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Individual and family motivational intervention for treatment of alcohol abuse

Intervención motivacional individual y familiar para el tratamiento del abuso de alcohol

Iván López-Beltrán[1], Francisco Javier Pedroza-Cabrera[2], Kalina Isela Martínez-Martínez[3], José María de la Roca-Chiapas[4], Rodrigo Carranza-Jasso[5]

SUMMARY

Alcohol abuse is one of four non-communicable diseases that kill 70 % of the world's population, damaging the individual and his family's functionality. This project's objective was to evaluate the effectiveness of family versus individual alcohol abuse intervention using a transtheoretical model and motivational interview. A quasi-experimental, prospective, comparative, longitudinal, and analytical clinical intervention study was developed. Users with alcohol abuse were recruited with 18-39 years old. The intervention was designed with a brief motivational process for two groups: single-user and user-with-family; additionally, a control group was used. Data analysis was made as unique cases by reviewing each group participant and comparing the groups in general. The results showed that family intervention had a higher percentage of effectiveness than the individual group in all variables studied. These were the stage of change in alcohol consumption (100 % vs. 85 %), family functioning (71 % vs. 57 %), and alcohol consumption pattern (100 % vs. 85 %). In short, this study made it possible to verify that family intervention has a better result over individual intervention in alcohol abuse and demonstrates the feasibility of combining a short motivational model, including the family, as a serious alternative to the user-centered modality.

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ORCID: 0000-0003-2046-1421[1]
ORCID: 0000-0003-4280-3795[2]
ORCID: 0000-0002-3250-180[3]
ORCID: 0000-0002-2563-403X[4]
ORCID: 0000-0001-5105-2466[5]

[1] *Ph.D. student, Autonomous University of Aguascalientes, Mexico. E-mail: psic.ivan@live.com*
[2] *Ph.D. in psychology, Autonomous University of Aguascalientes, Mexico. E-mail: francisco_pedroza@hotmail.com*
[3] *Ph.D. in psychology, Autonomous University of Aguascalientes, Mexico. E-mail: kalinamartinez@hotmail.com*
[4] *Ph.D. in Medical Sciences; University of Guanajuato, Mexico. E-mail: josema_delaroca@yahoo.com.mx*
[5] *Ph.D. in Psychology, Autonomous University of Aguascalientes, Mexico. E-mail: rodrigo.carranza@edu.uaa.mx*
*Corresponding author: Iván López Beltrán, Calle Ganadería Coaxamalucan 68 Morelia, Michoacán, Méx., C.P. 58049. E-mail: psic.ivan@live.com

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Keywords: *Alcohol abuse, individual intervention, family intervention, transtheoretical model, motivational interview.*

RESUMEN

El abuso de alcohol es una de las cuatro enfermedades no transmisibles que matan al 70 % de la población mundial y dañan al individuo y la funcionalidad de su familia. El objetivo de este trabajo fue evaluar la efectividad de la intervención de abuso de alcohol familiar versus individual utilizando un modelo transteórico y una entrevista motivacional. Se desarrolló un estudio de intervención clínica cuasi-experimental, prospectivo, comparativo, longitudinal y

analítico. Se reclutaron usuarios con abuso de alcohol entre los 18 y los 39 años. La intervención se diseñó con un breve proceso motivacional para dos grupos: usuario único y usuario con familia; además, se utilizó un grupo de control. El análisis de datos se realizó como casos únicos revisando a cada participante del grupo y comparando los grupos en general. Los resultados mostraron que la intervención familiar tuvo un mayor porcentaje de efectividad que el grupo individual, en todas las variables estudiadas. Estos fueron la etapa de cambio en el consumo de alcohol (100 % frente a 85 %), funcionamiento familiar (71 % frente a 57 %) y patrón de consumo de alcohol (100 % frente a 85 %). En definitiva, este estudio permitió constatar que la intervención familiar tiene un mejor resultado que la intervención individual en el abuso de alcohol y demuestra la viabilidad de combinar un modelo motivacional corto, incluido el familiar, como una alternativa seria a la modalidad centrada en el usuario.

Palabras clave: *Abuso de alcohol, intervención individual, intervención familiar, modelo transteórico, entrevista motivacional.*

INTRODUCTION

Alcohol abuse is a severe social problem that critically damages individual and family functioning (1). This level of consumption is known to kill 70 percent of the world's population along with three other non-communicable diseases (2), which is why it is "considered a worldwide public health problem" (3). Specifically, in Mexico, it represents the main problem of substance consumption (4), and treatments are implemented mostly at the individual level (5), with very little family involvement. In fact, in a systematic review of 1980-2010 in studies with addictions in Mexico, only one investigation reported work with the family in its intervention (6), in another report (7) 14 models were observed in Mexico that had been tested in alcohol prevention, of which only three intervened to the family, although indirectly. Thus, the family has been neglected as a fundamental variable in this area, both regarding its consequences and its incorporation into interventions.

