

# Cognitive therapy: Using a specific technique to improve quality of life and health

## *Terapia cognitiva: aplicações de uma técnica para qualidade de vida e saúde*

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### Abstract

In this study we implemented and assessed a specific cognitive therapy technique - *Decision Making and Quality of Life*, which is used to promote health and improve quality of life. Eighteen employees from a higher education institution participated in the study, which was organized into 12 group sessions. At the admission and concluding phases, we asked participants to complete the World Health Organization Quality of Life - Bref Questionnaire, the Beck Anxiety Inventory and the Beck Depression Inventory. Results showed significant improvement in five of the domains that measure quality of life: physical, psychological, environmental, general, and health. There were no significant changes ( $p=0.26$ ) in anxiety scores. In contrast, the depression scores got significantly better ( $p=0.02$ ). The results suggest that the proposed technique is conducive to health promotion and quality of life.

**Uniterms:** Cognitive therapy; Health promotion; Quality of life.

### Resumo

*Esta pesquisa teve por objetivo geral aplicar e avaliar uma técnica específica de terapia cognitiva - organizada em 12 sessões grupais e denominada Tomada de Decisão e Qualidade de Vida -, destinada a promover saúde e incrementar qualidade de vida. No total, participaram 18 servidores de uma instituição pública de ensino superior. Nas etapas de admissão e de encerramento, aplicaram-se: Questionário de Qualidade de Vida, Inventário Beck de Ansiedade e Inventário Beck de Depressão. Foram identificadas melhoras significativas nos domínios físico, psicológico, meio ambiente, geral e saúde, relacionados à qualidade de vida. Não se verificaram alterações significantes nos escores de ansiedade ( $p=0,26$ ). Em contrapartida, os escores de depressão indicaram melhora ( $p=0,02$ ). Os resultados sugerem que a técnica pode ser empregada para promover saúde e qualidade de vida.*

**Unitermos:** Terapia cognitiva; Promoção da saúde; Qualidade de vida.

According to the World Health Organization (WHO), health promotion can be understood as a process that enables people to take control of, and improve, their own health. From this point of view, an

individual and his/her group should be enabled to set and achieve goals, fulfill their own needs, and deal with or change their environment in order to achieve physical, mental and social wellbeing (Marks et al., 2000).

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According to Fortes and Zoboli (2004), autonomous individuals make free and informed choices from the available options, deciding what is best for themselves and expressing their will.

However, making a decision often presents a dilemma, as the person struggles between immediate rewards and future benefits, which often involve mutually exclusive values. In some cases, an individual opts for the least advantageous option as a result of failing to appreciate the long-term benefits (Bechara, 2004; Palmieri, 2004).

Health promotion encompasses not only reducing unhealthy behaviors, but also adopting and reinforcing healthy behaviors. As such, it is essential to consider the role that emotion plays in decision-making associated with these behaviors. In fact, as Beer, Knight and D'Esposito (2006) emphasized, it is impossible to disregard emotional factors in any type of decision making. This is supported by Oliva et al. (2006) who consider that when we make decisions and choices, behave in a particular way, or follow moral standards, we depend not only on rational but also on emotional mechanisms.

The World Health Organization defines quality of life as "an individual's perception of their position in life in the context of the culture and value systems in which they live and in relation to their expectations, standards and concerns" (Fleck, 2008, p.25). Numerous national and international researches have been conducted on the relationship between quality of life and health. A thorough historical examination shows that, since the 1930s, there has been a rapid growth in the number of instruments used to measure this relationship. Gradually, more and more dimensions have been included, moving from factors, which were purely physical and individual, to include subjective, socio-cultural and environmental factors. Such complexity poses challenges to health services in their routine assessment of quality of life. These come in the form of three types of barrier: attitudinal, conceptual and methodological, and practical. Despite these obstacles, it is essential to continue the search for ever more accurate measures, in part in order to better estimate the effectiveness of health interventions (Costa Neto & Araujo, 2008; Matos & Araujo, 2009; Patrick, 2008; Straub, 2007).

