



Research report

Validation of the Brazilian brief version of the temperament auto-questionnaire TEMPS-A: The brief TEMPS-Rio de Janeiro

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ABSTRACT

Background: Over the last thirty years, Akiskal and collaborators have described and developed operationalized diagnostic criteria for five types of affective temperaments – cyclothymic, irritable, hyperthymic, depressive, and anxious. A 110-item, yes-or-no questionnaire, the Temperament Evaluation of Memphis, Pisa, Paris, and San Diego (TEMPS-A), was specifically developed for measuring temperamental variation. The TEMPS-A was translated into more than 25 languages and cross-culturally valid versions are now available in Italian, French, German, Japanese, Turkish, Arabic, Polish, Hungarian, Spanish and Portuguese. Recent studies in the US and in Europe, however, have suggested that shorter versions of TEMPS-A can be just as efficient as the full ones while potentially enhancing the compliance of respondents. The main objective of the present study was to validate a brief Brazilian Portuguese version of TEMPS-A (brief TEMPS-Rio de Janeiro).

Methods: Our main sample consisted of 997 undergraduate students (female = 72.6%) from seven different universities located in the city of Rio de Janeiro, Brazil. An additional group of 167 healthy senior citizens (women = 83.8%) was recruited in senior community centers in the city of Rio de Janeiro, Brazil. All participants were asked to complete the 110-item, Brazilian translation of the full version of the TEMPS-A.

Results: An exploratory factor analysis (PCA type 2, Varimax rotation) vying for a five-factor solution yielded mixed results, with cyclothymic traits, physical symptoms of anxiety and preoccupation with the well-being of a family member loading together on the first factor. When a forced six-factor solution was attempted, cyclothymic, irritable, hyperthymic, and depressive were delineated as predicted by the theory. The original generalized anxious temperament was split into two sharply delimited components, a “worrying” subscale and an abbreviated anxious subscale, which included physical symptoms of anxiety and concerns with the well-being of relatives. Based on the tripartite model of anxiety and depression, we

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proposed that the abridged anxious subscale, which includes physical symptoms of anxiety, represents the “true” generalized anxious temperament, while the “worrying” subscale corresponds to the “general distress factor”. The internal consistency of the six subscales thus identified was generally good, ranging from 0.67 (anxious subscale) to 0.81 (worrying subscale), with cyclothymic, irritable, depressive, and hyperthymic subscales exhibiting intermediate values (0.74, 0.74, 0.72, and 0.7, respectively).

Limitations: The present study was based on a non-clinical sample that does not reflect accurately the characteristics of the Brazilian population. The relative uniformity of the sample in terms of age and education precluded a more in-depth analysis of the influence of these highly relevant factors. Further, we did not assess convergent, divergent or test–retest validity. *Conclusions:* We believe that the brief Brazilian version of the TEMPS-A auto-questionnaire will provide Brazilian researchers and clinicians with a psychometrically sound instrument and thus contribute toward the creation of a worldwide research network dedicated to the investigation of affective temperaments.

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1. Introduction

Despite the growing acknowledgment of the necessity of assessing temperamental variations in normal and clinical populations, official classifications do not currently include a diagnostic category for affective temperaments. To achieve this critical goal, a number of complex steps needed to be undertaken, such as defining the most relevant temperament types, establishing operational criteria, and creating diagnostic instruments. In the last thirty years, the work of H.S. Akiskal and his collaborators has transformed the descriptions of temperaments found in the classical medical and psychiatric texts into a theoretically coherent and empirically supported doctrine and brought this aim within reach.

Like many other major intellectual achievements in the history of mankind, the origins of the concept of affective temperament can be traced back to ancient Greece. Hippocrates, in the 4th century B.C., proposed his fourfold humoral view of the temperaments, which posited that the four basic types – melancholic, phlegmatic, choleric, and sanguine – originated from specific mixtures of the body's four key components (blood, black bile, yellow bile and phlegm) (Berrios, 1993). Some twenty-four centuries later, the keen clinical intuitions of Emil Kraepelin (1913/1921) gave affective temperaments their contemporary outlook. According to him, each subtype of the then newly described ‘manic–depressive insanity’ was associated with a specific set of subclinical manifestations, which he called a “fundamental state” (*Grundzustände*). Accordingly, the depressive, irritable, manic, and cyclothymic “fundamental states” were described.

More recently, Akiskal and his collaborators updated and expanded the scope of the Kraepelinian conceptual framework in several significant ways. The venerable term “temperaments” was retained, since it emphasizes the central issue of the emotional reactivity. At first, only the four types originally described by Kraepelin were operationalized but in 1998 the generalized anxious temperament was added to the roll (Akiskal and Mallya, 1987; Akiskal, 1992, 1998).

Temperamental variations have been shown to further compound the morbidity associated with mood disorders. In patients with major depression, temperamental dysregulations are associated with earlier age of onset and higher risk of relapse (Cassano et al., 1989) and with poorer response to treatment with antidepressants (Koukopoulos et al., 1983).

Suicide attempters score significantly higher than controls in temperaments including depressive components (i.e. depressive, cyclothymic, irritable and anxious) (Rihmer et al., 2009). This same temperament profile was found to predict the occurrence of mixed episodes in bipolar I patients (Röttig et al., 2007). Cyclothymic temperament, in particular, has been associated with lower educational attainment (Genaro et al., submitted for publication), unstable employment records, financial problems, marital failure, and drug and alcohol abuse (Akiskal et al., 1977; Rounsaville et al., 1991).

