Cognitive-Behavioral Intervention in an Anxiety Group: primary care result evaluation

Keila Marine Pedrosa
Catalan Higher Education Center, GO, Brazil

Gleiber Couto
Federal University of Goiás, GO, Brazil

Roselma Luchesse
Federal University of Goiás, GO, Brazil

Abstract: This study aimed to evaluate the effectiveness of a therapeutic group based on Cognitive-Behavioral Therapy in the care of the person with anxiety disorder in the primary health care network. 12 women aged 20 to 49 years started treatment and 11 completed it three months after the beginning of the intervention. Data were collected using the Beck Anxiety Inventory and the Hamilton Anxiety Scale. Statistical analyses based on the method proposed by Jacobson and Truax (JT) revealed that the most part of the participants presented a reliable positive change after the intervention. Therefore, it was concluded that the use of both instruments proved to be a facilitator of the management and structuring of the activities of the therapeutic group since the results provided a situational diagnosis. Another point to be highlighted concerns about the reliability of the results obtained from the JT Method with all the respective parameters.

Keywords: mental health; primary attention; anxiety; cognitive therapy; clinical significance.

INTERVENÇÃO COGNITIVO-COMPORTAMENTAL EM GRUPO PARA ANSIEDADE: AVALIAÇÃO DE RESULTADOS NA ATENÇÃO PRIMÁRIA

Resumo: Este estudo teve por objetivo avaliar a efetividade de um grupo terapêutico fundamentado na Terapia Cognitivo-Comportamental no atendimento à pessoa com transtorno de ansiedade na rede de atenção primária à saúde. 12 mulheres, de 20 a 49 anos, iniciaram o tratamento e 11 o concluíram três meses após o início da intervenção. Os dados foram coletados por meio do Inventário de Ansiedade de Beck e da Escala de Ansiedade de Hamilton. Análises estatísticas fundamentadas no método proposto por Jacobson e Truax (JT), o qual apresentou resultados confiáveis com todos os respectivos parâmetros, revelaram que a maioria das participantes apresentou mudança positiva e confiável após a intervenção. Diante disso, conclui-se que a utilização de ambos os instrumentos facilitou o manejo e a estruturação das atividades do grupo terapêutico, uma vez que os resultados proporcionaram um diagnóstico situacional. Outro ponto a ser destacado diz respeito à confiabilidade dos resultados obtida a partir do Método JT com todos os respectivos parâmetros.

Palavras-chave: saúde mental; atenção primária; ansiedade; terapia cognitiva; significância clínica.

1 Mailing address: Keila Marine Pedrosa dos Santos: Edifício Rafael Felice – Rua França, nº 258, Ap 304 – Vila Chaud. Catalão, GO. CEP: 75704-010. Telefone: (+5564) 98125-7600. E-mail: keilamarinepsico@yahoo.com.br
INTERVENCIÓN COGNITIVO-CONDUCTUAL EN UN GRUPO DE ANSIEDAD:
EVALUACIÓN DE RESULTADOS EN ATENCIÓN PRIMARIA

**Resumen:** Este estudio tuvo como objetivo evaluar la efectividad de un grupo terapéutico basado en la Terapia Cognitivo-Comportamental en el cuidado de la persona con trastorno de ansiedad en la red de atención primaria. 12 mujeres de 20 a 49 años comenzaron el tratamiento y 11 lo completaron tres meses después del inicio de la intervención. Los datos fueron recolectados utilizando el Inventario Beck de Ansiedad y la Escala de Ansiedad de Hamilton. Los análisis estadísticos basados en el método propuesto por Jacobson y Truax (JT) revelaron que la mayor parte de los participantes presentaron un cambio positivo confiable después de la intervención. Por lo tanto, se concluyó que el uso de ambos instrumentos resultó ser un facilitador de la gestión y estructuración de las actividades del grupo terapéutico, ya que los resultados proporcionaron un diagnóstico situacional. Otro punto a destacar se refiere a la fiabilidad de los resultados obtenidos del Método JT con todos los parámetros respectivos.

**Palabras clave:** salud mental; atención primaria; ansiedad; terapia cognitiva; significación clínica.

**Introduction**

According to the World Health Organization (WHO, 2008), practices developed in Primary Health Care (PHC) can serve as facilitators in health promotion, disease prevention, cure, and general care. In this context, we can highlight the care offered to people living with mental disorders (Lucchese et al., 2014).

