

THE USE OF COOPERATIVE GAMES TO TREAT CRACK-DEPENDENT PATIENTS HOSPITALIZED AT A DETOXICATION UNIT



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ABSTRACT

The objective of this study was to evaluate the effectiveness of cooperative games to help dealing with craving and anxiety, as well as to motivate change in the addictive behavior of crack/cocaine-dependent patients hospitalized at a detoxication unit. In order to do that, a quasi-experimental clinical trial, involving 30 male subjects, age ranging from 18 to 50 years, crack/cocaine-dependent users, distributed in 8 groups, was carried out. The instruments used were: social and demographic data sheet; mini-mental state examination; University of Rhode Island Change Assessment scale (URICA); Beck anxiety inventory (BAI) and visual analogue scale (VAS). Cocaine transformed into crack images and videos were presented with the objective to induce craving and, after that, the VAS, URICA and BAI were applied. Afterwards, a Cooperative Game workshop was carried out, and the above instruments used again. A significant difference concerning craving and anxiety symptoms after the use of cooperative games ($p < 0.001$) was found; however, there was no difference in motivation to change the addictive behavior. Therefore, we conclude that cooperative games can be an important instrument to treat crack/cocaine-dependent patients.

Keywords: anxiety, craving, cocaine, motivation.

INTRODUCTION

Cocaine is one of the drugs stimulating of the central nervous system (CNS) with potential use, which has been used since the beginning of our history. As an example, we can mention the indigenous people of South America who already made use of this drug by chewing the coca leaf¹. Currently, there are other ways of cocaine administration such as inhaling or endovenous. Nowadays, there is another way which has been spread among abusers and chemical dependents: the smoked cocaine, better known as *crack*. It is a result of the mixture of sodium bicarbonate, adulterants and cocaine chlorhydrate. When smoked, it produces small particles which are quickly absorbed by the lungs, causing a transient sensation of pleasure, which can be responsible for the beginning of abuse and dependence to the drug².

Crack causes also many physical problems in the respiratory tract and cardiovascular system besides being associated with psychiatric disorders. Moreover, since it is a drug with very low cost in the market, its potential to cause dependence has increased. Such scenario has made this a public health problem. Thus, the search for treatment has tremendously increased².

The treatment of the chemical dependent may occur both in an ambulatory or inpatient. In that period, abstinence is one of the goals to be reached. However, during this phase, some characteristic symptoms occur, such as craving and increase of anxiety, which may, consequently, make the treatment difficult. In addition to that, other aggravating factors such as emotional distress and depression may occur³. It is worth mentioning that craving may be understood not only as the will, but also as anticipation of the positive result referring to the use of the substance, relief from the abstinence symptoms or negative affection and smoking intention, becoming hence a multidimensional view⁴. Craving is positively related with anxiety in some studies⁵⁻⁷.

In order to have the individual increasing his/her possibilities to remain clean, besides reducing these symptoms, it is necessary to work with one of the supporters of the cognitive-behavioral therapy which is motivation to change the dependent behavior⁸.

Every dependent may be motivated for change, since we understand motivation as a state of readiness for change, which fluctuates during the time and possible to be influenced by others⁹.

In a study conducted by Rigotto and Gomes³, with chemically-dependent patients, it was observed that the most difficult for the individuals participating in the research was to continue with the change process. Vital aspects in the recovery process were: rescue of the family bonds, self-esteem return and rediscovery of interpersonal relations. To maintain time filled with some pleasing activity which substitutes the drug and reinforces even more the personal decision not to relapse was mentioned by the individuals as an important factor to remain clean.

Cooperative games on the other hand are activities which require team work in order to reach two-way acceptable goals. They try to make use of capacities, conditions, of each individual to reach a common goal. These games propose the search for new ways of playing with the aim to decrease aggressive manifestations, promoting sensitivity, cooperation, communication, happiness and empathy attitudes¹⁰. Thus, the cooperative games come out as an important instrument not only to the craving management and decrease of anxiety, but also as an activity in which motivation for change in behavior may be instigated. However, it is necessary to mention that the cooperative games were not evaluated in chemically-dependent individuals.