While still envisaging the temperaments as trait sub-syndromic manifestations of the affective pathology that are likely to represent liability factors in the subsequent development of mood disorders, Akiskal used the tenets of Darwinian medicine to highlight their roles as key components of human psychological nature. According to the balancing-selection hypothesis (Keller, 2008), mood disorders are conceptualized as extremes in an oligogenic model of inheritance, whereas affective temperaments would represent mitigated phenotypic expressions of this very same set of genes. Although mood disorders by themselves may be detrimental in terms of fitness, natural selection would not remove the genes underlying it from the population pool because they confer some degree of adaptive advantage to individuals manifesting attenuated phenotypic behavioral expressions (Akiskal and Akiskal, 2005).

Hyperthymic temperament, for instance, is characterized by lifelong exuberant, upbeat, overenergetic and overconfident traits that, from an evolutionary perspective, would lend distinct advantages in leadership, exploration, territoriality and mating. In contrast, depressive temperament is strongly associated with sensitivity to suffering, an important attribute in human species, where caring for the young and for sick individuals is necessary for group survival. The generalized anxious temperament describes an exaggerated personality disposition toward worrying which would increase the odds of survival of one's extended phenotype in a kin selection paradigm, thus maximizing inclusive fitness. Depressive and generalized anxious temperament would therefore promote altruistic behaviors. Cyclothymic individuals characteristically display a flamboyant and restless pursuit of romantic opportunities, thus also enhancing their reproductive perspectives (Akiskal, 1998, 2001; Akiskal and Akiskal, 2005).

The operationalization of the diagnostic criteria for the temperament types led to the development of the Temperament Evaluation of Memphis, Pisa, Paris, and San Diego (TEMPS), the first instrument designed for measuring affective temperaments in the classic German sense (Akiskal et al., 2005a), in both its interview and autoquestionnaire versions. An Italian research team standardized the Memphis, Pisa, Paris and San Diego, interview version (TEMPS-I) (Placidi et al., 1998; Akiskal et al., 1998), a semi-structured interview version that takes no more than twenty minutes to administer. A French version of the TEMPS-I was also implemented (Hantouche et al., 1998).

The autoquestionnaire version of the Temperament Evaluation of Memphis, Pisa, Paris, and San Diego (TEMPS-A) is a yes-or-no type instrument which contained, at first, 84 items and assessed dysthymic (items 1–22), cyclothymic (items 23–42), hyperthymic (items 43–63) and irritable (items 64–84) temperaments. Later, clinical and theoretical considerations led to the addition of 26 new items describing the anxious temperament, resulting in the 110-item, full version of the TEMPS-A.

In the last ten years, the TEMPS-A was translated into more than 25 languages. Cross-culturally valid versions are now extant in Italian (Pompili et al., 2008), French (Krebs et al., 2006), German – Münster (Erfurth et al., 2005 and Halle (Akiskal et al., 2002) versions, Japanese (Matsumoto et al., 2005), Turkish (Vahip et al., 2005), Lebanese Arabic (Karam et al., 2005), Polish (Borkowska et al., 2006) and Hungarian (Rózsa et al., 2008). Two Spanish – Barcelona (Sánchez-Moreno et al., 2005) and Buenos Aires (Vázquez et al., 2007) – and one Portuguese – Lisbon (Figueira et al., 2008) – translations were recently made available.

Several studies have documented the usefulness and psychometrical soundness of abbreviated versions of the original 110-item TEMPS-A. A 50-item TEMPS-A Clinical Version was developed in joint collaboration by the San Diego and Memphis centers. This version, however, did not include an anxious temperament subscale (Akiskal et al., 2005a). Erfurth et al. (2005) validated an abridged German (Münster) version of TEMPS-A, the brief TEMPS-M, which consisted of 35 out of the original 110 items and upheld the proposed five-factor structure of the original TEMPS-A. Each subscale of the German brief TEMPS-M had seven items. A short, 39-item version of the TEMPS-A created in San Diego comprised 12 cyclothymic, 8 depressive, 8 irritable, 8 hyperthymic, and 3 anxious items (Akiskal et al., 2005b) and was shown to be able to differentiate between different populations of mood-disordered patients, individuals at high risk for affective disorders, and normal controls (Mendlowicz et al., 2005a,b). A recent study found that the Italian brief, 39-item version of the TEMPS-A, with 12 cyclothymic, 8 hyperthymic, 8 irritable, 8 depressive, and 3 anxious items, also had good psychometric properties in terms of validity and reliability (Preti et al., 2010). These studies suggest that shorter versions of TEMPS-A can be just as efficient as the full ones while potentially enhancing the compliance of respondents.

The main objective of the present study was to validate a brief Brazilian Portuguese version of TEMPS-A. Based on the experience accumulated from the development of the short German and American versions, we expected to create a

compact scale with a total of 40 items, with eight items being assigned to each of the five subscales. If found to be methodologically sound, such an arrangement would allow for a more balanced scoring of temperamental variations and provide a suitable model for brief versions of the TEMPS-A in additional languages.

2. Methods

2.1. Participants

2.1.1. Sample I

Our first sample consisted of 997 undergraduate students from seven different universities located in the city of Rio de Janeiro, Brazil. All participants were contacted in their respective classrooms. The teachers were asked to make thirty minutes of their class time available for their pupils to complete the 110-item, Brazilian version of the full TEMPS-A. Of these respondents, 724 (72.6%) were female. The mean age of female students was 28.1 (SD = 17.99) years and that of the male participants was 29.3 (SD = 14.47) years. Seventy-nine percent of the men and 81.5% of the women were single. The participants were majoring in 7 different fields: Psychology (n = 602, 60.4%), Medicine (n = 171, 17.2%), Law (n = 111, 11.1%), Physics, (n = 45, 4.5%), Nursing (n = 41, 4.1%), Physical Therapy (n = 14, 1.4%), and Physical Education (n = 13, 1.3%).

