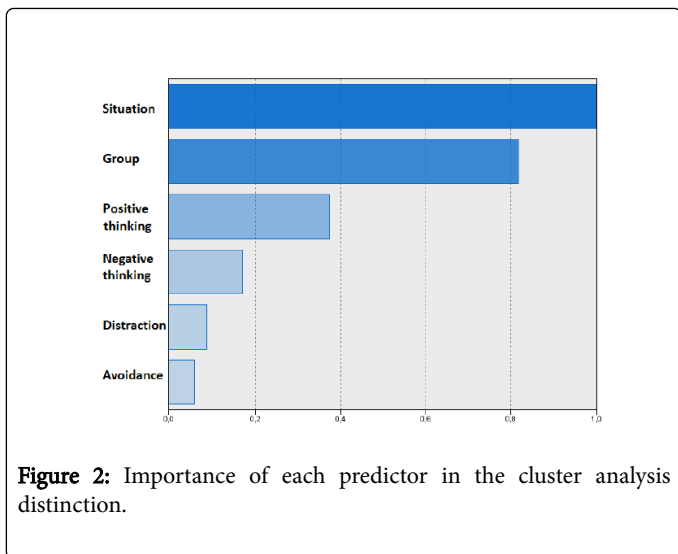


Figure 2: Importance of each predictor in the cluster analysis distinction.

The cluster sizes reason was 1.23. Figure 2 shows the importance of the different predictors (in particular, situation and as expected, group selection). Moreover, Figures 3 and 4 show the particular differences in composition and between other factors, such as the main coping variables: positive and negative thinking. It is notable that cluster 1 differs remarkably in the distribution with regards to clusters 2 and 3. As can be seen from Table 1, the coping factors presented better punctuation for cluster 3 (mostly the experimental group under treatment), than the other subgroups.

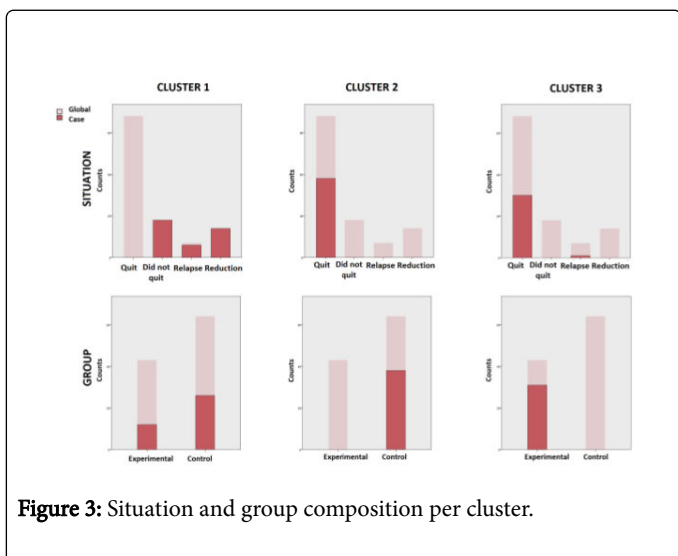


Figure 3: Situation and group composition per cluster.

A mixed repeated measure was carried out following the previous logic of factors and moments but changing the group selection for the cluster subgroups. Moreover, the new descriptions of the new groups (or cluster) were added to Table 1. The differences between moments did not reach the statistical significance ($F < 1$). On the other hand, the differences between factors were statistically significant: $F=71.92$; $MSE=28.13$; $p < 0.001$; $\eta^2=0.483$. An interaction between moments and CBI factors was found: $F=4.90$; $MSE=0.62$; $p < 0.001$; $\eta^2=0.06$. Last of all, an interaction between cluster and factor was found: $F=4.22$; $MSE=0.201$; $p < 0.005$; $\eta^2=0.09$.