Due to the characteristics of the cooperative games, it can be noticed that they present a therapeutic function: they stimulate informality, promote respect and value for the difference, teach much more than the game rules, besides being a motivating activity¹¹.

This type of practice also presents other relevant characteristics such as: to provide freedom to create and freedom to elect, being one of the great incentives, the stimulus to initiative and respect to the ideas of the group participants¹².

The cooperative games intensify the establishment of affection bonding between participants, let them be friends, acquaintances or family members, and make the participant develop a positive self-opinion and recognize the importance of the other. This practice offers the players the opportunity to appreciate and value him/herself and feel respected in his/her wholeness, increasing hence self-esteem^{10,11}, which is an important goal in the work with chemically-dependent subjects to avoid relapse¹³.

Thus, the aim of the present study was to evaluate the effectiveness of cooperative games in the management of craving and anxiety, as well as in the motivation to change the addictive behavior in crack dependent individuals, admitted in a detoxication unit.

METHODS

Outlining

This study is characterized as a quasi-experimental clinical trial.

Sample

The sample was by convenience, and 30 male subjects aged between 18 and 50 years, admitted to the Jurandy Barcellos Chemical Dependence Unit of the São Pedro Psychiatric Hospital, in Porto Alegre, with diagnosis of cocaine dependence by CID-10¹⁴, who made use of this substance through smoke (*crack*) were researched. Since it is common that these patients are dependent on more than one kind of substance, the inclusion criteria was that *crack* should be their favorite drug, a criterion already used in other studies. The exclusion criteria were to present diagnosis of mental retardation, severe cognitive harm and/or hearing impairment.

None subject was excluded by the criteria mentioned above; however, there were four exclusions due to other reasons, being two by clinical problems during practice, one by hospital evasion (run away), and another by improvement and dismissal.

Eight cooperative games workshops were conducted. It was carried out once a week, for three months. The patients participated in the practice while they were admitted; however, their evaluation in the workshops was only one, that is to say, occurred only on their first participation. It is worth mentioning that all patients admitted in the Jurandy Barcellos detoxication unit could participate in the workshop of cooperative games; however, only those who were within the inclusion criteria of this research would be part of the sample. Each group was composed of a mean of eight participants, out of whom a mean of four subjects was included in the sample.

Instruments

The following instruments were applied:

A) File with socio demographic data – it was the first instrument applied and had the aim to define the socio demographic profile of the studied sample, identifying characteristics which could be important to better evaluate whether the individual could be included or not in the sample, and the quantity of crack ingested daily was also measured.

B) Mini-mental state examination¹⁵ – used to identify severe cognitive damage which could avoid that the patients could be included in the study.

C) URICA (University of Rhode Island Change Assessment scale) – scale used to measure the motivation for behavior change in the dependent patient. It measures points in the pre-contemplation, contemplation, action and maintenance motivational stages, and was validated in Brazil by Figlie¹⁶.

D) Beck anxiety inventory – BAI¹⁷ – in Portuguese, ‘inventário de ansiedade de Beck’, validated to Brazil by Cunha¹⁸. It is a symptomatic scale destined to measure the severity of anxiety symptoms, composed of 21 items, with four options of responses (0 = absolutely no, 1 = slightly, 2 = moderately and 3 = severely). Classifying the anxiety symptoms as: minimum (0-10), light (11-19), moderate (20-30) and severe (31-63).

E) Visual analog scale – for craving evaluation (VAS) – this is a scale widely used in research to evaluate craving^{5,6,19}. The participant should rank his craving, between 0 (absence of craving) and 10 (very strong *craving*), checking this value on a 10-centimeter scale.

PROCEDURES

The data were individually collected on interview with the patients under treatment who should meet the inclusion criteria and report willingness to make part in the study.

Firstly, the file with the socio demographic data referring to the consumption pattern of psychoactive substances and the *mini-mental* were applied to evaluate if any subjects would be excluded from the sample.

On another day, images and videos of cocaine under the *crack* presentation were shown with the aim to induce *craving* in the participants and subsequently the following instruments were applied in this order: VAS, URICA and BAI.