2.1.2. Sample II

An additional group of 167 healthy senior citizens (women = 83.8%) was recruited in senior community centers in the city of Rio de Janeiro, Brazil, and asked to fill out the long version of the 110-item, Brazilian version of TEMPS-A. The mean age of the men was 70 (SD = 6.62) years and that of the women was 70.8 (SD = 7.98) years. Most volunteers were married (male = 100% and female = 45%), although a significant minority of female volunteers were single (17.9%), divorced (5%) or widowed (32.1%).

Out of the original pool of 1236 potential participants, seven refused to take part in the study and twenty-four filled out the TEMPS-A incorrectly. Forty-one cases were lost due to technical problems in the scanning process. The research project was approved by the local IRB and a written informed consent was obtained from all volunteers.

2.2. Measures

2.2.1. Scale development

TEMPS-A was translated into Brazilian Portuguese by one of us (M.V.M.) and then back-translated into English by other two members of the research team (M.C.V. and A.E.N.) who had not previously examined the English version of the questionnaire. The accuracy of the translation and its conformity with the original version were verified by one of the creators of the instrument (H.S.A.). The translation was further refined through an iterative process that incorporated feedback on wording from researchers, clinicians and research volunteers.

2.2.2. Statistical analysis

Subscales for the TEMPS-A were derived empirically with the use of principal-component analysis (PCA) with a

Varimax (orthogonal) rotation. Based on the theoretical underpinnings of the TEMPS-A and on the accumulated experience with the international versions of the scale, a forced five-factor solution was adopted. To maximize the discriminative power, items were assigned to subscales only if they loaded greater than 0.35 on that factor and no more than 0.28 on any other factor. In case nine or more items were found to satisfy these requirements, only the eight items loading more heavily on the factor were selected. Items with negative loadings were also excluded. Items loading well only on a factor other than their original one had their content scrutinized to assess whether they could reasonably be given a different interpretation and assigned to the new subscale. Internal consistency for each subscale was assessed with the use of coefficient α (Cronbach, 1951). All analyses were conducted using SPSS version 17.0.

3. Results

3.1. Factorial structure of the brief TEMPS-RJ

A preliminary review showed that items 60 (*I am the kind of person who likes to be the boss*) and 75 (*I like to tease people, even those I hardly know*) were being systematically misinterpreted by the population study. Paradoxically, while item 60 was seen by respondents in a negative light, item 75 was interpreted as a positive feature. These items were therefore excluded from the statistical analyses.

An exploratory factor analysis (PCA type 2, Varimax rotation) vying for a five-factor solution yielded mixed results. Items 96, 92, 94, 34, 105, 25, 106, 90, 39, 93, 21, 38, 99, 38, and 31 loaded on a first factor composed by physical symptoms of anxiety and preoccupation with the well-being of a family member (both of which were part of the original anxious temperament subscale) and by cyclothymic traits. Items 2, 4, 3, 6, 1, 70, 33, 81, 83, 7, and 8 loaded on “depressive” factor. Items 52, 51, 48, 47, 44, 54, 82, 50, 53, 62, 45, 36, 58, 49, and 55 loaded on a “hyperthymic” factor. Items 73, 64, 74, 27, 76, 72, 67, 71, and 77 loaded on an “irritable” factor. Finally, items 85, 89, 86, 88, and 87 loaded on a fifth factor comprised only by the “worrying” items of the original anxious temperament subscale.

Since these findings were deemed inconsistent with the theoretical framework proposed by Akiskal and collaborators, a forced six-factor solution was attempted. As seen in Table 1, a purely “cyclothymic” factor, composed by items 34, 28, 30, 38, 25, 23, 39, and 24, emerged. Items 8 and 22 clearly pertained only to the depressive side of the cyclothymic experience and, for this reason, were excluded from the final configuration of a cyclothymic subscale. The first factor accounted for 11.36% of the total variance.

Items 64, 73, 74, 76, 27, 67, 72, 71, and 84 loaded on an “irritable” factor. Although 27 (*I often blow up at people and then feel guilty about it*) was originally a cyclothymic item, its content matched very well the description of the irritable temperament and was thus included in the corresponding subscale. Item 84 was excluded since there were already eight items with a heavier loading on the irritable subscale. The second factor accounted for 4.47% of the total variance.

A “hyperthymic” factor was composed by items 51, 52, 54, 47, 48, 44, 53, and 36. Although 36 (*I feel all emotions*

intensely) was originally a cyclothymic item, its content was considered to correspond well to the description of the hyperthymic temperament and was thus included in the later subscale. Although items 50, 55, 58, and 45 also loaded well in this factor, they were excluded since there were already eight items with a heavier loading on the hyperthymic subscale. The third factor accounted for 4.16% of the total variance.

Items 1, 65, 6, 2, 4, 101, 3, and 70 loaded on a “depressive factor”. Although 65 (*I am by nature a dissatisfied person*) and 70 (*I am driven by an unpleasant restlessness that I don't understand*) were originally part of the irritable subscale, their content was considered to match well the description of the depressive temperament and were thus included in the latter subscale. Item 101 (*My sleep is not restful*) was originally part of the anxious subscale and, since its content was considered nonspecific, was excluded from the subscale in spite of its good loading. In contrast, an exception was opened to item 33 (*I am told that I often get pessimistic about things, and forget previous happy times*), whose content was deemed compatible with the description of the depressive temperament but had a borderline exclusionary loading in its original cyclothymic scale (0.29) since it was needed to complete the eight items of the depressive subscale. The fourth factor accounted for 2.36% of the total variance.