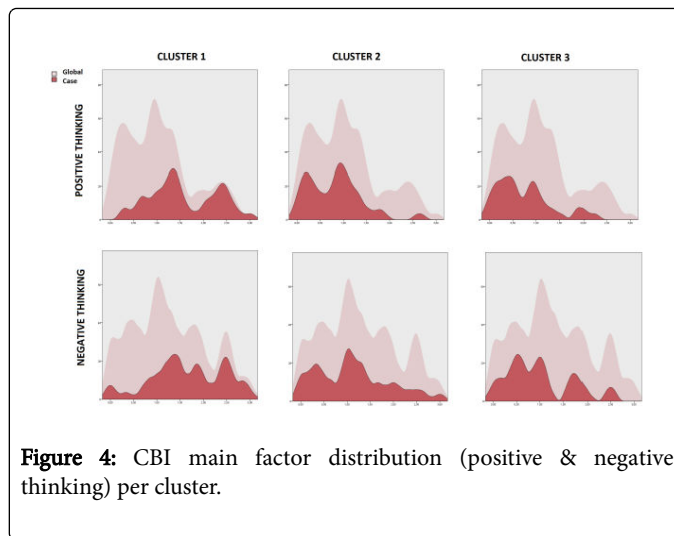


Figure 4: CBI main factor distribution (positive & negative thinking) per cluster.

Finally, in order to examine the role of coping, a one way ANOVA was carried out under the cluster groups obtained as a factor. Cluster 3 showed more coping strategies for “Positive Thinking” ($F=64.55$; $MSE=21.91$; $p < 0.001$), “Negative Thinking” ($F=265.67$; $MSE=50.23$; $p < 0.001$), “Avoidance/Distractio” ($F=10.92$; $MSE=3.90$; $p < 0.005$), and “Social Support” ($F=24.17$; $MSE=6.87$; $p < 0.001$).

Discussion and Conclusion

The aim of this study was to examine the effect of the BMI intervention on coping strategies. Moreover, a cluster analysis on the different profiles after treatment was carried out. The results on the previous analysis of variance showed that, after six months of telephone help, the users of both groups began using the strategies of positive thinking more. It must be pointed out that the BMI deals with issues related to the coping strategies and its main goal is not to increase the use of the strategies, but instead to motivate the individual to change behaviour [11]. In this sense, it is a key to note that, if the individual is flexible towards change, the coping strategies can be effective [16].

After an analysis of the participants profile; three clusters, or better to say, profiles were suggested. In particular, one might possibly conclude that the control group was divided into two groups, the one that quit and the one that was not able to do that. Moreover, the third cluster was almost exclusively made up of the experimental group, which was really similar to the control subgroup that managed to quit. All this suggests that an underlying variable might operate in the normal process, and the treatment applied is more related to this variable. In other words, more research is needed to explain why a subgroup of participants in the control group manages to quit. This difference was not found in the experimental group which suggests that it might be a result of the treatment. Moreover, after an analysis of variance, the benefits of treatment with regards to the other subgroups and coping were shown.

At the beginning of a treatment, the users tend to use behavioural strategies more, such as avoidance/distractio and social support, while by the end they use cognitive strategies more such as positive thinking and negative thinking. This study supports this result since the most employed factor at the beginning of follow-up was social support when the two groups were compared. Social support is any support network the individual uses for help when ceasing the use [5]

by the end of the follow-up, this strategy was used less. In contrast, the cognitive strategies were used more by the end of the follow-up. With that in mind, the time factor must be considered since the coping strategies tend to require adaptations over the abstinence maintenance period [11,17]. The follow-up suggests that the time is directly proportional to the frequency of the strategies, i.e., in order for abstinence to be maintained, the individual must adapt according to his or her needs. Over time, some avoidance/distraction activities, for instance, are no longer effective and a new strategy planning is required. In face of that, it would be interesting to make a “menu” of strategies available to alcohol users. Further studies for longer periods (12 and 24 months) would be important to investigate this need to adapt the strategies. Bear in mind that the studies that investigated coping strategies, including those that used the CBI as a tool, are cross-sectional, thus they do not delve much into the changes that may occur over the abstinence process [18-20]. This aspect is a key to better adapt the coping strategies since changes are required for successfully maintaining abstinence.