Immediately after the first application, a workshop with cooperative games was performed and at the end of it, the VAS, BAI and URICA instruments were reapplied to evaluate whether there was alteration in the anxiety and craving symptoms, besides verifying whether there were alterations in motivation for behavior alteration.

Cooperative games workshop

The workshop of cooperative games is characterized for being an instrument which tries to stimulate cooperation, integration, socialization, creativity, imagination, communication, body expression. And motivation through activities which have a ludic character, allowing the participants to have moments of informality and happiness, important factors for human wellness^{10,11,20}.

These practices can be performed both with support material and without it. Some of the cooperative games proposed were designed with the aid of many materials, others not. The used materials were: balloons, mats, newspaper pages, stereos and CDs.

The patients participated in the following cooperative games in this order:

“Crazy” circle¹⁰ – all holding hands in a circle. Each participant should suggest a task to the group and it, without letting go of the hands, should perform it.

Two “islands”¹⁰ – the activity is divided in two sides, that is, two “fictional islands” composed of mats, and between them there is an empty space also called in a fictional way “sea”. All participants should be on an “island” on the right side. The aim of this practice is

to cross from one "island" to the other, in pairs, on the mat, named "boat", sliding it. They should all arrive at the same "island".

Helping your friends¹¹ – the participants distributed in a given space, should at the music rhythm, move each one wearing newspaper hats. Every time the hat falls on the ground, a friend next to him should catch it and consequently put it on the head of the one who had dropped it.

Games with balloons^{10,11} – activity performed with variations. a) "All suspended" – each participant should carry a balloon. The aim is to keep it on the air without holding it. As time passes by, other balloons are placed in the activity increasing hence the difficulty. b) "Passing in small groups" – the participants are divided in small groups. The aim of each group is to exchange passes with the hands or feet, without dropping them. It starts with three balloons, and during the activity, this number is increased. c) "Walking sandwich" – the participants are divided in small groups. Each group should make a "sandwich" with the balloons and then, move through the determined space without letting the balloons fall on the ground.

Passive muscle stretching in pairs²¹ – muscular stretching of lower limbs. Initially, a component of the pair receives help to perform the activity and the exchange takes place subsequently.

Since the cooperative have a cooperative and not competitive nature, they do not present evaluation punctuation of performance. The activities were performed on the hall of the unit, with mean duration of one hour.

DATA ANALYSIS

The data were analyzed in the *Statistical Package for the Social Sciences* program – SPSS 12.0 for the frequency and descriptive tests and for the inferential, the Student's *t* test for paired samples and the Spearman coefficient of linear correlation were used in the descriptive analysis. The significance level was of 5%.

Ethical aspects

This study was only initiated after being approved by the Ethics Committee in Research of the São Pedro Psychiatric Hospital. Before the subject was included in the research, its aim was explained and the Free and Clarified Consent Form was provided and its signature was mandatory for the participation in this study.

RESULTS

Age mean of the subjects ($n = 32$) was 24.03 years ($SD = 4.24$; 18-33), mean of studied years was 9.40 ($SD = 3.10$; 0-15). Regarding marital status, 90% of the subjects were single ($n = 27$), 6.7% married ($n = 2$) and 3.3% separated ($n = 1$).

All of them were *crack* dependent; 70% were nicotine dependent ($n = 21$); 6.7% were alcohol dependent ($n = 2$); 16.7% were *Cannabis* dependent ($n = 5$); 23.3% made harmful use of alcohol ($n = 7$) and 6.7%; harmful use of *Cannabis* ($n = 2$).

Concerning the critical judgment of each of the psychoactive substances doing harm to their lives: 100% ($n = 32$) believed that *crack* brought negative consequences; 3.3% that nicotine did ($n = 1$); 13.3% that *Cannabis* did ($n = 4$) and 6.7% that alcohol brought it ($n = 2$).

Age of beginning of use of substances was: 14.07 years for alcohol ($SD = 2.94$; 9-22); 16.7 years for inhaled cocaine ($SD = 2.51$; 14-25); 20.23 years for *crack* ($SD = 4.22$; 14-29); 14.35 years for nicotine ($SD = 3.19$; 9-24) and for *Cannabis*; 14.60 years ($SD = 2.70$; 11-25).

