

## Depression Thoughts Scale: Association with Depression Rating Scales

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### Abstract

Background: Several studies have reported a strong relationship between distorted thoughts and Major Depressive Disorder, but there is a lack of tests that match these needs. Objectives: to investigate the psychometric proprieties of Depression Thoughts Scale – EPD with depressive symptoms scales. Method: a total of 367 subjects divided into non-depressed and depressed groups were assessed. The first group contained 338 (92.1%) subjects classified as having no reported diagnosis of depression, while the remaining subjects (n=29) comprised the second group containing subjects with clinically and SCID-confirmed diagnosis of depression. Data collection was performed by applying instruments assessing depressive symptoms including the Baptista Depression Scale -EBADEP-A and Hamilton Rating Scale for Depression -HAM-D. Data was collected individually in the clinical group and collectively in the non-clinical group. Results: the data indicated that the EPD had moderate correlation with the HAM-D ( $p=0.001$ ) and strong with EBADEP A ( $p=0.001$ ), where depressives exhibited a greater number of distorted thoughts. Conclusion: the EPD proved a potentially useful tool for helping clinicians identify depressive thoughts, functioning as a complement to access specifically the cognitive factors related with depression.

**Keywords:** Thinking; Depression; Tests; Validity of tests

### Introduction

Major Depressive Disorder (MDD) is a highly prevalent, debilitating and multi-determinant condition. Cognitive functions can act as protective or facilitating factors for the development of mental disorders [1,2]. According to theories proposed by A. Beck [3,4] depressed patients tend to perceive themselves, the future and the world more negatively, since they have recurrent thoughts of inadequacy, such as being incapable of carrying out their daily tasks, a burden to others, and unable to do anything right as well as having negative reports about tasks and social interactions [3,5-7]

Kaplan et al. [8] noted that 67% of subjects with MDD had distorted thoughts while Medeiros and Sougey [9] found distorted thoughts in 86.7% of patients assessed. The cited study involved 75 patients with MDD (82.7% women) treated at a Center for Basic Healthcare (CAIS). Studies comparing MDD against patients with other mental disorders and control groups have shown that the cognitive profile of depressed subjects differs significantly, indicating that perceptions of self, others and the world were more pessimistic where the greater the negativity the worse the depressive symptoms [5,7,10-13]. According to the results of these studies, the main characteristics were a more unstable, negative and global attribution with schemes related to perceived failure in performance of activities, low self-expression, reduced satisfaction and social isolation. Lastly, the studies also underscored the importance of identifying these distortions for predicting future depressive episodes [6,14,15].

It is important to consider to date, these conclusions have been drawn based on a variety of different instruments for assessing depression and beliefs/thoughts. This disparity in measurements can

hamper comparison of results and analysis of instruments, such as the Hamilton Rating Scale for Depression (HAM-D) and Beck Depression Inventory (BDI) that accesses depression descriptors in different proportions. While the HAM-D assesses approximately 28% cognitive symptoms and a comparable proportion of vegetative symptoms, the BDI evaluates 52% cognitive items and 29% vegetative [16]. Thus, it follows that the magnitude of correlation between these constructs is influenced by the emphasis of items that each depression scale places on cognitive variables, as well as by the type of scale used to assess cognition/beliefs or cognitive dysfunctionality. Another point to consider is that, generally speaking, the thoughts scales were not designed for a specific mental disorder, thereby hindering the clinician's task of monitoring and assessing improvement.

Thus, despite the strong relationship between general dysfunctional thoughts and depressive disorder, a specific instrument for assessing automatic depression-related thoughts is currently lacking. Given the importance of dysfunctional thoughts in MDD management and recovery, the present study sought to assess the discriminative ability of the scale and correlate performance with depressive symptoms in subjects diagnosed with MDD and in controls with no reported depression diagnosis.

### Method

#### Participants

The present study involved a total of 367 subjects, 92.1% (n=338) of whom were classified into the group with no reported depression diagnosis and 7.9% (n=29) into the clinical group with depression diagnosis. Participant age ranged from 18 to 64 years ( $M=29.50$ ;

SD=10.75) and 30.2% (n=129) had a mother and/or sister with depression.