The consequences of alcohol abuse are significant because they are associated with family, psychological, health, social, and work problems (8-12). In this sense, the family has been recognized as a relevant variable in the origin and maintenance of consumption that carries this type of consequence (13,14). However, it has also been verified that incorporating it leads to better results (14,15). Nevertheless, family interventions in the treatment of alcohol abuse have limitations since they focus mostly on addictions (16-19), or as a separate element (20-22) or with purely systemic models and sometimes even prolonged. (23-24). These have shown that working with the family together in the treatment of substances is functional and necessary. For example, Berg and Miller (23) emphasize problem-solving, using people's resources and knowledge, cooperation, and guidance to the present. Steinglass (24), who works a motivational-like model, develops his integrative approach from systemic therapy, carried out in phases incorporating the whole family. However, as mentioned, these treatments are evoked in addiction or other substances, so there is little research to take a brief approach as part of treatment for alcohol abuse.

Brief treatment is specifically indicated for the level of alcohol abuse (8,25). For the other levels in which it is classified low and high (26) or mild and severe (27), general health advice is suggested, to mild consumption and specialized treatment to high or severe consumption (26). In that sense, it is the brief, and specifically, the motivational intervention, which combines the transtheoretical model of change (MT) the motivational interview (EM), the most efficient scheme in alcohol abuse.

The transtheoretical model of change (TM) was formulated by Prochaska and DiClemente (28), and the motivational interview (MI) was developed by Miller and Rollnick (29). On the one hand, TM explains how people change from a risk behavior to a non-risk behavior (30). According to this model, people go through a series of stages when they decide to change behavior in some area of their life (28).

MI is a useful tool in managing patients, which recovers therapeutic spaces and promotes change (31). It is defined as a direct, customer-centered style to bring about a behavior change, helping customers explore and resolve ambivalences (29). Both models have

specific characteristics for interventions in the consumption of alcohol and other substances.

TM argues that behavior change involves progress through six stages of change: pre-contemplation, contemplation, preparation, action, maintenance, and termination (32), as described in Table 1. In the same way, are recognized from 8 to 10 cognitive and behavioral processes of change: consciousness-raising, self-revaluation, environmental re-evaluation, dramatic relief, self-release, social liberation, reinforcement management, and helping relations, counterconditioning, and stimulus control.

Table 1

Transtheoretical Model of Change Stages

Stage	Description
1. Pre-contemplation	This is the stage at which there is no intention to change behavior in the foreseeable future. Most patients at this stage are unaware of their problems.
2. Contemplation	It is the stage at which patients are aware that a problem exists and are seriously thinking about overcoming it but have not yet committed themselves to act. Contemplatives struggle with positive evaluations of their dysfunctional behavior and the amount of effort, energy, and loss it will cost to overcome.
3. Preparation	It is the stage at which people intend to act in the next month and report some small behavioral changes ('baby steps'). Although they have made some reductions in their problem behaviors, patients at the preparation stage have not yet come to effective action.
4. Action	Stage in which people modify their behavior, experiences, and/or environment to overcome their problems. Action implies the most obvious behavior changes and requires considerable time and energy commitment. Patients at the action stage have successfully changed dysfunctional behavior for a period of up to 6 months.
5. Maintenance	It is the stage in which people work to prevent relapse and consolidate the results obtained during the action, extends from six months to an indeterminate period after the initial action can be considered for life.
6. Termination	Individuals do not experience temptation and have 100 % self-efficacy. They are confident that they will not return to their old and healthy coping patterns. It is as if they have never acquired such patterns. It is a lifetime maintenance

Note: These stages were described by Norcross, Krebs and Prochaska (33).

MI has basic strategies (29):

a) Expressionofempathy:referstothecompression of patient feelings and perspectives without judging, criticizing, or blaming.

b) Creating discrepancy: indicates a rupture between the current and desired behavior.

c) Avoidance of discussion: no need to confront or convince to change.

d) Resistance rotation: when there is resistance to change, there is no imposition, the patient is invited to consider new information.

e) Encouraging self-efficacy: promotes the belief

that people have the necessary skills to carry out their tasks successfully.

It also relies on open questions, which seek to stimulate speech without short answers, reflexive listening, which break obstacles that block or stop the conversation, has a thoughtful thought which that is to support the patient through positive forms; the next strategy would be to summarize, synthesizing information gathered to confirm listening and finally self-motivating statements, which are intended for the user to recognize the problem, expressing concern, intention to change and optimism for this change.