There is a significant number of individuals living with Common Mental Disorder, described by Gonçalves, Stein, & Kapczinski (2008) as a non-psychotic disorder and characterized by somatic symptoms such as irritation, tiredness, forgetfulness, reduced ability to concentrate, anxiety, and depression. Concerning common mental disorders, estimates of mentally ill people care needs range between 28.7% and 50% in the population studied (Fortes et al., 2011).

Skapinakis et al. (2013) state that anxiety is one of the disorders that most affect world population, it prevails in women and is associated with a considerable reduction in life quality. Thus, we must measure the occurrence and severity of these symptoms through several instruments. For example, Chen, Chen, & Wang (2012) used the Hamilton Anxiety Scale (HAM-A) to assess symptoms manifestation throughout treatment in patients with primary anxiety disorder or mood disorder with anxiety symptoms. Lydiard, Rickels, Herman, & Feltner (2010) verified the psychic and somatic changes in patients with generalized anxiety through HAM-A, among other tools.

The increasing emphasis on instruments aimed at evaluating somatic and psychic symptoms, especially those targeted in psychological treatments, supported the development of studies that seek assess the changes subjects achieved after the intervention. Considering the broad range of psychotherapeutic approaches and techniques in different contexts, it is becoming increasingly imperative to demonstrate the reliability and effectiveness of these interventions (Ferreira, Oliveira, & Vandenberghe, 2014). Also, Peuker et al. (2009) point out that, with this evaluation, it is possible to identify associations of variables to success or failure in psychotherapeutic treatment.
When dealing with the care provided with cognitive-behavioral group therapy (CBGT), especially in cases of common mental disorder, we can observe an effective reduction of symptoms. In this sense, Wesner et al. (2014) indicate that, after treatment, patients with panic had better coping strategies. Therefore, Gloster et al. (2011) observed a decrease in the symptoms of agoraphobia, and Afshari et al. (2014) show that the treatment provided a regulation anxiety, sadness and anger symptoms.

In the Brazilian context, Heldt et al. (2011) verified the effectiveness of this intervention in the remission of panic symptoms; Savoia & Bernik (2010) in social skills training in phobic patients; Habizang et al., (2009) in anxiety reduction in sexually abused victims, among others. The growing recognition of the benefits of CBGT supports Benevides, Pinto, & Cavalcante (2010) thesis: group practices are excellent instruments that should be widely used adequately in the health area.

In fact, the trend to evaluate intervention results based on specific characteristics measures encouraged the development of models that assess interventions effectiveness. In this sense, Jacobson & Truax (1991) proposed a method based on the comparative analysis between pre- and post-intervention scores to determine if the differences between them show reliable changes and if they are clinically significant. From this model, there is the possibility to choose one of three criteria to evaluate the changes: (A) the level of functioning after the therapy should remove the individual from the dysfunctional population, verifying if after the treatment the obtained scores at least two standard deviations above the pre-therapy mean; (B) the level of post-therapy functioning should place the individual within two standard deviations of the mean functional population; (C) after therapy, the individual’s final score should take him to the mean nearest functional group to dysfunctional population patterns (Jacobson & Truax, 1991).

In Brazil, Del Prette & Del Prette (2008) instigate the use of the JT Method to verify the effectiveness of different forms of intervention. Thus, some data provided by Ferreira, Oliveira, & Vandenberghhe (2014) show the effectiveness of a social skills development group in college students. Meanwhile, Sás et al. (2012) investigated the effectiveness of a phonological remediation program in individuals diagnosed with Down Syndrome; and Yoshida et al. (2009) examined changes in conflicting relationships patterns and in psychopathological symptoms of patients undergoing brief psychodynamic psychotherapy.

There is a definite need for studies that evaluate the results of psychological interventions. When considering the trend presented earlier, cognitive-behavioral treatments receive special attention. Thus, the objective of this article is to assess, through the JT Method, the results obtained by a therapeutic group guided by cognitive-behavioral psychology, in care for people with anxiety disorder in the primary health care network.
Method

Participants

Eleven women seeking care at the Primary Health Care Unit (PHCU) reporting anxiety complaints aged 20 to 49 years (M = 34; SD = 7) participated in the study. At the time of data collection, 25% were single, 8.33% married, and 66.67% divorced. As for schooling, 75% had attended elementary school, 16.66% high school, and 8.33% higher education. As far as professions, the majority (58.33%) were housewives, while the remainder was distributed evenly among students, manicures, general service aids, lunch ladies, and saleswomen (8.33%).