Among individuals with no reported depression diagnosis, 55% (n=186) were university graduates, 32.8% (n=111) administrative workers and 12.1% (n=41) healthcare professionals. In the non-clinical group, 81.1% (n=274) were women, and subjects were predominantly single 54% (n=198), 26.4% (n=97) were married, 3.5% (n=13) separated, 4.1% (n=15) widowed, and 1.6% (n=6) married under common law.

For the clinical group with depression diagnosis, 75.9% (n=22) were women, and subjects were aged between 23 and 60 years (M=42.97; SD=10.71). In terms of marital status, the majority were married 51.7% (n=15), 24.1% were single (n=7), while widows/widowers and separated categories each accounted for 10.3% (n=3), while only one participant was divorced. This way, the non-clinical group was predominantly single, whereas the clinical group had a predominance of non-single subjects.

## Instruments

### Structured Clinical Interview for DSM IV Axis I Disorders – Clinician Version –SCID-CV [17]:

The study employed the version translated into Portuguese containing 15 questions, whose responses were used to fill out the prerequisites of the DSM-IV manual to determine diagnosis of the disorder. The reliability study was performed by the same authors in psychiatric patients from a hospital located in the hinterland of São Paulo. The test-retest method was employed, allowing an interval of two days between the interviews conducted. A group of 45 patients were interviewed, having a mean age of 34.9 years (SD=11.8) and predominantly female gender distribution (60%). The level of agreement for the diagnosis (Kappa) was found to be 0.83, confirming good reliability of the scale despite not containing all the criteria found in the original version for research. In the present study, only the booklet for mood was applied, focusing on 15 items assessing the presence or absence of symptoms characteristic of Major

## Depressive Disorder

### Depression Thoughts Scale –EPD [18]:

The EPD was performed based on the cognitive triad proposed by Beck [3,4] considered a substrate for understanding depression-related rigid and negativist interpretations. The analyses of internal structure using principal component analysis indicated a five-factor solution with an explained total variance of 47.13. For the model used in the present study, i.e. 34-item, the reliability indices were  $\alpha=0.88$  for F1,  $\alpha=0.85$  for F2,  $\alpha=0.78$  for F3,  $\alpha=0.53$  for F4 and  $\alpha=0.66$  for the last factor. Thus, the indices ranged from insufficient to excellent and F3 was therefore retained, given the hypothesis that this index value was attributed to the fact that it contains only three items. The total scale had a reliability of  $\alpha=0.91$ , confirming that overall the scale had an excellent reliability rating.

In this version, the items and Eigenvalues for each factor were as follows: F1 (low self-esteem/low self-worth) with 11 items (25.6% of variance), referring to items about thoughts of defeat, negative assessment of the future and of life, thoughts of being a failure and

dispirited; F2 (interpersonal relationship) had seven items explaining 8.9% of variance and reflected thoughts of feeling supported, understood and being wanted; F3 (self-worth) (1.8%) containing eight items with positive self-assessment in relation to own achievements, future, perceived self-worth and desire to live life; F4 (1.5%)(negative expectations/dissatisfaction), corresponding to three items related to the desire to be a better person and perception of own situation as hopeless; and finally, the last factor, F5 (1.4%) (Socially maladjusted) containing five items related to self-assessment as being a bad person, vulnerable, responsible for own suffering and for making other people feel down. Of the items comprising the scale, 19 are negative and 15 positive, where the higher the score, the greater the depressive thoughts, since positive items are inverted in the final tally. It should be noted this constitutes a preliminary version of the scale and further studies are needed to further define its final factorial structure.

### Hamilton Rating Scale for Depression –HAM D:

A multidimensional hetero-assessment scale, regarded as the gold standard for assessing severity of depressive episodes in patients with mood disorders, although was not designed to be a diagnostic screening instrument for depression. The version of the questionnaire for use in Brazil was translated by Carvalho, Tarcio, Lima, Soares Azevedo and Caetano [19] by applying the back-translated version to 63 bilingual university graduates. The 17-item version was employed in the present study, whose items are scored from 0 to 4 based on the presence/absence of symptoms over the past week. It predominantly assesses cognitive and vegetative symptoms, containing fewer items related to social, motor, anxiety and mood factors, and rates depression as mild, moderate or severe. Since no other Brazilian psychometric studies for this scale were available, the reliability of the International version of between 0.83 and 0.94 was adopted. For the present study, the reliability of the scale, calculated based on Cronbach's Alpha coefficient, was  $\alpha=0.85$ , i.e., within the reliability parameters proposed for the International version.