### **Systematization of a specific technique in cognitive therapy**

Cognitive Therapy (CT) was developed by Aaron Beck in the 1960s and holds as a basic principle that distorted and rigid thoughts lead to mistaken beliefs about the adversity of a situation, which in turn negatively impacts both a person's mood and behavior (Beck, 1963;1997). Over the years, the application of this principle has proved beneficial for the treatment of psychopathological conditions and in overcoming situational vulnerability. Intervention techniques have been progressively systematized and there are currently more than 300 studies, which attest to the efficacy of CT (Beck, 2005).

Cognitive therapy includes features that encourage patient autonomy. In being empirically collaborative, it focuses on shared decision-making between patient and therapist. In this approach, the guided practice of cognitive skills lays the foundations for a better quality of life and encourages healthy behavior by strengthening decision-making, which is not based solely on emotion, but also on reason. Within CT, modifying underlying assumptions (assumptions, rules and duties) is considered to be more challenging than modifying automatic thoughts (Beck, 2007). From this perspective, a behavioral intervention seeks, above all, to affect changes at the cognitive level, which can bring about emotional changes (Bennett-Levy et al., 2004).

Cognitive conceptualization lies at the heart of CT and is a process by which levels of dysfunctional thinking are identified and the effects of this distortion are studied in order to be better understood. This, then, allows for the best intervention to be implemented (Beck, 2007). At clinical follow-up, cognitive formulation reveals the relationship between three levels of thought: 1) Automatic Thoughts (AT), which occur in various everyday situations, arise spontaneously and are not related to reflection or deliberation; 2) Underlying Assumptions (UA), which is the level of cognition that is activated when a person makes predictions about the consequences of their behavior or behaves according to rules; and 3) Core Beliefs (CB), which are presented in absolutes or rigid thoughts (Beck, 1997; Kunzler, 2011). In general, when an individual presents a particular

problematic behavior, she/he is being driven by an underlying assumption (Kuyken, Padesky & Dudley, 2009).

Despite widespread recognition of the relevance of the restructuring of underlying beliefs in the field of CT, few studies have focused on this essential level. Within this more specialized literature is the work conducted by Cooper, Todd, Turner and Wells (2007) on the effectiveness of intervention in cases of bulimia nervosa through the evaluation of positive and negative beliefs, thoughts of loss of control and permissive thoughts. Another interesting study is that of Dattilio (2006), in which members of the same family underwent cognitive restructuring of their underlying assumptions during eight sessions of CT.

The importance of understanding cognitive restructuring (at the level of underlying assumptions, i.e. "If... then..." thoughts) became evident through clinical practice and brought about the development of a specific technique in CT called Decision Making and Quality of Life (Kunzler, 2008a; 2011). It aims at the cognitive restructuring of underlying assumptions in order to encourage decision-making that leads to healthy behavior. The systematization of this technique is based on the concepts of health promotion and quality of life and involves the use of illustrative images associated with disease and health (Kunzler, 2008a; 2011). It provides a form of intervention that can meet the demands of personal and social development and, as such, is not restricted to psychopathological conditions, and thus falls within the scope of health psychology research and practice (Straub, 2007).

Since the 1980s, the effectiveness of group intervention has been widely documented (Fals-Stewart & Lucent, 1994; Himle et al., 2001; Kobak, Rock & Greist, 1995). In fact, this mode is considered efficient not only in terms of therapeutic response, but also because it provides reduced costs. In other words, one therapist can work with a greater number of patients, thus reducing costs. In regions where the supply of qualified professionals is limited, this fact effectively enables health care intervention to take place. In addition, intrinsic elements of group therapy - such as observational learning, flexibility of roles, group cohesion and cooperation - often amplify the therapeutic results (Anderson & Rees, 2007; Cordioli et al., 2002; Fals-Stewart & Lucent 1994; Himle et al., 2001; Kobak et al., 1995; Steketee & Pigott, 2006).