These models have never been incorporated into the family with a short treatment approach. Such being the case, an intervention design that integrates the motivational approach with family involvement in alcohol abuse can be suggested to review whether it is possible to potentialize therapeutic success effects and to contrast whether they can be better than individual interventions only.

Therefore, the research question is this: is family intervention more effective against individual intervention in alcohol abuse using the transtheoretical model and motivational interview? It can be said that this type of treatment has also not had a direct history of research, so it is useful to look at the results.

In this paper we were prompted to assess the efficacy of family intervention versus individual intervention when treating alcohol abuse, using a transtheoretical model and motivational interview.

METHODS

A quasi-experimental, prospective, comparative, longitudinal, and analytical clinical intervention study was conducted. It is a longitudinal study, as it was intervened with participants over time, through regular sessions, making pre-and post-treatment measurements. This study used two experimental groups, single-user (SU) and family-user (FU), plus a waiting list control group (CU). The intervention between the different groups was evaluated to determine if the FU group's efficacy could have better results than the SU and CU. Operationally, they would move forward in the change phase, increase the level of family functioning, and decrease the amount of standard consumption in participants.

The variables studied were the following:

(a) Stage of change; related explicitly to behavior regarding alcohol consumption. Measured with the Health Behavior and Stages of Change Questionnaire instrument (34). In this instrument, the scores of the discrimination coefficient are > 0.74. The overall internal consistency of HBSCQ was 0.384. The HBSCQ specification between internal consistency groups for the men's sample was 0.712, and that for the female sample was 0.378.

b) Family functioning; concerning the user's perception of the user. D detected with the Family APGAR instrument (35). In Spanish validation, test-retest reliability is greater than 0.75. It has a good internal consistency (Cronbach alpha 0.84)2. The original work's validity results in a high degree of correlation (0.80) with the Pless-Satterwhite Family Function Index. The factorial analysis shows that this is a one-dimensional scale, i.e., the five items measure aspects of the same concept (family dysfunction). In Mexico, its average inter-variable correlation was 0.41, and the average inter-variable covariance was 0.159, and the instrument's internal consistency, with a Cronbach alpha of 0.770.

c) Timeline Follow back; (pattern of alcohol consumption) measured in average standard beverage units (36). The test has a test-retest reliability of 0.91. The correlation of consumption between the individual's report and that of collateral is 0.82. With the Alcohol Dependency Scale and the Michigan Brief Alcohol Screening Questionnaire, concurrent validity shows correlations of 0.53.

Previously, for the sample's screening, the classification of consumption levels of the ASSIST test (26) was used. This instrument has validity and reliability at the international level, with a test-retest coefficient of 0.58-0.90 and an internal consistency of 0.80. The test defines a risk score for each substance, classifiable at three

levels: low risk, moderate risk, and high risk. In Mexico, it has acceptable levels of reliability (alpha x 0.85 for the full version and alpha x 0.83 for the abbreviated version)

Users were recruited who met the moderate level of alcohol abuse with ages of 18-39 years. The total sample was 7 participants per group, plus family members in the FU group, who was mostly a participant in each family, all beneficiaries of the General Hospital "Dr. Miguel Silva" from Morelia, Michoacán, Mexico. Participants' data can be seen in the Table 2.

Table 2

Characteristics of the sample in the three groups studied

Characteristics	N (21)	SU group (n=7)	FU group (n=7)	CU group (n=7)
Sex				
Man	13(61.9 %)	05(71.4 %)	06(85.7 %)	02(28.6 %)
Woman	08(38.15)	02(28.6)	01(14.3 %)	05(71.4 %)
Average age	28.1	26	25	33
Marital status				
Single	11(52.4 %)	03(42.8 %)	0	04(57.1 %)
Married	02(09.5 %)	02(28.6 %)	04(57.1 %)	0
Free union	08(38.1 %)	02(28.6 %)	03(42.9 %)	03(42.9 %)
Children				
Yes	09(42.9 %)	04(57.1 %)	03(42.9 %)	02(28.6 %)
No	12(57.1 %)	03(42.9 %)	04(57.1 %)	05(71.4 %)
Schooling				
Elementary	01(04.8 %)	01(14.3 %)	0	0
Middle	05(23.8 %)	03(42.9 %)	02(28.6 %)	0
College	05(23.8 %)	01(14.3 %)	03(42.9 %)	01(14.3 %)
University	10(47.6 %)	02(28.6 %)	02(28.6 %)	06(85.7 %)
Employment				
Yes	16(76.2 %)	05(71.4 %)	06(85.7 %)	05(71.4 %)
No	05(23.8 %)	02(28.6 %)	01(14.3 %)	02(28.6)
Average consumption time in years	14.4	10	10	14
Drug use				
Yes	02(09.5 %)	0	01(14.3 %)	01(14.3 %)
No	19(90.5 %)	07(100 %)	06(85.7 %)	06(85.7 %)
Current disease				
Yes	08(38.1 %)	04(57.1 %)	02(28.6 %)	02(28.6 %)
No	13(61.9 %)	03(42.9 %)	05(71.4 %)	05(71.4%)