As in the five-factor solution, items 85, 89, 86, 88, and 87 were found to load on a factor comprised only by the “worrying” items of the original anxious temperament subscale. The fifth factor accounted for 2.14% of the total variance.

Finally, items 94, 93, 99, 96, 110, 95, 100, 106, 97, and 105 loaded on an “anxious” factor and the first eight of them were included in the corresponding subscale. In the five-factor solution, these items, which describe physical symptoms of anxiety and preoccupations related to one's own family well-being, loaded together with cyclothymic traits on a single factor. The sixth factor accounted for 1.98% of the total variance.

3.2. Internal consistency of the brief TEMPS-Rio de Janeiro

The internal consistency of the six subscales thus identified was generally good, ranging from 0.67 (anxious subscale) to 0.81 (worrying subscale), with cyclothymic, irritable, depressive, and hyperthymic subscales exhibiting intermediate values (0.74, 0.74, 0.72, and 0.7, respectively).

3.3. Correlation within TEMPS-A and principal component analyses

As shown in Table 2, cyclothymic temperament exhibited noteworthy correlations (>.35) with all temperaments, except the hyperthymic, which appears to be independent from all others. Anxious temperament also correlated significantly with worrying.

3.4. Principal factor analysis loading of the six brief TEMP-Rio de Janeiro subscales

Principal component analyses were performed for the six affective temperament scores, with Varimax orthogonal transformation taking into account factors with eigenvalues

Table 1
Principal factor analysis loading of the TEMPS-Rio following Varimax rotation.

TEMPS-Rio items	Factor					
	1	2	3	4	5	6
1 D Sou uma pessoa triste, infeliz. <i>I'm a sad, unhappy person.</i>	0.02	0.02	0.01	0.53	0.08	0.14
2 D As pessoas dizem que não consigo ver o lado mais positivo das coisas. <i>People tell me I am unable to see the lighter side of things.</i>	0.04	0.28	−0.21	0.46	0.26	0.03
3 D Tenho sofrido muito na vida. <i>I have suffered a lot in life.</i>	0.08	0.00	0.07	0.39	0.13	0.05
4 D Acho que as coisas sempre acabam do pior modo. <i>I think things often turn out for the worst.</i>	0.05	0.10	−0.12	0.43	0.01	0.07
5 Desisto facilmente. <i>I give up easily.</i>	0.38	−0.04	−0.31	0.25	−0.05	0.07
6 D Que eu me lembre, sempre me senti um fracasso. <i>For as long as I can remember, I've felt like a failure.</i>	0.21	−0.04	−0.09	0.48	0.07	0.07
7 Sempre me culpei por coisas que os outros podem não achar muito importantes <i>I have always blamed myself for what others might consider no big deal.</i>	0.38	0.13	−0.22	0.06	0.33	−0.01
8 Não pareço ter tanta energia quanto as outras pessoas. <i>I don't seem to have as much energy as other people.</i>	0.39	−0.04	−0.28	0.26	0.01	0.07
9 Sou o tipo de pessoa que não gosta muito de mudanças. <i>I'm the kind of person who doesn't like change very much.</i>	−0.04	0.04	−0.28	0.01	0.15	0.22
10 Quando estou num grupo, prefiro ouvir os outros falarem. <i>In a group, I would rather hear others talk.</i>	0.11	−0.25	−0.36	0.01	0.09	0.21
11 Eu frequentemente cedo para os outros. <i>I often give into others.</i>	0.33	−0.27	−0.13	−0.08	0.19	0.11
12 Sinto-me pouco à vontade quando conheço novas pessoas <i>I feel very uneasy meeting new people.</i>	0.08	0.10	−0.37	0.05	0.09	0.16
13 Sinto-me facilmente magoado por críticas ou rejeição <i>My feelings are easily hurt by criticism or rejection.</i>	0.35	0.19	−0.22	0.03	0.23	0.12
14 Sou o tipo de pessoa com quem se pode sempre contar. <i>I am the kind of person you can always depend on.</i>	0.09	−0.06	0.17	−0.22	0.01	0.10
15 Coloco as necessidades os outros acima das minhas. <i>I put the needs of others above my own.</i>	0.28	−0.24	0.07	0.04	0.33	0.04
16 Sou uma pessoa que trabalha muito. <i>I am a hard working person.</i>	−0.24	−0.10	0.21	0.03	0.34	0.07
17 Prefiro trabalhar para os outros do que ser o patrão. <i>I would rather work for someone else than be the boss.</i>	0.01	−0.26	−0.03	0.14	0.22	0.03
18 Sou naturalmente arrumado (a) e organizado (a). <i>It is natural for me to be neat and organized.</i>	−0.25	−0.11	0.13	0.02	0.31	0.12
19 Sou o tipo de pessoa que duvida de tudo. <i>I'm the kind of person who doubts everything.</i>	0.12	0.27	−0.03	0.17	0.03	0.26
20 Meu desejo sexual sempre foi fraco. <i>My sex drive has always been low.</i>	0.02	−0.23	0.04	0.23	0.25	−0.03
21 Normalmente, preciso de mais de 9 horas de sono. <i>I normally need more than 9 hours of sleep.</i>	0.27	0.13	−0.09	0.04	−0.27	0.22
22 Frequentemente me sinto cansado (a) sem motivo. <i>I often feel tired for no reason.</i>	0.45	0.04	−0.19	0.27	−0.07	0.19
23 C Tenho mudanças bruscas no humor e no nível de energia. <i>I get sudden shifts in mood and energy.</i>	0.41	0.39	−0.03	0.27	0.10	0.03
24 C Meu humor e meu nível de energia ora estão altos, ora estão baixos; raramente estão no meio. <i>My moods and energy are either high or low, rarely in between.</i>	0.39	0.27	0.04	0.23	0.09	0.07
25 C Minha capacidade de pensar varia bastante, de muito precisa a pobre, sem motivo aparente. <i>My ability to think varies greatly from sharp to dull for no apparent reason.</i>	0.42	0.04	−0.08	0.07	−0.02	0.25
26 Posso gostar muito de alguém e depois perder completamente o interesse por essa pessoa. <i>I can really like someone a lot, and then completely lose interest in them.</i>	0.30	0.23	0.11	0.05	−0.12	0.13
27 I Frequentemente, estouro com as pessoas e depois me sinto culpado (a) por isso. <i>I often blow up at people and then feel guilty about it.</i>	0.21	0.50	−0.01	0.05	0.15	−0.01
28 C Muitas vezes, começo coisas mas perco o interesse nelas antes de acabá-las. <i>I often start things and then lose interest before finishing them.</i>	0.52	0.12	−0.05	0.18	−0.14	−0.03