Instruments

_Beck’s Anxiety Inventory (BAI):_ It is a self-reported inventory, consisting of 21 items, which are “descriptive statements of anxiety symptoms.” The scale uses a 4-point Likert scale to evaluate questions, which, according to the Manual, reflect levels of increasing severity of each symptom: (0 = absolutely not, 1 = slightly, 2 = moderately, 3 = severely). The total score results from the sum of the individual scores and ranges from 0 to 63. The outcomes evaluation goes according to the following cutoff points: 0-10 points for the minimum level of anxiety; 11-19 points for the mild level; 20-30 points for the moderate level; and 31-63 points for the severe level (Cunha, 2001).

_Hamilton Anxiety Scale (HAM):_ It is an instrument for external evaluation that at measuring anxiety mental and somatic components. It consists of 14 items that comprise 14 groups of symptoms, subdivided into two groups, seven related to anxious mood symptoms and seven to physical symptoms of anxiety. The item evaluation goes according to an intensity scale ranging from 0 to 4 (0 = absent, 2 = mild, 3 = average, 4 = maximum). It is noteworthy that the sum of the scores obtained in each item results in a total score ranging from 0 to 56 (Hamilton, 1959).

Data collection procedure

The Ethics Committee of the Federal University of Goiás (UFG) evaluated and authorized the project according to protocol 28/2009. We conducted the research according to the standards required by National Health Council Resolution 196/1996, in force during the submission period of this project.

The intervention was cognitive-behavioral group therapy-based and took place at a PHCU with participants with anxiety complaints. Eligibility criteria were: being over 18 years of age and experiencing anxiety symptoms at least at a mild or higher level. Exclusion criteria included comorbidities or diagnosed severe and persistent mental disorder, in addition to the use and/or abuse of alcohol and other drugs.
We informed the respondents about the purpose and procedures of the research and those who agreed to participate signed the Informed Consent Form. A psychologist performed the intervention, and it occurred during 12 weekly meetings, each lasting 90 minutes.

Likewise, we developed the procedures protocol used in the group from data available in literature from the specific field, according to Table 1. The procedures included the application of the Hamilton Anxiety Scale and the Beck Anxiety Inventory at two moments: pre-intervention (before the therapeutic group sessions) and post-intervention (after the end of the therapeutic group sessions during 12 weeks).

**Table 1. Short protocol of strategies used in Group Cognitive-Behavioral Therapy sessions. Catalão-GO, 2016.**

<table>
<thead>
<tr>
<th>Session</th>
<th>Objectives of session</th>
<th>Procedure</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Pre-intervention assessment</td>
<td>Activities for presentation and group integration</td>
</tr>
<tr>
<td></td>
<td>Presentation and elaboration of therapeutic contract</td>
<td>Application of Beck Anxiety Inventory and Hamilton Scale</td>
</tr>
<tr>
<td>2</td>
<td>Presentation Cognitive-Behavior model</td>
<td>Discuss the relation thought-emotion and behavior</td>
</tr>
<tr>
<td>3</td>
<td>Develop self-monitoring</td>
<td>Identify automatic thoughts and origin of dysfunctional beliefs</td>
</tr>
<tr>
<td>4</td>
<td>Self-esteem and Self-confidence</td>
<td>Behavioral essay to cope with punitive events</td>
</tr>
<tr>
<td>5</td>
<td>Cognitive restructuring</td>
<td>Identify and modify cognitive distortions</td>
</tr>
<tr>
<td>6</td>
<td>Anxiety Management Techniques</td>
<td>Learning of muscle relaxation and breathing techniques</td>
</tr>
<tr>
<td>7</td>
<td>Coping with anxiety</td>
<td>Systematic desensitization by relaxation images and techniques</td>
</tr>
<tr>
<td>8</td>
<td>Social skills training: assertive, passive and aggressive behavior</td>
<td>Behavioral essay and assertiveness training</td>
</tr>
<tr>
<td>9</td>
<td>Continuing social skills training</td>
<td>Dialogued explanation and modeling</td>
</tr>
<tr>
<td>10</td>
<td>Starting and maintaining conversations</td>
<td>The importance of non-verbal language in social behavior and how bodily expressions can help or hinder social performance</td>
</tr>
<tr>
<td>11</td>
<td>Training for autonomy</td>
<td>Train, offer and receive feedback</td>
</tr>
</tbody>
</table>

(to be continued)
Table 1. Short protocol of strategies used in Group Cognitive-Behavioral Therapy sessions. Catalão-GO, 2016.

<table>
<thead>
<tr>
<th>Session</th>
<th>Objectives of session</th>
<th>Procedure</th>
</tr>
</thead>
<tbody>
<tr>
<td>12</td>
<td>Post-intervention assessment; closure</td>
<td>Application of Beck Anxiety Inventory and Hamilton Scale</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Assessment of the program and sharing of experiences and strategies</td>
</tr>
</tbody>
</table>

Source: Developed by the authors based on Clark & Beck (2012).