The procedure followed a previously planned line (Figure 1). The intervention was carried out with a brief motivational process designed from models tested in the consumption of alcohol, the product of this design is in a manual of intervention. Both interventions handled the same treatment design, only with content adjustments in the group with family. An example of this is that, while in the FU group, the user worked on an individual strategy, his family member worked another focused on their participation in the process, at the end they made an agreement, drawing beneficial conclusions for them, it is also noted that relatives participate only in the intervention sessions, not in the evaluations (Figure 2).

The groups were stratified based on the variables, emphasizing the change stage evaluated during the pre-test to have homogeneity in the baseline. It should be mentioned that the interventions were at the participants' house, which allowed to contain the defection and to be consistent with the stages of change detected in the users that required the greatest motivation to move forward. The data analysis was performed as unique cases by reviewing each participant's group and contrasting them with comparative graphs.

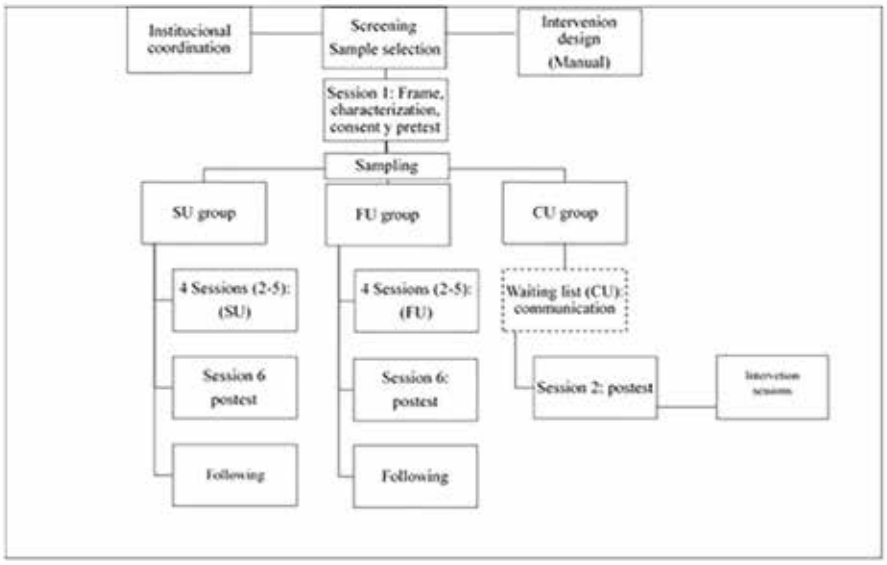

Figure 1. Intervention procedure and design

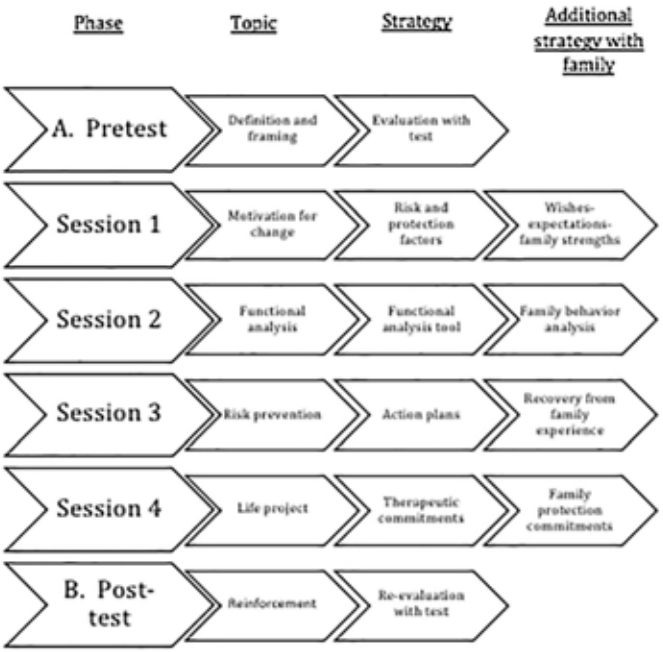

Figure 2. Technical design of the intervention

RESULTS