### Baptista Depression Scale –Adult version –EBADEP A (Baptista) [20]:

This scale was developed to monitor depression and was not intended for use as a diagnostic instrument. The scale has a sensitivity of 0.98 and specificity of 0.88, indices deemed adequate for tracking depressive symptoms. The overall accuracy of the instrument in the total sample was 0.97 and correlations with the Beck scales were 0.66 for BDI; 0.35 for BHS (hopelessness); 0.55 for BAI (anxiety) and 0.41 for BSI (suicidal ideation). The instrument is a four-point scale, where the higher the score, the greater the depressive symptoms. It contains 26 indicators, including social (18%), mood (20%), cognitive (33%), vegetative/somatic (18%), motor (4.5%), irritability (4.5%), and anxiety (2%). Total score ranges from 0 to 135 points, calculated by tallying the options selected, with higher scores denoting greater depressive symptomatology. The accuracy of the EBADEP was calculated for the present sample, revealing that results mirrored the normalization study ( $\alpha= 0.97$ ).

## Procedures

The study was approved by the Research Ethics Committee of São Francisco University (CAAE 0348.0.142.203-11) and application of the instrument was authorized by the institutions involved. All participants in the study signed duplicate copies of a Free and

Informed Consent Form containing information pertinent to the study in question. Data collection was carried out using a convenience sample, where subjects were selected from a psychiatric clinic, companies, universities and hospitals. The instruments were applied by the author, individually for those subjects diagnosed with severe depression, and collectively for the other participants. All subjects included in the group with diagnosis of depression were first diagnosed by a medical psychiatrist. The depression diagnosis was subsequently confirmed by the mood booklet of the SCID-CV and depression severity determined by the HAM-D 17. Application time averaged 30 to 90 minutes. The group drawn from the psychiatric clinic, in addition to the EPD and EBADEP A, also completed the SCID-CV and the HAM-D.

### Data Analysis

For data analysis, parametric statistics were employed using the software Statistical Package for Social Sciences –SPSS [21]. Differences in mean values were analysed using Student’s t-test for two variables. The relationship between the EPD plus its factors and the EBADEP A, as well as the relationship of age with the EBADEP A and the EPD was determined based on Pearson’s (r) correlation. Linear regression analysis was used to ascertain the extent to which depressive thoughts explained depressive symptoms. Results with a p-value ≤ 0.05 were considered significant. Groups were divided into a clinical group and a non-clinical group with no reported history of depression owing to the selection criteria of the group and also to help determine which variables were remarkable in each respective group. For inferential analyses, the groups were stratified into single (single, divorced, widows) and non-single (married, remarried and married under common law).

### Results

The first inferential analysis yielded difference in mean scores of the non-clinical and clinical groups for points scored on the scales applied. These results are given in Table 1.

	Group	Mean	Standard Deviation	t	df	P	d
EPD_F1	Without depression	14.09	4.79	-8.738	365	0.001	1.69
	With depression	22.83	8.50				
EPD_F2	Without depression	14.13	4.16	-3.098	365	0.002	0.60
	With depression	16.69	5.49				
EPD_F3	Without depression	14.87	4.18	-4.151	365	0.001	0.80
	With depression	18.38	6.16				
EPD_F4	Without depression	7.48	2.13	-4.744	365	0.001	0.92
	With depression	9.45	2.20				

EPD_F5	Without depression	7.38	2.40	-8.619	365	0.001	1.67
	With depression	11.59	3.62				
EPD_TOT	Without depression	57.97	12.51	-8.391	365	0.001	1.68
	With depression	78.93	16.97				
EBADEP A	Without depression	28.54	21.87	-16.919	362	0.001	0.38
	With depression	15.34	37.45				

**Table 1:** Difference in mean scores on EPD and EBADEP A between groups without (n=338) and with (n=29) depression diagnosis.