Data analysis plan

We inserted the tests results in a spreadsheet. We used the statistical software SPSS (Statistical Package for Social Sciences, v. 23) to estimate the descriptive statistics of pre and post-intervention scores. Next, to compare the results for both moments, we operationalized in an Excel worksheet the parameters of the “C” criterion of the JT Method, which adopts the cutoff point from the normative data of the distribution of functional and dysfunctional population scores.

For the Beck Inventory, we adopted the values described in the Manual for a functional sample composed of general hospital employees, whose age, sex, and marital status most closely approximated the sample of this research: $\alpha = 0.71$ (N = 73; $\bar{X}$ = 5.10, SD = 3.95 shown in Table A.3). For the dysfunctional sample, we considered the criterion of similarity of diagnostic categories and used data from the Mixed anxiety and depression disorder group (N = 79; $\bar{X}$ = 23.5, SD = 11.59, Table A.1). Concerning the HAM-A, which does not have Brazilian standards, the indices presented in the studies of Gloster et al. (2011) and Chen, Chen and Wang (2012) were adopted: $\alpha = 0.89$; functional (N = 68; $\bar{X}$ = 23.30, SD = 4.9); dysfunctional (N = 138; $\bar{X}$ = 24.7, SD = 5.4).

The analysis of the Reliable Change Index (RCI) allowed us to verify if changes that occurred between pre- and post-intervention can be attributed to the intervention, whereas through the Clinical Significance analysis we were able to confirm if the intervention produced effective modifications in participants’ lives (Sás et al., 2012; Del Prette & Del Prette, 2008).

Results

According to the objectives set, the first step was to verify the anxiety scores present in the pre-intervention sample, ranging from 11 to 49 (M = 40, SD = 11) for BAI (Figure 1) and 6 and 45 (M = 36; SD = 11) for HAM-A (Figure 2). Then, the same indices were found for the sample after the intervention – 4 to 25 (M = 11, SD = 5) for BAI and 5 to
35 (M = 14; SD = 9) for HAM-A. We observed in the post-intervention that the subjects showed a higher concentration in the minimum and mild level, while there was no result for the maximum and severe levels. Although there were no cut-off points defined for the HAM-A, we could not note some trend of the data, in the same direction as those found for the BAI.

Considering the hints about the evolution of the group shown by the descriptive statistical results, we intended to analyze the improvements in the anxiety symptoms case by case. Therefore, we performed the analysis according to the JT Method, and Figures 1 and 2 illustrate the graphical representation, simultaneously considering the reliability of the changes and the clinical significance according to the data obtained.

When considering the subjects’ perception of experiences with anxiety symptoms, assessed by the BAI, the results showed a Clinical Significance Index (CSI) of 9.78, with a confidence interval of CSI (Clcsi) of 0.94, standard error of the difference (SEdif) of 4.05 and a confidence interval of the clinical change index (Clcci) of 7.93. Results related to the changes attributed to the intervention are in Figure 1:

**Figure 1. Comparison of pre/post-intervention score of BAI using JT Method.**

![Graph illustrating the comparison of pre/post-intervention score of BAI using JT Method.](image-url)

*Division lines in graph: vertical = high pre-intervention score; horizontal = clinical significance; diagonal = reliable change; dotted lines = confidence intervals.

Source: The authors.
We noticed that 10 of the 11 members presented a consistent positive change, that is, we can attribute changes to the intervention. This result showed that the intervention was effective, producing improvements for almost all individuals who received it. Only for subject 6, despite the reduction in the anxiety scores (from 11 to 4), this improvement could not be attributed to the treatment, as the scores placed her within the range of uncertainty for real change.

Also, for individuals 5 and 7, there was a clinically significant change. The data revealed that the intervention provided sufficient changes to remove them from the dysfunctional population group (requiring intervention) and elevate them to functional population status.

We could also note that individuals 3 and 11 positioned themselves at the lower limit of the uncertainty range for clinical significance. Similarly, although they benefited from the intervention by reducing anxiety symptoms, participants 1, 2, 4 and 10 did not present sufficient (clinically significant) change to return them to the functional population condition.

We should note that participants 8 and 9 achieved a high initial score and remained that way, even after the intervention. For them, despite the improvement obtained with the intervention (from 49 to 27 and from 49 to 25, respectively), new treatment strategies can be considered, such as drug therapy combined with the individual modality of cognitive and behavioral therapy.