The results were performed as unique but integrated cases and presented globally. The intervention groups and control groups were tested in each of the variables studied. First, the stage of change is shown, followed by the family functioning, finally, the consumption pattern. The axes of the graphs for each variable must be related as follows. The X-axis corresponds to the process's evolution, usually the pre- and post-evaluation, or the number of sessions for the consumption pattern. The Y-axis refers to the following values for the shifting stage (0-relapse, first pre-contemplation, second contemplation, third preparation, fourth action, fifth maintenance, sixth completion). The level of family functioning (low level 0 to 3 points, average level 4 to 6, and high level from 7 to 10 points). Finally, the consumption pattern corresponds to the beverage units or number of standard cups consumed.

I. Stage of change: In this variable, the SU group showed a stage change towards improvement in 85.7 % of the cases, six of the seven cases, and one case did not present stage modification. In the FU group, 100 % of the cases changed favorably from a minor stage to a greater one. In both groups, all users were installed in the action stage. While the CU group, only one case that is less than 15 % of the cases showed an improvement, the rest remained in their stage or regressed to a lower one, representing 85.7 % of the cases (Figures 3-5).

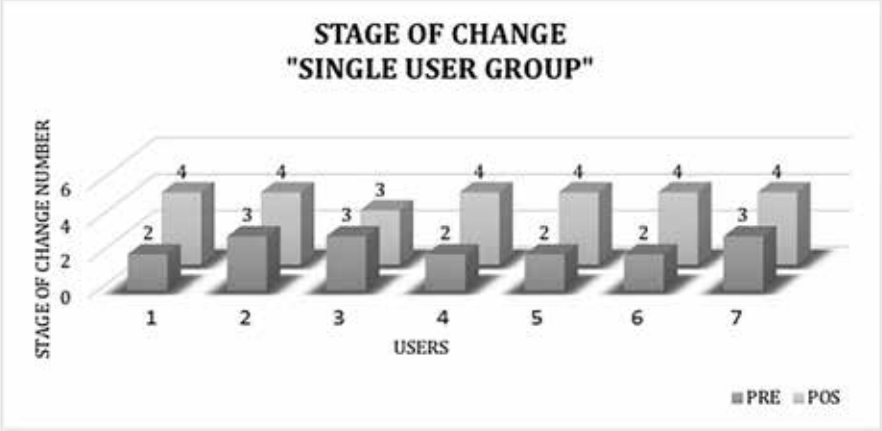

Figure 3. Stage of change single user group: pre-test vs. post-test

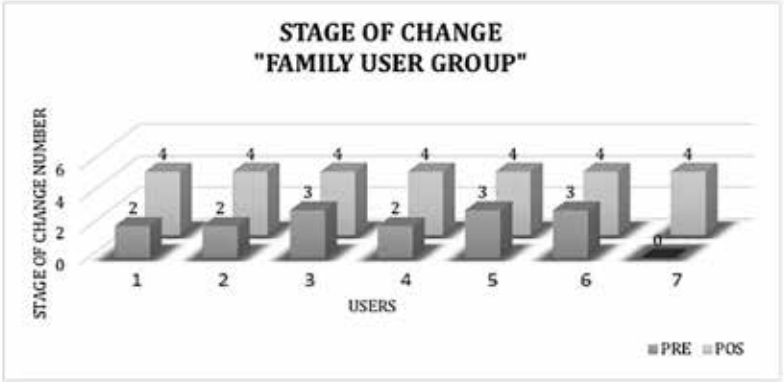

Figure 4. Stage of change family user group: pre-test vs. post-test

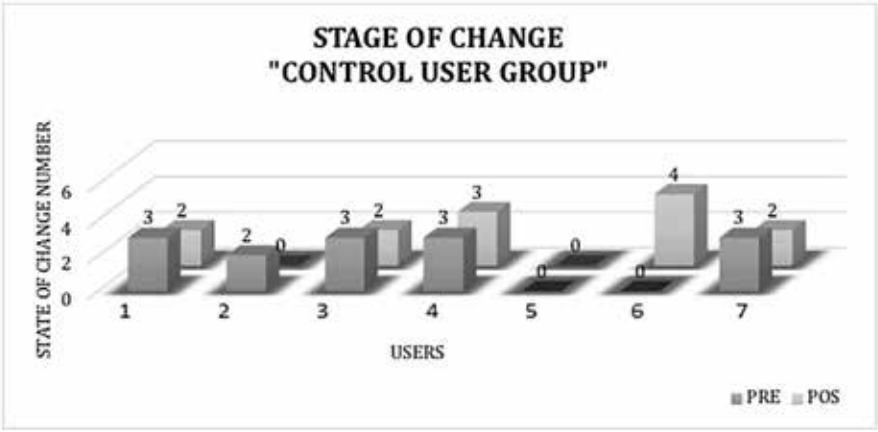

Figure 5. Stage of change control user group: pre-test vs. post-test.