\*Factors from EPD: F1 Low self-esteem/low self-worth; F2 Interpersonal relationships; F3 Self-worth; F4 Negative expectations/dissatisfaction; F5 social maladjustment. Sig. p>0.05; p>0.001

The results of the analysis of difference in means indicated that the clinical group had higher average scores on the scales assessing depression-related thoughts and symptoms, a difference which reached statistical significance. The level of symptomatology was revealing, confirming an absence of depressive symptoms in the group with no reported depression and the presence of moderate depression symptomatology in the clinical group, as measured by the EBADEP A [20]. Subsequently, an analysis of correlation between the Depression Thoughts Scale (EPD) and the Baptista Depression Scale (EBADEP A) was carried out (Table 2).

	EPD_F1	EPD_F2	EPD_F3	EPD_F4	EPD_F5	EPDTOT
EBADEP A non-clinical	0,56**	0,31**	0,44**	0,37**	0,31**	0,59**
EBADEP A clinical	0,78**	0,11	0,54**	0,40*	0,35	0,75**

**Table 2:** Pearson’s (r) correlation coefficient for EPD and EBADEP A in groups without (n=335) and with (29) depression diagnosis.

\*Factors from EPD: F1 Low self-esteem/low self-worth; F2 Interpersonal relationships; F3 Self-worth; F4 Negative expectations/dissatisfaction; F5 social maladjustment. Sig. \*p>0.05; \*\*p>0.001

The results depicted in Table 2 shows the instruments were positively correlated, with weak-to-moderate correlations in the group without reported diagnosis [22]. In the clinical group, weak-to-strong correlations were observed for the factors, with the exception of F2, which had no statistically significant relationship. For the clinical group, a stronger correlation of greater low self-esteem and total score on the EPD with EBADEP A performance was observed. Additionally, of all the factors in the EPD, F1 had the strongest correlation whilst F2 and F5 had the weakest correlation.

Another instrument, the HAMD, was applied specifically in the group with diagnosis of depression. Correlation analyses were also performed between the HAMD and the EBADEP A and, as expected, the two instruments were found to be highly correlated (r=0.72; p=0.001), where greater depression symptoms were also correlated

with greater severity of depression. Regarding correlations with the EPD, this was shown to be moderate ( $r=0.66$ ;  $p=0.01$ ).

Linear regression analysis was performed to determine the extent to which depressive thoughts ( $y$ ) predicted depression symptoms ( $x$ ). This analysis was conducted only for the group with no reported diagnosis because the low number of subjects in the clinical group precluded this type of analysis. The results showed that EPD was able to predict  $\beta=16.02$  the depressive symptoms measured by the EBADEP in an equation explaining 44% of the variance ( $p=0.001$ ).

A comparison of mean scores obtained by participants on the EPD and EBADEP A was also performed using Student's  $t$ -test to determine differences in scores on the EPD for gender and marital status (single and non-single). Statistically significant differences in Factor 4 (negative expectations) scores on the EPD were detected for the non-clinical group ( $t=2.35$ [334];  $p=0.019$ ), where men ( $M=8.06$ ;  $SD=2.11$ ) attained higher scores than women ( $M=7.36$ ;  $SD=2.12$ ). This analysis was not performed for the clinical group owing to the predominance of women. With regard to marital status, Factor 4 (Negative expectations) was statistically significant in the non-clinical group ( $t=2.079$ [330];  $p=0.038$ ), showing that individuals with single status scored higher ( $M=7.63$ ;  $SD=2.18$ ) than non-single subjects ( $M=7.11$ ;  $SD=1.97$ ) on this factor. However, no such significant difference was found for the clinical group.

For the age analysis, Pearson's ( $r$ ) correlation was performed to ascertain whether there was a relationship between older age and scores on the EBADEP -A and EPD. On the EBADEP -A, depression symptoms were found to increase with age ( $r=0.18$ ;  $p=0.001$ ) while for the EPD, no correlation between advancing age and depressive thoughts was detected ( $r=0.09$ ;  $p=0.008$ ). Lastly, Student's  $t$ -test was applied to determine differences in mean age between the groups with and without reported depression diagnoses. The result was statistically significant ( $t$ [347]=-6.463;  $p=0.001$ ) indicating the clinical group ( $M=29.50$ ;  $SD=10.75$ ) had a higher mean age than the non-clinical group ( $M=42.97$ ;  $SD=10.71$ ).