On the other hand, it was seen that most of the sample in both groups was already at the action motivational stage at the first contact. At this stage, the individual experiences greater autonomy and begins using strategies to change drug consumption behaviour [16]. This may have enabled the empowering of both the BMI and control groups regarding the similar frequency with which they employed the strategies. Thus, it is supposed that the individuals’ motivational stage played a role in the lack of a significant increase in the use of coping strategies among those in the BMI group since they were all at the action stage. At that stage, the individual is commonly putting into effect an action plan to quit using a given substance. The subjects might not have needed many changes since they were at an advanced stage regarding behavioural change.

This study has several implications, both a theoretical and applied level. For the theoretical one, knowing the alcohol user’s profile and the changes that take place during long abstinence periods is important to prevent relapse. Therefore, developing skills to deal with these changes is crucial to maintain abstinence since knowing the coping strategies directly impacts on the ability to plan such maintenance.

On an applied level, some similarities can be found to the general profile, allowing us to improve the most suitable treatment. In particular, the profile of the subjects in the present study is similar to that of alcohol users who took part in other researches in Brazil [3,21]. Most users are male, above 25 years old, and use alcohol often or very often. Regarding the association between the use of alcohol and other drugs, it is known that poly drug use has received special attention given the relevance of its consequences [12]. The present data show that a small part of the sample consisted of mono-users and that most subjects who concluded follow-up associate three or more substances. The association of alcohol with another substance such as tobacco or cocaine/crack was small. However, 40% of the sample associate three substances including alcohol, which confirms the data of the latest household surveys in Brazil [3,4,9]. One of the limitations of the present study was the significant loss of users during follow-up. The fact that telephone follow-up is also a social support strategy (behavioural strategy) might have played a role in the losses. Such losses can be understood as part of the process of ceasing use. Therefore, not requiring social support and acquiring greater autonomy in this process may justify why the subjects did not make the calls to continue the follow-up. Nevertheless, pro-active calls were

made, with the phone counselling service calling the clients, so that this loss would be minimized.

Another limitation is the different distribution between the groups, with a larger population in the control group (n=70) than in the BMI group (n=50). This may be attributed to the randomization performed by the software or to the exclusion criteria since more subjects in the BMI group were excluded from the study for not concluding the follow-up. In addition, only self-reporting was used and no biomarker was used to confirm abstinence due to the difficulty in collecting biological samples from different regions in Brazil.

To sum up, the results show that the alcohol users, irrespective of being in the BMI or control group, or the different clusters, used positive thinking strategies more by the end of the follow-up in order to maintain abstinence. Furthermore, this difference was even higher for the 3 cluster make-up of the experimental participants mostly. Therefore, this work suggests that telephone counselling has a beneficial effect in terms of employing more positive and negative-thinking strategies for quitting alcohol. Not to mention, that it is an accessible and a free treatment.

For future lines of research, further studies are required with larger samples and longer follow-up time to investigate the impact of BMI over the telephone on the use of coping strategies by alcohol users. Telephone follow-up aiming to help in maintaining abstinence must be more widely explored since this approach proved important among this population and has many upsides, such as being anonymous and free. Moreover, the data of the present study contributes to better knowing the profile of alcohol users and the type of strategies they used to cease substance consumption. More precisely, further research on the drug abuser that manages to quit is necessary. That would shed light on the variables that might operate underneath. The study results allow a customized program to be created to plan the coping strategies aiming at abstinence and its maintenance.

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Collaborations

Constant HMRM, Ferigolo M and Barros HMT participated in the design of this study. Constant HMRM, Fernandes S and Signor L conducted a literature review. Constant HMRM, Figueiró, HMT Barros LR and Tatay CM conducted a statistical analysis. Constant HMRM, Figueiró LR, Ferigolo M and Tatay CM conducted conclusions and discussion. All of authors participated in the review and reading in full of this article.

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