Cognitive therapy not only deals with an individual's difficulties, but also identifies the resources that need to be mobilized in order to achieve established goals. To this end, several techniques can be applied individually or in groups - aimed at couples, families, adults, adolescents, and children and adapted to various situations. There is no uniformity in the size of the groups, but reports from national surveys indicate that they tend to range from 6 to 12 people (Beck & Knapp, 2008; Falcone, 1999; Gomes & Scrochio, 2001; Kuyken et al., 2009; Sardinha, Oliva, D'Augustin, Ribeiro & Falcone, 2005).

In this study, we apply the *Decision Making and Quality of Life* technique and evaluate how it contributes to promoting health and improving the quality of life of our participants. The specific goals of this study were: a) Provide a health promotion/ quality of life intervention using this specific CT technique; b) Evaluate and compare the quality of life of participants in the pre- and post-intervention phases; c) Measure and compare anxiety and depression indicators in the pre- and post-intervention phases; and d) Evaluate the effectiveness of this specific CT technique for restructuring underlying assumptions.

## Method

### Participants

Initially, we stipulated the following inclusion criteria for the sample: public servants at a higher education institution, regardless of gender, aged between 18 and 60 years and who agreed to participate in the study. The following exclusion criteria were determined: lack of commitment to completing written assignments (that take 5 to 30 minutes per day) and attending therapy concomitantly with the 12 sessions that comprise the intervention. Given that the focus of this study was on health promotion and quality of life, we also excluded potential participants who were undergoing psychiatric care.

This selection process left us with 18 women, which we divided into 2 groups according to their work shifts at the institution. One group was composed of 8 participants aged between 25 and 56 years, 6 married and 2 single, 2 having high school diplomas, 4 bachelor degrees and 2 graduate degrees. The other group

consisted of 10 participants aged between 24 and 58 years, 5 married, 2 divorced and 3 single, 7 having graduated from college and 3 holding graduate degrees.

### Instruments

We adopted three assessment measures: the World Health Organization an abbreviated version of the Quality of Life (WHOQOL) - short version' questionnaire proposed by WHO (WHOQOL-bref), the Beck Anxiety Inventory (BAI) and the Beck Depression Inventory (BDI). The last two instruments measure anxiety and depression symptoms and have been used in studies addressing the efficacy of CT (Beck, 1963; Beck, Rush, Shaw & Emery, 1997; Strunk, DeRubeis, Chiu & Alvarez, 2007). These instruments were also selected in order to ensure that participants with pathological scores were not included, as data from such participants would not have met the purposes of the investigation. In addition, ascertaining changes in anxiety and depression indicators can serve to complement the measurements taken in the quality of life domains. It should be noted that, according to the literature, the cutoff points in the Portuguese version of the BAI for psychiatric diagnosis are: mild 11-19, moderate 20-30 and severe 31-63. Similarly, the BDI scores are classified using the following levels: mild 12-19, moderate 20-35 and severe 36-63. When composing the participant sample we did not apply a cutoff point. However, for data analysis, relevant literature recommends that the upper limits should be increased to avoid false positives (Cunha, 2001).

### Procedures for collecting and analyzing data

We opted for a quasi-experimental design method. The project was approved by the Research Ethics Committee of the Health Sciences Faculty at the *Universidade de Brasília* (protocol number 73/09) and the study was conducted in accordance with the recommendations set out in the National Health Council's Resolution 196/96.

The two intervention groups, one in the morning and another in the afternoon, were guided by the same therapist. She was trained in cognitive therapy by the

Beck Institute for Cognitive Therapy and Research and works in the context of private practice and in a public institution. Initially, an invitation was sent via e-mail to public servants at a specific unit of the institution. At the first meeting, called the admission stage, we explained the objectives of the study and asked participants to sign a letter of consent. Shortly thereafter, we applied the three assessment instruments. The whole intervention process took place over a period of three months, with weekly sessions lasting an hour and a half. To prepare for each session, we recommended reading the relevant section of the indicated textbook (Kunzler, 2008b). Written exercises were completed at each meeting and complemented by daily homework.