II. Family functioning: In the comparative analysis of this variable, the SU group showed an improvement in functioning by 57.1 % of the cases, that is, four out of seven, instead of two cases, which are 28.5 % remained unchanged, and one case, 14.2 %, decreased their level of family functioning. Five out of seven cases leveled up in the FU group, representing 71.4 % of participants rose the level, and the rest had no movements. However, one case of these remained in the highest level of family functioning since the pre-test. Finally, in the CU group, in two out of seven cases, 28.5 % of the participants increased their family functioning, three participants, equivalent to 42.8 %, had no movement. However, two participants of the latter remained at the highest level of family functioning since the pre-test. Finally, two cases more, representing 28.5 % of cases, had a decrease in family functioning. See Figures 6-8.

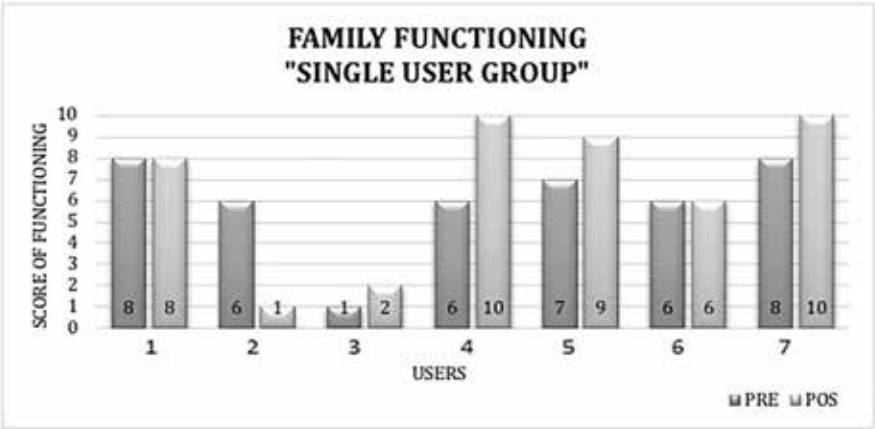

Figure 6. Family functioning, single-user group pre-test vs. post-test.

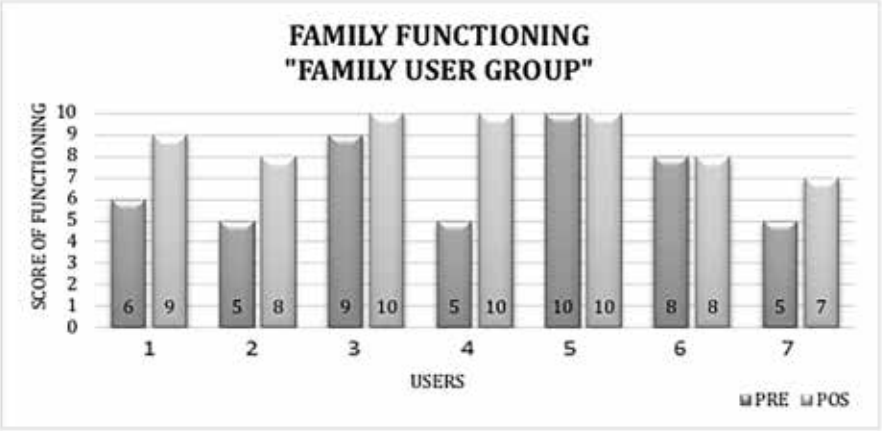

Figure 7. Family functioning, family user group pre-test vs. post-test.