Regarding the consumption pattern of psychoactive substances, the patients consumed mean of 135.50UI ($SD = 175.00$; 10-720) of crack stones/week ($SD = 40.48$; 4-150); from 4.30 cigarettes of *Cannabis*/week ($SD = 10.61$; 0-50); 123.67 cigarettes of nicotine/week ($SD = 101.05$; 0-360). Only three patients out of the ones who used inhaled cocaine in the past, currently remained using it together with crack. All of them consumed mean of one gram of inhaled cocaine per week. Use of injected cocaine was not reported.

In the *mini-mental* evaluation, the mean was 27.30 points ($SD = 2.02$; 22-30).

Decrease in craving and anxiety symptoms was observed after the therapeutic intervention, and no alteration was found in the motivation to change to the addictive behavior. Table 1 presents the data related with motivation (URICA), anxiety (BAI) and *craving* (VAS) before and after the cooperative games according to the *t* test for paired samples ($n = 32$).

Table 1. Comparison of the anxiety, craving symptoms and the motivational stages before and after the cooperative games.

Variables	Before (M, SD)	After (M, SD)	p
<i>Craving</i> (visual analog scale)	3.77 (2.31)	0.60 (1.33)	< 0.001
Anxiety symptoms (BAI)	32.20 (8.98)	22.73 (4.98)	< 0.001
URICA – Pre-contemplation	14.73 (3.77)	13.80 (4.90)	0.167
URICA – Contemplation	29.80 (3.82)	30.53 (4.55)	0.337
URICA – Action	29.43 (4.32)	30.20 (5.15)	0.265
URICA – Maintenance	25.07 (4.43)	25.90 (5.13)	0.246

DISCUSSION

It is confirmed through the comparison of the results of the application of the measuring instruments of motivation (URICA), *craving* (VAS) and anxiety (BAI), that the cooperative games were effective to reduce intensity of *craving* and anxiety, not causing significant alterations concerning motivation to alteration in the dependent behavior.

In order to better contextualize the perceived autonomic alterations, it is important to mention that during the cooperative games the participants physically exercised for 60 minutes. These physical stimuli cause the secretion of a hormone named β -endorphin, which is associated with alterations in humor, and consequently, improved positive feeling²². Moreover, it is important to refer that individuals with reduced organic conditions or untrained ones present higher responses to this hormone²³. The crack dependent, during the period previous to the hospitalization and also during and after it, faces psychophysical problems due to the intoxication and/or abstinence effect, which makes him weak^{2,3}. Considering this, it is possible to admit that the subjects dependent on crack may be favored by the action of the β -endorphin through healthy stimuli, feeling less anxious and with less craving, as observed in this study.

In addition to the positive hormone alterations described above during the practice, the participants, in some moments, mentioned that the cooperative games as alternative ways of pleasure, elucidating their importance in the closeness to family again, enabling hence the formation of a network support favorable to the purposes to quit *crack*, as well as change in lifestyle so necessary to the maintenance of abstinence¹³.

The study still presented some limitations, such as the small sample researched, besides the lack of control group for a comparative analysis.

The results of this research point to the possibility of a new therapeutic approach. The cooperative games, despite not being considered motivation instrument for the alteration in the dependent behavior, stimulate the positive integration and socialization, that is, healthy interaction, also enable that the involved subjects experience another way of pleasure, becoming hence a new therapeutic alternative for patients dependent on *crack* admitted to detoxication units or even after admission. Since they are a group activity, besides reducing *craving* and anxiety, these

practices may be a tool in the prevention of relapse and family (re) closeness. Such fact occurs because one of the characteristics of these practices is lucidity, something crucial to the human physical and mental health in all stages of development.

It is believed that the data here described, besides being a therapeutic service for crack-dependent individuals who try abstinence, facilitate them into visualizing the possibility of change in lifestyle, which was destructive, to another, focused on his biopsychosocial wellness.

All authors have declared there is not any potential conflict of interests concerning this article.

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