We applied the Decision Making and Quality of Life technique over the 12 group sessions, each of which was organized around specific goals and tasks. The content of the sessions was as follows: 1) The relationship between the three levels of cognition, unhealthy and healthy emotions (e.g. rejection) and associated behaviors (e.g. avoiding relatives of a spouse); 2) Decision making to establish healthy behavior (e.g. encourage interaction with family); 3) Step 1: Identification of factors that support current behavior (e.g. UA - If I stay away, then I do not have to confront bad emotions); 4) Step 2: Identification of factors that caused the behavior in the past (e.g. UA - My parents acknowledged everything my sister did but did not do the same for me); 5) Step 3: Identification of factors that help to construct healthy behaviors (e.g. UA - If I visit relatives, then I will learn to deal with competition); 6) Step 4: Choice of four behavioral experiments (e.g. invite family for a celebratory event); 7) Cognitive preparation for the behavioral experiment (e.g. UA - If I accept that everyone is responsible for their own behavior, then I will focus on my personal goals); 8) Daily record of healthy behaviors (e.g. depositing coins in a 'piggy bank'); 9) Summary of steps: the complete exercise; 10) Weekly monitoring of planned activities (e.g. talking with husband and children); 11) Construction of reflective thought and coping cards (e.g. UA - If I keep mulling over others' actions, then my progress will stagnate) and; 12) Evaluation of results and feedback from the group. In the closing stage, we reevaluated the quality of life measures, anxiety symptoms and depression indicators.

Data were statistically analyzed by comparing the scores calculated before and after the intervention.

Given the sample size, we used the nonparametric Wilcoxon Signed Ranks Test ( $p < 0.05$ ) and, as such, we did not perform homogeneity and normality tests.

## Results and Discussion

Although invited, male participants did not come forward at the sampling stage. Thus, our participants were exclusively female, which is in keeping with literature that suggests that women are more concerned with health (Straub, 2007). However, it is worth mentioning that in 19 other groups, which used the same technique, there was participation from both genders (Kunzler, 2008b).

Figure 1 indicates a statistically significant improvement in the following domains: physical ( $p = 0.05$ ), psychological ( $p = 0.04$ ), environmental ( $p = 0.01$ ), general ( $p = 0.01$ ), and health ( $p = 0.01$ ) while within the social relationships domain the increase is insignificant ( $p = 0.47$ ). When it comes the effect of the intervention ( $r$ ), as measured on the Wilcoxon Signed Ranks Test (Rosenthal, 1991), a moderate effect was found in all domains (0.3 to 0.5) except for that of social relationships. However, if we analyze the 'general' and 'health' scores together (overall), it appears that the effect size is strong ( $\geq 5$ ).

It is worth noting that during the process of adapting the long version (WHOQOL 100) into the more concise WHOQOL-bref version, similar psychometric characteristics were noted in both. However, the WHOQOL-bref gathers fewer domains and the social relationships domain showed no discriminant validity. It should also be stated that this domain did not contribute significantly to measuring the variation of the overall quality of life, nor was a statistically significant difference found between patients and people in the general population. In fact, as this domain has fewer questions, it is less stable in psychometric terms (Chachamovich & Fleck, 2008).

The improvements to the quality of life domains may be attributed to the intervention, in that the technique encourages autonomy besides allowing experiences to be shared in the group sessions. In this sense, Costa Neto and Araujo (2008) insist on the need to evaluate the quality of life from two perspectives:

1) Someone from the area (usually a health professional's) opinion on this individual and 2) Their personal perspective on their socio-cultural and environmental situation. The Decision Making and Quality of Life technique encourages both. Thus, each participant determines their own goals; monitors their own performance. With group support, they can begin to see themselves differently and more in line with their desire to live well and feel good.