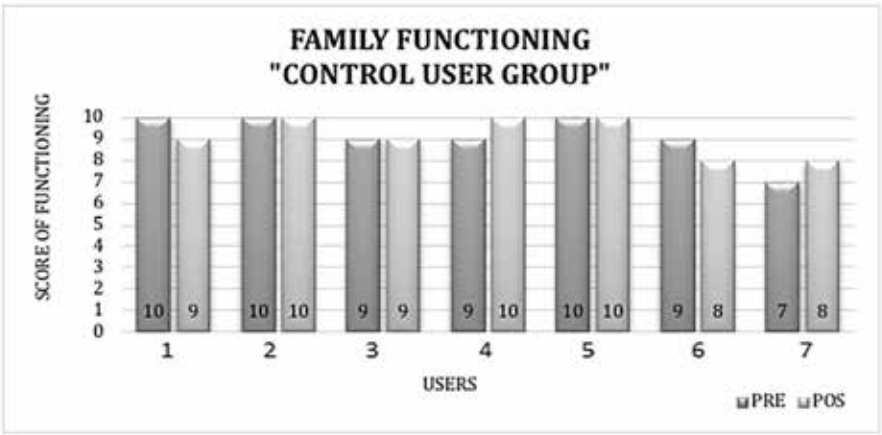

Figure 8. Family functioning control user group pre-test vs. post-test.

III. Alcohol consumption pattern: In comparing the three groups, it was reviewed that the SU group presented an 85.7 %, corresponding to six out of seven cases reduction in their average of standard drinks among their cases. In one case, 14.2 % increased his consumption. For the FU group, 100 % of cases decreased their consumption. While in the CU group, three of seven participants, 42.8 % decreased their average consumption, and in four of seven cases, 57.1 % increased it. See Figures 7-9.

According to the results, there are noteworthy differences between the groups. The summary of these is shown in Table 3, where it is detected that the FU group showed greater changes or progress than the SU group and the CU.

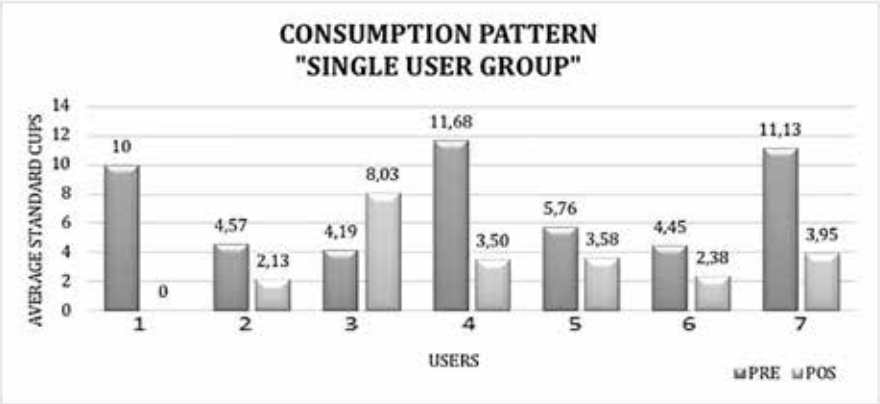

Figure 9. Consumption pattern single user group pre-test vs. post-test.

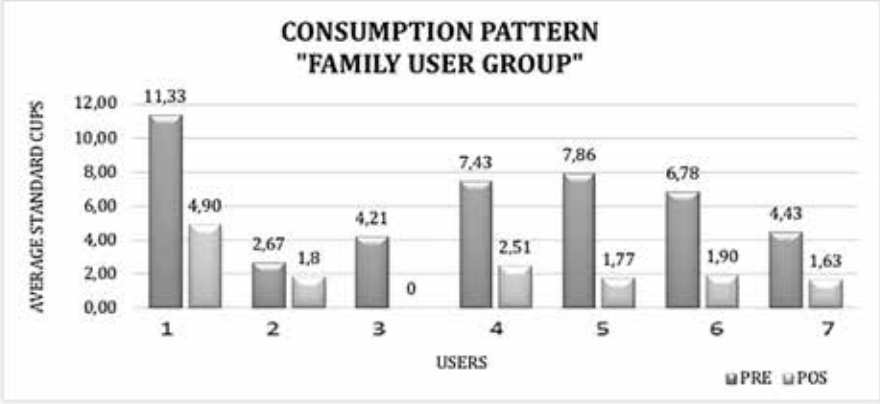

Figure 10. Consumption pattern family user group pre-test vs. post-test.

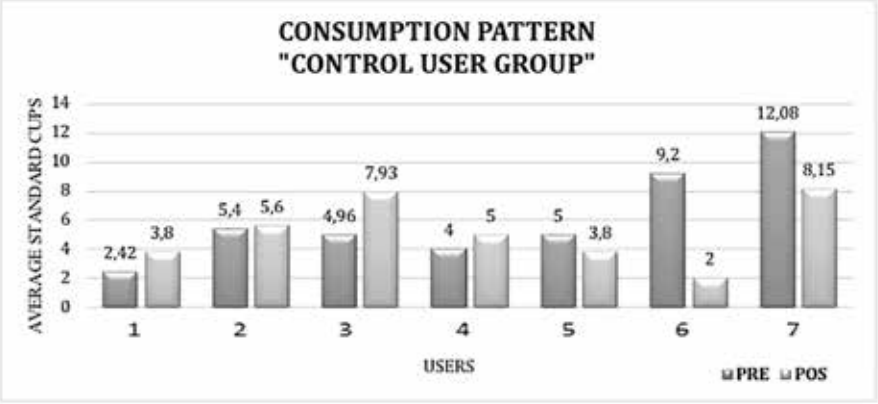

Figure 11. Consumption pattern control user group pre-test vs. post-test.