(continued on next page)

Table 1 (continued)

TEMPS-Rio items		Factor					
		1	2	3	4	5	6
29	Meu humor oscila muitas vezes sem qualquer razão. <i>My mood often changes for no reason.</i>	0.43	0.35	−0.05	0.25	0.11	0.00
30 C	Eu oscilo constantemente entre me sentir energizado (a) e quase parando, lento (a). <i>I constantly switch between being lively and sluggish.</i>	0.47	0.14	−0.07	0.25	−0.03	0.20
31	Às vezes, deito-me a noite me sentindo deprimido (a), mas levanto de manhã me sentindo ótimo (a). <i>I sometimes go to bed feeling down, but wake up in the morning feeling terrific.</i>	0.29	0.06	0.15	−0.04	0.13	0.16
32	Algumas vezes, vou deitar me sentindo ótimo (a) e acordo de manhã achando que não vale a pena viver. <i>I sometimes go to bed feeling great, and wake up in the morning feeling life is not worth living.</i>	0.31	0.11	−0.03	0.25	0.04	0.12
33 C	Dizem que muitas vezes fico pessimista com as coisas e esqueço os momentos felizes do passado. <i>I am told that I often get pessimistic about things, and forget previous happy times.</i>	0.29	0.20	−0.17	0.35	0.26	0.07
34 C	Vario muito entre me sentir superconfiante e me sentir inseguro (a) de mim mesmo (a). <i>I go back and forth between feeling overconfident and feeling unsure of myself.</i>	0.55	0.20	−0.06	−0.08	0.08	0.19
35	Vario muito entre ser aberto (a) e retraído (a) com os outros. <i>I go back and forth between being outgoing and being withdrawn from others.</i>	0.34	0.05	−0.14	−0.03	0.04	0.17
36 H	Sinto todas as emoções intensamente. <i>I feel all emotions intensely.</i>	0.19	0.11	0.43	0.00	0.13	0.05
37	Minha necessidade de sono varia muito, de poucas horas a mais de nove horas. <i>My need for sleep varies a lot from just a few hours to more than 9 h.</i>	0.20	−0.15	0.15	0.07	0.05	0.00
38 C	O modo como vejo as coisas às vezes é vibrante e às vezes é sem graça. <i>The way I see things is sometimes vivid, but at other times lifeless.</i>	0.46	0.07	0.00	0.10	0.08	0.12
39 C	Sou o tipo de pessoa que pode ficar triste e alegre ao mesmo tempo. <i>I am the kind of person who can be sad and happy at the same time.</i>	0.39	0.08	0.11	0.13	0.09	0.25
40	Fantasio muito a respeito de coisas que as outras pessoas consideram impossíveis de atingir. <i>I daydream a great deal about things that other people consider impossible to achieve.</i>	0.34	0.16	0.24	0.01	−0.01	0.18
41	Freqüentemente, tenho uma grande necessidade de fazer coisas chocantes. <i>I often have a strong urge to do outrageous things.</i>	0.08	0.25	−0.02	0.28	−0.13	0.20
42	Sou o tipo de pessoa que se apaixona e desapaixona facilmente. <i>I am the kind of person who falls in and out of love easily.</i>	0.23	0.23	0.07	0.01	−0.16	0.16
43	Em geral, meu humor é para cima ou alegre. <i>I'm usually in an upbeat or cheerful mood.</i>	−0.06	−0.19	0.35	−0.46	−0.19	0.03
44 H	A vida é uma festa que aproveito ao máximo. <i>Life is a feast which I enjoy to the fullest.</i>	−0.05	−0.11	0.50	−0.23	−0.18	0.10
45	Gosto de contar piadas; os outros acham que tenho senso de humor. <i>I like telling jokes, people tell me I'm humorous.</i>	0.00	0.17	0.35	−0.12	−0.15	0.00
46	Sou o tipo de pessoa que acredita que no final tudo vai dar certo. <i>I'm the kind of person who believes everything will eventually turn out all right</i>	−0.05	−0.14	0.32	−0.42	−0.11	0.02
47 H	Tenho muita confiança em mim mesmo. <i>I have great confidence in myself.</i>	−0.32	−0.17	0.51	−0.11	0.00	0.01
48 H	Tenho com freqüência grandes idéias. <i>I often get many great ideas.</i>	0.00	−0.03	0.50	0.07	0.08	−0.02
49	Estou sempre fazendo alguma coisa. <i>I am always on the go.</i>	−0.23	−0.08	0.35	−0.08	0.29	−0.01
50	Posso realizar muitas tarefas sem me cansar. <i>I can accomplish many tasks without even getting tired.</i>	−0.17	−0.04	0.42	−0.07	0.18	−0.04
51 H	Tenho o dom de falar, convencer e inspirar os outros. <i>I have a gift for speech, convincing and inspiring to others.</i>	0.00	0.11	0.59	−0.01	0.01	−0.08
52 H	Adoro envolver-me em novos projetos, mesmo que arriscados. <i>I love to tackle new projects, even if risky.</i>	0.05	0.05	0.56	−0.04	0.05	−0.01