With respect to anxiety symptoms (Figure 2), the BAI estimates show a decrease in the total 'pre-intervention' and 'post-intervention' scores. This change indicates some improvement, but cannot be considered significant ( $p = 0.26$ ). The effect of the intervention was

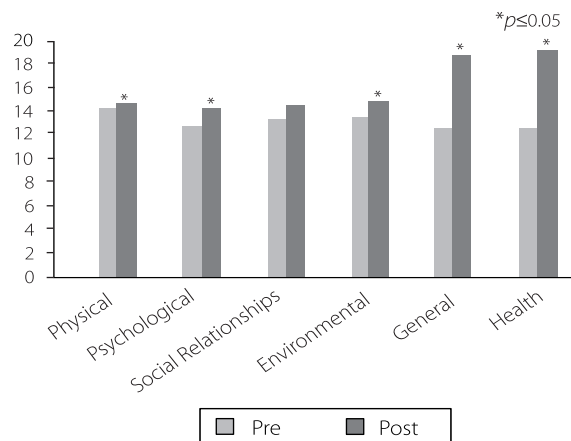


Figure 1. Wilcoxon Signed Ranks Test values for the quality of life domains.

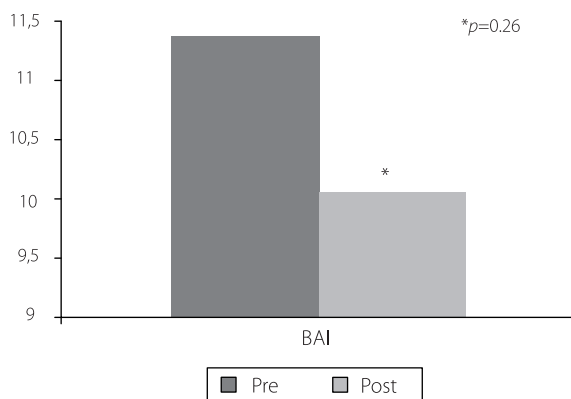


Figure 2. Results of the Beck Anxiety Inventory at pre- and post-intervention stages.

calculated as  $r=0.19$ , which indicates a small effect. In part, this discrete result may be explained by the fact that the instrument is composed of items that are designed to register the physical symptoms of anxiety and their intensity, without allowing for a more subjective approach. It should be noted that this study did not specifically address cognitive restructuring at the level of underlying assumptions in the cognitive model of anxiety.

From the point of view of individual analysis, nine participants showed a reduction in their total anxiety scores, while six showed an increase and three showed no difference. It should be noted that, as an emotional response, anxiety is often heightened when a person realizes that she/he is vulnerable and without adequate or sufficient resources to face potentially risky or dangerous situations. In fact, the period of data collection coincided with a critical moment in the participants' workplace, as the institution was involved in two-week strike and salary cuts were threatened (Sessions 10 and 11). Soon after the 12<sup>th</sup> session (closing stage), a general strike was triggered by failed salary negotiations. These circumstances most possibly had repercussions on the participants' anxiety levels.

As can be seen in Figure 3, the mean scores for depression indicators after intervention are lower than those on admission ( $p=0.02$ ). This result is particularly relevant because, unlike the BAI, 19 of the 21 items in the BDI instrument are formulated as thoughts, with higher scores indicating greater distortion. As the Decision Making and Quality of Life technique focuses

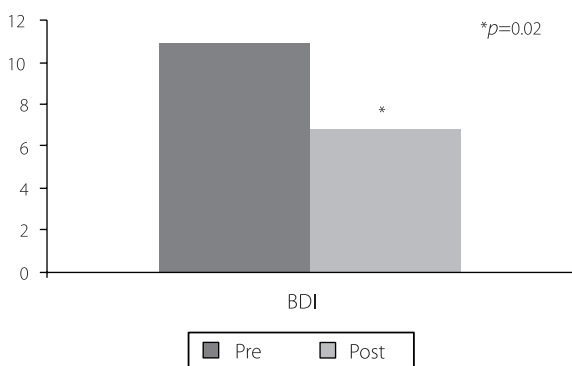
on thoughts, the statistically significant reduction on this scale indicates that cognitive restructuring did indeed take place. When the effect of the intervention ( $r$ ) is measured, the result (0.39) obtained, represents a moderate effect.