Table 3

Changes in variables in studied pre-post evaluation groups

Group	Single User			Family User			Control User		
Variable	impro-vement	Worse-ning	no change	impro-vement	Worse-ning	no change	impro-vement	Worse-ning	no change
Stage of change	85.7		14.2	100			14.2	57.1	28.5
Family functioning	57.1	14.2	28.5	71.4		28.5	28.5	28.5	42.8
Consumption pattern	85.7	14.2		100			42.8	57.1	

Note: Quantities represent percentages. It is called retracement to the change against treatment, goals, or user improvements (decreased stage and family functioning and increased average consumption)

CONCLUSION

Alcohol abuse has a severe impact on individual and family functioning. Motivational intervention is very efficient at this level of consumption. Thus, the present research has evaluated the effectiveness of two types of brief interventions, one using the single user, as the topic is usually addressed, and the other using family members together with the user. Thus, in this study, greater efficacy was demonstrated when the family intervenes in the intervention process compared to the single user group, which confirms some studies that consider it, such as Klostermann and O'Farrell (14) McCardy et al. (15). It is important to note that the single user has also made significant progress, which is also consistent with traditional treatment models that focus on the individual.

The various variables show some specificities. It is interesting to note that almost all users were in the stages of contemplation and preparation regarding their change stage. At the close of the intervention, all users in both intervention groups were in the action phase, except a single us group case that decreased in that stage. These results are consistent with the transtheoretical model of the change of Prochanska and DiClemente; that is, when a person does something to change, such as working on an intervention, it is practically a phase of action in his life. Likewise, no user was evaluated at the maintenance stage, as the theory says, required at least six months, and the intervention lasted two to three months. The control group also verifies that no changes are executed if something specific is not done, although there were some improvement cases.

The family functioning variable confirms what seemed to be expected, the group with family involvement has more advances in their performance scores. However, the single user group shows a promising breakthrough. This result supports family approach theories when they point out that change in one individual improves the rest of the family. In the control group, it should be noted where a perception of high family functioning from the pre-test is not observed much variation to the post-test. In the last variable corresponding to the consumption pattern, there were general improvements in the two intervention groups, but it is noteworthy that in the FU group 100 % of its participants improved, a situation that occurred in a lower percentage within the SU group and did not happen with the CU group.

The analysis of these variables seems to consolidate what was noted at the start of the conclusion, being that family intervention has better results than individual intervention in alcohol abuse within the applied intervention model. Because in addition to having better results in the pattern of alcohol consumption and the stage of change of consumption, it also has more progress in family functioning, a situation that has benefited not only the user, but the family simultaneously, which represents a collective benefit, or rather, said to the greater number of people in the same intervention.

In this sense, it can be accepted that, if the family user group has made more progress

against the other groups in all variables and that all users in this group showed improvements, the determining factor in achieving better results is the participation of family members with users because it has been the only differentiating aspect between the groups. This pattern is due to the improvement of family functioning dimensions: participation, affection, degree of growth, adaptability, and resources as enhancing aspects of change against alcohol abuse both at the stage and in the pattern of consumption.

The study's design is an innovative intervention that has brought good results and can serve as an alternative to individualized treatment. A link between family-based intervention and treatment with a brief approach and its usefulness in increasing the efficiency of interventions against alcohol abuse is demonstrated with positive results. In summary, family involvement does improve the outcome, and health professionals should consider it in the treatment of alcohol abuse as a positive model.

In our opinion, we believe that samples can still be larger to determine these differences more firmly. Since it has been one of the main limitations the amplitude of the sample with new participants, which unfortunately was subject to the contingency by the pandemic that is lived since the hospital where the recruitment was made is the most reference for COVID-19 patients and access to all areas was restricted for safety. Another limitation was the impossibility of homogenizing the intervention site, being applied at the participants' home since, as it represented a useful procedure to avoid desertion and motivate participation, not all sites have the same working conditions.

Replication of this intervention is suggested against users of other substances or another age group and new instruments that provide more indicators to support the design. It is also suggested to explore more in the relationship of family involvement with models of short motivational approach to other study areas.

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