## Discussion

Depression constitutes a disorder with multi-determinate causes that affects people worldwide whose incidence has risen in recent years [2] Therefore, developing techniques to help screen for cases of depression is important. This need prompted the present study whose main focus was to determine the association between the EPD and the EBADEP -A in both a clinical group, characterized by subjects with SCID-CV-confirmed diagnosis of depression, and in a group reporting no depression diagnosis, and between the EPD and the HAM-D in the clinical group only, in order to verify evidence of validity based on the relationship with other variables and group criteria using the EPD. The rationale was that instruments measuring depressive thoughts can be useful tools for detecting episodes.

According to A. Beck, [4] negative thoughts are precursors of major depressive disorder, i.e. the negative perception of a person regarding their relationships with self and others renders them vulnerable to the onset of mental disorders. Studies investigating the role of depressive thoughts in promoting the development, maintenance and exacerbation of major depressive disorder have revealed a clear-cut relationship among these variables [5,8-11].

Based on the results of the present study, it is clear that depressive thoughts in the study sample were associated with depressive

symptomatology as assessed by the instruments applied. The different analyses performed showed the depressive group had higher mean scores compared to the non-clinical group with no reported depression diagnosis, corroborating the findings of the study by Alloy et al. [11] in which depressives exhibited greater thought distortions than subjects without mood disorders.

Pearson's correlation test showed that greater depression symptoms were positively correlated with greater depression thoughts in both groups, where the magnitude of this correlation ranged from weak to moderate on Factors 2 and 5 [22]. This result corroborates the data reported in the related literature, including the studies cited above. Similarly, correlations of the EPD and HAM-D were also significant. Showing a moderate degree of correlation, again indicating that greater depressive symptoms were associated with greater depressive thoughts in the study sample

Comparing results by group, the clinical group had a stronger correlation of greater low self-esteem (Factor 1) and total score on the EPD with performance on the EBADEP A, both of which had a high degree of correlation. Additionally, the dimension encompassing low self-esteem and low self-worth showed the strongest correlation in both groups, albeit stronger in the clinical group. This factor reflects thoughts of feeling like a loser, that everything goes wrong, of being unable to resolve problems and of needing someone to lean on. This result is in-line with findings reported in the literature, showing that individuals with more depressive symptoms have greater feeling of inadequacy and incapacity than subjects with no reported depression [3,5]

It is important to note that, among the possible correlation between EPD Total and EBADEP-A, the non-clinical group showed statistically significant correlations across all factors, whereas the clinical group exhibited correlations only for three out of the five factors. Of the total possible correlations in the non-clinical group, three were moderate, while in the clinical group two were found to have strong correlation [22]

Therefore, based on this evidence, the results found in terms of correlation between the depression instruments can be explained. Nevertheless, the strength of correlations between these instruments and the EPD observed in the present study exceeds levels reported in previous studies investigating the relationship between thoughts and depression. To exemplify, the degree of correlation observed in the present study proved higher than those identified in the study by Hunt and Forand [6] who observed correlations between the BDI and DAS of  $r=0.16$ , and also superior to the values in the study by Haefel et al. [14] with a correlation between DAS and BDI of  $r=0.36$ . As outlined previously, different scales are configured differently with regard to depression content and thoughts content and therefore this comparison should be viewed with caution, as discussed below. Moreover, the EPD was designed specifically for assessing depressive thoughts, unlike the DAS which does not focus on any particular disorder.

Pearson's correlation also revealed that both the EBADEP-A and HAM-D had high correlation, demonstrating that the scales chosen have similar configurations, despite the differences in their respective method of application and configuration of items. The instruments used to assess depressive disorders (EBADEP-A and HAM-D) have particularities which can place different emphasis on the expected relationship between cognition and depressive symptoms [16]. In the EBADEP-A for instance, 33% of the 45 items ( $n=14$ ) contained in the

scale are related to cognitive content (Baptista, 2012), compared with 28% of the 17 items (n=5) in the HAM-D scale.