Then, in Figure 2, the results of change observed by the professional are displayed, referring to HAM-A – CSI of 23.97, with CIcsi of 0.70; and SEdif of 3.17 and a Clcci of 6.21.
In this case, we could also note that 10 of the 11 participants presented a truly positive change. This result, based on another source of information, supports the previous proposition that the intervention could be considered effective. Similarly to the self-reported result, participant 6 obtained scores within the range of uncertainty but based on the professional’s clinical judgment.

Also considering the data available for HAM-A, there were clinically significant changes for subjects 1, 2, 3, 5, 7, 8, 10 and 11. According to the clinical judgment of the professional, the changes the individuals presented after the intervention moved them to the working population; therefore, there is no need for other interventions.

We should highlight that only participants 4 and 9, although the intervention reduced the anxiety symptoms (from 35 to 28 and from 44 to 35, respectively), did not present a clinically significant change. They were initially assessed as having many signs and symptoms of anxiety, which remained clinically evident even after the intervention.
Discussion

We assessed the results of a cognitive-behavioral group intervention for patients with anxiety signs who sought care in the primary care network. Specifically, we compared the changes in the perceived symptoms experience with the evaluation of the presence of the symptoms by a professional before and after the intervention.

In the meantime, the JT method allowed us to assess the extent to which the results may have been attributed to the uses made and the impact of the changes on the client’s adaptive functioning (Wesner et al., 2014; Del Prette & Del Prette, 2008). Although there is a growing number of researchers aiming to evaluate the effectiveness of interventions (Ferreira, Oliveira, & Vandenbergh, 2014, Sás et al., 2012; Yoshida et al., 2009), in many cases, there is a use of inferential statistical-based measures, which do not add to the reliability of these measures.

The results showed that the statistical method used permitted operating the recovery in a relatively objective and impartial way. It also showed the progress of the intervention group, as well as the evolution of this group’s individuals. We observed a genuinely positive change in most of the group, which is, throughout the treatment, there was a decrease in the anxiety symptoms, both in the evaluation by the participants and by the professionals. These data are corroborated by findings from the literature, which also point to the remission or total control of symptoms with the use of CGBT in the various manifestations of anxiety disorders (Chen, Chen, & Wang, 2012; Lydiard et al., 2010).

This aspect supports the general interpretation that the intervention was successful and the idea that the adoption of this intervention model should be stimulated, at least in the same application contexts. Besides, it was consistent with the research conducted by Lucchese et al. (2014), who emphasized the mental health service offered in PHC as a possible and assertive path that responds to the population’s health needs.

Regarding the analysis of the clinical significance of the changes, some participants benefitted from the intervention but remained in a clinical group, that is, they still needed other interventions. According to the cognitive model, one of the challenges in treating anxious patients is changing the recurrent thoughts associated with danger and threat usually. These patients commonly overestimate the danger of situations and underestimate their resources to deal with events that are considered threatening. The belief rooted in them is related to vulnerability, in that risk factors are more evident than protection factors (Wesner et al., 2014; Heldt et al., 2011).

Nevertheless, we noted some discrepancies between the data of the two instruments used, for example, regarding clinical significance. We can attribute this difference to the use of data from a sample that even though presents similar symptoms, it has different variables, including nationality. If considered in isolation, the result observed by the use of HAM-A would lead to the interpretation, from the professional’s perspective, that more people passed to the functional group (Gloster et al., 2011, ...
Chen, Chen, & Wang, 2012). This aspect, although not compromising the interpretations in this study, is important and reinforces the need to develop national parameters for the measures available for use in Brazil.

Although the health service where we performed the intervention was open to all and without gender specification, the group only consisted of married women, the so-called “housewives” with lower levels of education. This factor is consistent with those found in other studies that point to the higher incidence of anxiety disorders in women with these characteristics (Skapinakis et al., 2013, Fortes et al., 2011).

In the end, the use of the instruments provided a situational diagnosis, as well as measures of the intervention and the therapeutic evaluation through the remission, permanence or extinction of the anxiety variables. As a result, we can consider that the therapeutic intervention in group, based on the CGBT approach, enabled effective changes in the symptoms of the women under investigation and showed to be a possible tool for use in the context of mental health care in PHC.

This intervention proposal advances by assertively responding to the health needs of the population suffering from a moderate mental disorder, in addition to implementing a mental health care practice in PHC. Nevertheless, considering a specific reality, with a reduced sample in a given psychosocial context, limits the generalizations of the findings to different contexts.

References


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