Table 1 (continued)

TEMPS-Rio items	Factor					
	1	2	3	4	5	6
53 H Uma vez que me decida a fazer algo, nada me detém. <i>Once I decide to accomplish something, nothing can stop me.</i>	−0.12	0.02	0.49	−0.05	0.08	0.10
54 H Sinto-me totalmente à vontade mesmo com pessoas que mal conheço. <i>I am totally comfortable even with people I hardly know.</i>	−0.05	−0.10	0.53	0.13	0.01	−0.12
55 Adoro estar com muitas pessoas. <i>I love to be with a lot of people.</i>	0.04	−0.05	0.41	−0.15	−0.08	−0.04
56 As pessoas dizem que freqüentemente me meto nos assuntos dos outros. <i>People tell me that I often get my nose into others business.</i>	0.12	0.18	0.25	0.11	0.02	0.02
57 Sou generoso (a) e gasto muito dinheiro com outras pessoas. <i>I am generous, and spend a lot of money on other people.</i>	0.28	−0.15	0.14	0.02	0.10	0.09
58 Tenho habilidades e sou muito bom (boa) em várias áreas. <i>I have abilities and expertise in many areas.</i>	−0.05	0.02	0.38	−0.09	0.08	−0.05
59 Sinto que tenho o direito e o privilégio de fazer o que me agrada. <i>I feel I have the right and privilege to do as I please.</i>	−0.11	−0.04	0.28	−0.18	−0.11	0.13
60 Sou o tipo de pessoa que gosta de ser o (a) chefe. <i>I am the kind of person who likes to be the boss.</i>	−	−	−	−	−	−
61 Quando discordo de alguém, posso discutir acaloradamente. <i>When I disagree with someone, I can get into a heated.</i>	0.06	0.45	0.29	−0.06	−0.02	0.01
62 Meu desejo sexual é sempre forte. <i>My sex drive is always high.</i>	0.07	0.19	0.28	−0.09	−0.28	0.03
63 Normalmente, me sinto bem com menos de 6 horas de sono. <i>Normally I can get by with less than 6 h of sleep.</i>	−0.02	−0.19	0.32	0.10	0.29	−0.12
64 I Sou uma pessoa rabugenta (irritável). <i>I am a grouchy (irritable) person.</i>	0.11	0.61	−0.19	0.10	0.10	−0.05
65 D Sou, por natureza, uma pessoa insatisfeita. <i>I am by nature a dissatisfied person.</i>	0.19	0.25	−0.18	0.49	0.16	−0.02
66 Eu me queixo muito. <i>I complain a lot.</i>	0.30	0.44	−0.15	0.19	0.20	0.02
67 I Sou muito crítico (a) em relação aos outros. <i>I am highly critical of others.</i>	0.04	0.48	0.01	0.00	0.14	0.06
68 Freqüentemente, sinto-me no meu limite. <i>I often feel on edge.</i>	0.29	0.07	−0.01	0.29	0.34	0.13
69 Freqüentemente, sinto-me tenso (a) <i>I often feel wound up.</i>	0.29	0.27	−0.16	0.23	0.24	0.12
70 D Sou impulsionado (a) por uma agitação desagradável que não consigo entender. <i>I am driven by an unpleasant restlessness that I don't understand</i>	0.28	0.15	0.06	0.38	0.14	0.17
71 I Muitas vezes eu fico tão aborrecido (a) a ponto de quebrar tudo. <i>I often get so mad that I will just trash everything.</i>	0.07	0.40	0.08	0.26	−0.14	0.14
72 I Quando contrariado (a), eu posso entrar numa briga. <i>When crossed, I could get into a fight.</i>	−0.02	0.48	0.20	0.07	−0.02	0.09
73 I As pessoas me dizem que eu estouro por nada. <i>People tell me I blow up out of nowhere.</i>	0.08	0.59	−0.06	0.09	0.12	0.04
74 I Quando irritado (a), eu sou áspero (a) com as pessoas. <i>When angry, I snap at people.</i>	0.07	0.59	−0.06	−0.08	−0.05	0.07
75 Gosto de brincar com as pessoas, mesmo as que não conheço. <i>I like to tease people, even those I hardly know.</i>	−	−	−	−	−	−
76 I Meu humor ferino já me causou problemas. <i>My biting humor has gotten me into trouble.</i>	0.16	0.52	−0.09	0.14	0.01	0.07
77 Posso ficar tão furioso (a) a ponto de machucar alguém. <i>I can get so furious I could hurt someone.</i>	−0.03	0.34	0.09	0.22	−0.11	0.20
78 Sou tão ciumento do meu (minha) esposo (a) (ou amante) que não consigo suportar. <i>I am so jealous of my spouse (or lover), that I cannot stand it.</i>	0.14	0.19	0.01	0.14	−0.05	0.14
79 Sou conhecido (a) por xingar muito. <i>I am known to swear a lot.</i>	−0.11	0.32	0.02	0.30	−0.19	0.11
80 Disseram-me que fico violento (a) com apenas uns poucos <i>I have been told that I become violent with just a few drinks.</i>	−0.13	0.17	−0.01	0.13	−0.15	0.11
81 Sou uma pessoa muito cética. <i>I am a very skeptical person.</i>	0.02	0.03	−0.07	0.30	0.00	0.04
82 Eu poderia ser um (a) revolucionário (a). <i>I could be a revolutionary.</i>	0.10	0.19	0.34	0.14	−0.12	−0.04
83 Meu desejo sexual é freqüentemente tão intenso a ponto de ser desagradável. <i>My sex drive is often so intense that it is truly unpleasant.</i>	0.04	0.09	0.10	0.24	−0.15	0.08