Concerning the data obtained for mean differences, the men in the non-clinical group were found to have more thoughts of dissatisfaction with the current situation and desire for change compared to the women. This same factor was also notable among single participants in the non-clinical group. These data proved difficult to compare with findings in the literature retrieved for the present study but showed that single men in the study sample were more dissatisfied with their perspective of the present than women, warranting further studies to confirm these findings.

Additionally, no difference in mean scores for depressive thoughts was found between men and women as measured by general scores on the EPD. The results of this study corroborated those of the study by Hunt and Forand [6] but differed to the findings of Watkins and Moulds [15]. It is noteworthy however that, akin to the present investigation, the study by Hunt and Forand [6] was conducted in subjects presenting no depressive symptoms, whereas the sample studied by Watkins and Moulds [15] comprised mostly individuals diagnosed with depression. Although a group with depression diagnosis was included in the present study, no statistically significant differences in mean scores was found between genders, a finding which might, among other causes, be attributed to the small number of men in the depression group.

Unexpectedly, depressive symptoms did not differ between genders in the group without known diagnosis of depression. Typically, results tend to show that women are more likely to develop depression, [23,24] yet results of the present study were similar to the study by Hunt and Forand involving University graduates, in which no differences in mean scores were found between genders. Likewise, no statistically significant differences in mean scores were found for marital status. With regard to this result, the relationships between depressive disorders and marital status are largely inconclusive, although some evidence points to a tendency for this group to be divorced [24,25] while others indicate a tendency toward being single [26].

Regarding age, the clinical group was found to have a higher mean age and, although weak, an association between greater depressive symptoms and advancing age was identified. Generally, the literature reports that the 15-44 year-old age group is the most affected by depression [26,27]. In the present study, the clinical sample had a mean age of 42 years, i.e. a value within the limits of the statistics available. These results corroborate a previous study conducted in Brazil [25] which identified a greater propensity for mood disorder among individuals from the 35-49 year age group. Notwithstanding, it is important to bear in mind that the present study employed a convenience sample, and that the sample with diagnosed depressives was small.

Thus, the information reported here provides evidence of an association between depressive symptoms and thoughts, in as far as this scale replicated information previously confirmed in a number of different studies confirming the relationship between depression and dysfunctional thoughts. The results of this study also serve as a possible reference for analysis of depressive thought patterns in a Brazilian population. The goal of the present study was not to exhaustively analyse all the possible relationships between the groups, but to observe how depression-related variables behave in relation to measurements of depressive thoughts, and whether the results found

for Brazil were similar to findings in studies conducted in other countries.

It should be noted that the aim of developing the EPD is to complement the psychological assessment process, representing an easy-to-apply test useful for detecting distortions in thoughts that can lead to the onset of depressive disorder, or serve to provide more scientifically-based data for continuous assessment of the depressive thoughts exhibited by patients during treatment. In this respect, the evidence found suggests that this instrument is potentially a promising and effective tool, given its moderate correlation with the other depression instruments, which proved within theoretical expectations for a scale with this purpose, although readers should note this is a preliminary version of the instrument.

Several limitations of the present study should be pointed out. The main limitation was the small number of subjects diagnosed with depression included in the study. Even though the EPD was able to find statistically significant results in comparison with a gold standard test (HAM-D) and shows variability, the small size hampering further analyses, such as differences between gender and age. In addition, the subjects in the non-clinical group were not controlled by applying a more in-depth assessment to ensure none of them had a mental disorder. Future studies involving contrasting groups and exploring depressive thoughts should control for possible comorbidities related to major depressive disorder in order to ascertain whether variations among thought patterns exist, and should include other validated measurements of depressive thoughts to assess evidence of convergent validity.

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## Conflicts of interest

This article involves no conflicts of interest.