It is noteworthy that while our sample did not include participants with an established diagnosis of depression or any psychopathological condition, our results still showed a significant change. There are two possible explanations for this: the healthy and unhealthy behavior focused during the intervention has an impact on emotional state; or that some participants suffered from underlying, undiagnosed depressive disorders.

Individually, only six participants increased their depression indicators, though their scores did not justify a condition of depressive disorder. In turn, 12 participants decreased their scores and no scores remained unchanged. Since depression interferes directly with a person's ability to make decisions and thus adopt healthy behaviors, the improvement found is of consequence (Beck, 1997; Beck et al., 1997). Indeed, cognitive restructuring is considered to be an important factor in effective CT treatment (Beck, 1963; 2005; Beck et al., 1997; Rangé & Silveiras, 2001). Through this process, patients learn to identify and change unhealthy thoughts in favor of healthier ones (Beck, 2007; Beck & Knapp, 2008; Luty et al., 2007). Moreover, due to the role thoughts play as a mediator between emotion and behavior, a healthier repertoire can be established between the two when cognitive restructuring takes place (Beck et al., 1997).

The most common difficulty reported by participants (33%) referred to interpersonal relationships, followed by *not studying, not controlling emotion and personal carelessness*. It is interesting to note that lack of emotional control and personal carelessness may be reflected in personal relationships and in attitudes to study. As such, although the participants focused on individual unhealthy behaviors, it is possible to distinguish broad categories of difficulties that compromise the quality of life and health.

The healthy behavioral goal of being able to "relate well with others" was chosen by 28% of participants, followed by "study", "emotional control", "self-discipline", "stop ruminating on past events" and "improving self-care". One of the participants restructured



**Figure 3.** Results of the Beck Depression Inventory at pre- and post-intervention stages.

the following assumption: "If I accept that I cannot change the past, that does not mean I agree or like what has happened. If I accept this, I can stop ruminating and start investing in the present and get my life back".

Results support the affirmation that the Decision Making and Quality of Life technique contributes to health promotion. Through developing assumptions and identifying emotions, which is also part of the systematization of the technique, this process identifies unhealthy behaviors and their disadvantages and also allows for a deeper understanding of factors that are potentially able to induce them. With respect to healthy behavior, this also seems to be the case. In summary, the process triggered by the intervention promotes decision-making, autonomy and participants' determination to set goals to improve their quality of life and health.

### Final Considerations

This research shows an increase in quality of life in all of the WHOQOL-bref domains - brought about by decision-making, which favors healthy behaviors and evidenced by the participants' higher scores. The only domain in which improvements were not statistically significant was in that of 'social relationships'. This is precisely the domain that was judged in the validation process of this instrument as not contributing significantly to variations of the overall quality of life (Chachamovich & Fleck, 2008).

We recommended that future studies include other instruments for more specifically measuring anxiety, as the State-Trait Anxiety Inventory (STAI). It also seems pertinent to plan an intervention aimed at cognitive restructuring in anxiogenic situations (Spielberger, Gorsuch & Lushene, 1979). In the same vein, comparing the results to a control group (participants on the waiting list) with the results of a similar intervention group may help to clarify the preliminary evidence obtained by this study. Moreover, the expansion of the sample size would determine the ideal number of participants in each group, and enable greater generalization of findings.

We conclude that the specific CT technique - Decision Making and Quality of Life - can contribute to achieving therapeutic goals. Although the effect of

intervention on decreasing anxiety symptoms was calculated as being small, in relation to depression indicators it showed a moderate effect. In general, individuals believe that cognitions, emotions, behaviors and healthy physical reactions are only compatible with favorable situations. With the technique discussed in this study, they learn that even in unfavorable situations, healthy cognitions can prevail. Finally, the application of CT for promoting health and quality of life in the workplace converges with the expansion of personal demands, sensitized by institutional actions, which seems to be a growing trend.

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