(continued on next page)

Table 1 (continued)

TEMPS-Rio items	Factor					
	1	2	3	4	5	6
84 (Apenas para mulheres): tenho ataques incontroláveis de cólera logo antes de minhas regras. (Women only): I have attacks of uncontrollable rage right before my periods.	0.14	0.39	−0.01	0.08	−0.03	0.18
85 W Que eu me lembre, sempre fui uma pessoa preocupada. I have been a worrier for as long as I can remember.	0.04	0.08	−0.01	0.06	0.62	0.16
86 W Estou sempre preocupado (a) com uma coisa ou outra. I'm always worrying about one thing or another.	0.17	0.14	−0.02	0.02	0.56	0.20
87 W Estou sempre preocupado (a) com assuntos do dia-a-dia que os outros consideram sem importância. I keep on worrying about daily matters that others consider minor.	0.16	0.09	0.07	0.21	0.53	0.17
88 W Não consigo deixar de ficar preocupado (a). I cannot help worrying.	0.13	0.09	−0.02	0.28	0.60	0.18
89 W Muitas pessoas já me disseram para não me preocupar tanto. Many people have told me not to worry so much.	0.12	0.21	−0.10	0.11	0.58	0.17
90 Quando estou estressado (a), muitas vezes me dá um branco. When stressed, my mind often goes blank.	0.21	−0.03	0.04	0.12	0.06	0.34
91 Não consigo relaxar. I am unable to relax.	0.15	0.01	−0.07	0.46	0.38	0.20
92 Muitas vezes sinto-me trêmulo (a) por dentro. I often feel jittery inside.	0.17	0.05	−0.08	0.29	0.05	0.54
93 A Quando estou estressado (a), minhas mãos muitas vezes tremem. When stressed, my hands often tremble.	0.09	0.05	−0.02	0.19	−0.08	0.51
94 A Muitas vezes meu estômago fica embrulhado. I often have an upset stomach.	0.24	0.17	−0.06	0.01	−0.01	0.51
95 A Quando estou nervoso (a), eu posso ter diarreia. When I'm nervous, I may have diarrhea.	0.03	0.15	−0.11	−0.12	0.04	0.40
96 A Quando estou nervoso (a), muitas vezes sinto náuseas. When I'm nervous, I often feel nauseous.	0.21	0.11	−0.04	−0.01	−0.06	0.47
97 Quando estou nervoso (a), eu tenho que ir ao banheiro mais frequentemente. When I'm nervous, I have to go to the bathroom more often.	0.03	0.10	−0.03	−0.04	0.15	0.37
98 Quando alguém demora para chegar em casa, fico com medo de ter havido um acidente. When someone is late coming home, I fear they may have had an accident.	0.01	−0.04	0.01	0.04	0.30	0.41
99 A Tenho frequentemente medo que alguém na minha família pegue uma doença séria. I am often fearful of someone in my family coming down with a serious disease.	0.09	−0.06	0.08	0.09	0.24	0.48
100 A Estou sempre na expectativa de que alguém possa me trazer más notícias sobre alguém da minha família. I'm always thinking someone might break bad news to me about a family member.	0.09	−0.07	0.03	0.25	0.25	0.40
101 Meu sono não é repousante. My sleep is not restful.	0.19	−0.12	0.01	0.40	0.16	0.16
102 Frequentemente, tenho dificuldades para pegar no sono. I frequently have difficulty falling asleep.	0.22	−0.05	0.11	0.29	−0.01	0.16
103 Sou, por natureza, uma pessoa muito cautelosa. I am, by nature, a very cautious person.	−0.21	−0.25	−0.01	−0.02	0.28	0.28
104 Muitas vezes, acordo à noite com medo de que ladrões estejam dentro de casa. I often wake up at night afraid that burglars are in the house.	0.04	−0.05	−0.04	0.21	0.15	0.30
105 Tenho dores de cabeça à toa quando estou estressado (a). I easily get headaches when stressed.	0.23	0.19	−0.08	−0.07	−0.02	0.37
106 A Quando estou estressado (a), fico com uma sensação desconfortável no peito. When stressed, I get an uncomfortable feeling in my chest.	0.18	0.08	0.05	0.20	0.03	0.39
107 Sou uma pessoa insegura. I'm an insecure person.	0.40	0.17	−0.42	0.13	0.15	0.09
108 Mesmo as menores mudanças na rotina me estressam muito. Even minor changes in routine stress me highly.	0.15	0.18	−0.23	0.28	0.20	0.32
109 Quando estou guiando, mesmo que não tenha feito nada de errado, fico com medo de que a polícia me mande parar. While driving, even when I haven't done anything wrong, I fear that police may stop me.	0.16	0.02	−0.11	0.10	0.02	0.22
110 A Ruídos bruscos facilmente me deixam sobressaltado (a). Sudden noises startle me easily.	0.06	0.04	−0.05	0.12	0.16	0.46

Items in bold loaded in just one factor and were included in the short version of TEMPS-Rio.

Table 2

Spearman's rho correlation coefficients for the six brief TEMPS-Rio subscales.

Temperament	Cylothymic	Irritable	Hyperthymic	Depressive	Worrying	Anxious
Cylothymic	1.00					
Irritable	0.41	1.00				
Hyperthymic	−0.13	−0.06	1.00			
Depressive	0.45	0.29	−0.11	1.00		
Worrying	0.35	0.23	−0.04	0.44	1.00	
Anxious	0.43	0.22	−0.07	0.34	0.36	1.00

of 1 or more. Two superfactors were identified for the five affective temperament scales, accounting 71% of the variance (Table 3). Anxious, cylothymic, depressive and irritable temperaments loaded on Factor 1, while hyperthymic temperament correlated with Factor 2.