## References

1. Organização Mundial de Saúde [OMS] (2001) Relatório sobre a Saúde no Mundo 2001: Saúde mental: nova concepção, nova esperança.
2. World Health Organization (2012) Depression: a global crisis. *Mental Health Day*.
3. Beck AT (1976) *Cognitive therapy and the emotional disorders*. NW: International Universities Press.
4. Beck AT, Rush AJ, Shaw BF, Emery G (1982) *Terapia Cognitiva da Depressão*. Rio de Janeiro: Zahar.
5. Giles DE, Shaw BF (1987) Beck's cognitive theory of depression: convergence of constructs. *Compr Psychiatry* 28: 416-427.
6. Hunt M, Forand NR (2005) Cognitive vulnerability to depression in never depressed subjects. *Cognition and Emotion* 19: 763-770.
7. Riso LP, du Toit PL, Blandino JA, Penna S, Dacey S, et al. (2003) Cognitive aspects of chronic depression. *J Abnorm Psychol* 112: 72-80.
8. Kaplan HI, Sadock BI, Grebb JA (2007) *Compêndio de psiquiatria: ciência do comportamento e psiquiatria clínica*.
9. Medeiros HLV de, Sougey EB (2010) Distorções do pensamento em pacientes deprimidos: frequência e tipos. *Jornal Brasileiro de Psiquiatria* 59: 28-33.

10. Thyer BA, Papsdorf JD, Kilgore SA (1983) Relationships between irrational thinking and psychiatric symptomatology. *J Psychol* 113: 31-34.
11. Alloy LB, Abramson LY, Francis (1999) Do negative cognitive styles confer vulnerability to depression? *Current directions in Psychological Science*. 8: 128-132.
12. Solomon A (2002) Demônio do meio dia: uma anatomia da depressão. Rio de Janeiro: Objetiva.
13. Claudio V (2009) Domínios de esquemas precoces na depressão. *Análise Psicológica* 27: 143- 157.
14. Haefel GJ, Abramson LY, Dykman BM, Donovan P, Hogan ME, et al. (2005) Negative cognitive styles, dysfunctional attitudes and the remitted depression paradigm: a search for the elusive cognitive vulnerability to depression factor among remitted depressives. *Emotion* 5: 343-348.
15. Watkins E, Moulds M (2005) Positive beliefs about rumination in depression- a replication and extension. *Personality and Individual Differences* 39: 73-82.
16. Calil MH, Pires MLN (1998) Aspectos gerais das escalas de avaliação de depressão. *Revista de Psiquiatria Clínica* 25: 240-244.
17. Del-Ben CM, Rodrigues CR, Zuardi AW (1996) Reliability of the Portuguese version of the structured clinical interview for DSM-III-R (SCID) in a Brazilian sample of psychiatric outpatients. *Braz J Med Biol Res* 29: 1675-1682.
18. Carneiro AM (2013) Escala de Pensamentos Depressivos (EPD): Estudos Psicométricos Preliminares. Dissertação de Mestrado. Programa de Pós Graduação Stricto Sensu em Psicologia, Universidade São Francisco, Itatiba, SP.
19. Carvalho R, Tarcio F, Garcia Lima M, Azevedo RC, Caetano D (1993) Tradução do inglês para o português do Questionário de Auto-avaliação da Escala de Hamilton para Depressão. *Jornal Brasileiro de Psiquiatria* 42: 255-260.
20. Baptista MN (2012) Escala Baptista de Depressão versão Adulto-EBADep-A. São Paulo: Vetor
21. IBM Cor (2012) Released. IBM SPSS Statistics for windows, Version 20.0. New York: Armonk, IBM Corporation.
22. Dancy CR and Reidy J (2006) Estatística sem matemática para psicologia usando o SPSS para Windows. (trad, Lorí Viali). Porto Alegre: Artmed.
23. American Psychiatric Association [APA] (2002) Manual Diagnóstico e Estatístico de Transtornos Mentais IV TR. (4th edn). Porto Alegre: Artmed.
24. Santos MJ and Kassouf AL (2006) Uma estimativa econométrica do retorno da educação para a saúde mental dos brasileiros: escolaridade versus depressão.
25. Bromet E, Andrade, LH, Hwang I, Sampson NA, Alonso J, et al. (2011) Cross national epidemiology of DSM IV major depressive episode. *BMC Medicine* 9: 90.
26. Barreira DP, Cavaglia F, Pires AM (2001) Cognições Antecipatórias: Um estudo comparativo e correlacional. *Psicologia, Saúde e Doenças* 2: 101-105.
27. World Health Organization [WHO]. Depression.