3.5. Distribution and gender effects of the six brief TEMPS-Rio de Janeiro subscales

Table 4 shows the mean, median, standard deviation, 10th and 90th percentiles (scores and percentage) and estimates of skewness and kurtosis for the six brief TEMPS-Rio subscales grouped according to the subject's gender. Table 5 indicates that female participants had significantly higher scores on the worrying and the anxious subscales.

4. Discussion

This study described the development and validation of the brief TEMPS-RJ, an abbreviated version in Brazilian Portuguese language of the original 110-item TEMPS-A. A long Portuguese version of the TEMPS-A from Lisbon was recently made available (Figueira et al., 2008) but the cultural and linguistic differences between Portugal and Brazil are now too deeply ingrained to allow for its generalized use in the latter country. For the same reason, it is anticipated that Portuguese-speaking countries in Africa and Asia, such as Angola, Mozambique and East Timor, may require their own versions.

The establishment of a validated version of a questionnaire is a complex enterprise. The process of translation requires transferring the meaning from the source language into the target idiom without distortions. However, a too literal translation of TEMPS-A items can sometimes create faulty meanings that reflect deep cross-cultural differences and are at odds with the original intentions of its creators. For instance, Vahip et al. (2005) reported that item 16 (*I am a*

hard working person), originally in the depressive scale, has a positive social valence in the Turkish culture, and does not appear to tap depressive traits. Similarly, item 18 (*It is natural for me to be neat and organized*) appears like a 'social desirability' item that could only be associated with a positive temperament, such as the hyperthymic one.

Brazilian respondents also gave peculiar interpretations to some items of the TEMPS-A. Item 60 (*I am the kind of person who likes to be the boss*), for instance, was originally part of the hyperthymic subscale, but was given a strongly negative connotation by our volunteers. While in an Anglo-Saxon context this statement is associated with a positive concept of leadership, in the Brazilian cultural environment it conveyed the sense of an opportunity to dominate coworkers or punish them for real or imagined offenses. This biased understanding of the role of a "boss" probably reflects the negative undertones that underlie the historical development of political institutions in the Ibero-American world.

In other cases, however, items had to be reassigned from one subscale to another in order to make internal adjustments in the TEMPS-A. Like us, Akiskal et al. (2005a) found that the relocation of item 27 (*I often blow up at people and then feel guilty about it*) to the irritable subscale was justified on both conceptual and statistical grounds. Given that individuals with depressive and cylothymic temperaments share important aspects of their emotional experiences, depressive items loading on the cylothymic subscale (and vice-versa) may sometimes need to be reassigned or deleted.

In contrast, item 75 (*I like to tease people, even those I hardly know*) was, originally, part of the irritable subscale, but was seen in a very positive light by Brazilian respondents. Apparently, teasing recently acquainted people is considered a measure of affability and informality in Brazilian culture, a feature that has been reported in other countries as well [Gill-White, cited by Richerson and Boyd, 2006].

From a psychometric point of view, the main goal of this study was to assess the factorial structure of the Brazilian (Rio de Janeiro) version of the TEMPS-A. Based on the theoretical framework proposed by H.S. Akiskal and his collaborators, a five-factor structure has been assumed by all researchers who undertook the task of validating national versions of the TEMPS-A. Nevertheless, less than ideal solutions have systematically resulted from these enterprises. For instance, Erfurth et al. (2005), while validating the short German (Münster) version (brief TEMPS-M), reported that a number of items (85 and 89) from the anxious temperament scale which asked about worrying/rumination loaded on the depressive temperament factor. In consequence, a more selective anxious scale, composed only of items related to somatic aspects of anxiety (e.g., item 94: 'I often have an

Table 3

Principal factor analysis loading of the six brief TEMPS-Rio subscales following Varimax rotation. Factor loadings greater than 0.6 are represented in bold.

Brief TEMPS-Rio subscales	Factor	
	1	2
Cylothymic	0.77	−0.13
Irritable	0.61	−0.04
Hyperthymic	−0.06	0.98
Depressive	0.72	−0.20
Worrying	0.69	0.08
Anxious	0.68	0.00

Table 4

The mean, median, standard deviation, 10th and 90th percentiles (scores and percentage) and estimates of skewness and kurtosis for the six brief TEMPS-Rio subscales grouped according to the subject gender.

	Mean	Median	Standard deviation	10th percentile		90th percentile		Kurtosis	Skewness
				Score	Percentage	Score	Percentage		
<i>Male N = 300</i>									
Cyclothymic temperament	34.4	25.0	28.7	0.0	19.0	75.0	14.7	−0.63	0.61
Irritable temperament	32.0	25.0	25.4	0.0	17.3	75.0	10.3	−0.45	0.60
Hyperthymic temperament	56.5	62.5	27.5	12.5	11.3	100	11.0	−0.72	−0.20
Depressive temperament	16.1	12.5	20.7	0.0	46.7	50.0	12.3	1.25	1.37
Worrying temperament	48.7	40.0	37.2	0.0	16.8	100.0	22.3	−1.41	0.09
Anxious temperament	22.3	25.0	21.0	0.0	27.7	50.0	15.6	0.77	1.02
<i>Female N = 864</i>									
Cyclothymic temperament	37.2	37.5	27.8	0.0	14.4	75.0	15.6	−0.74	0.47
Irritable temperament	34.2	25.0	26.7	0.0	17.4	75.0	12.2	−0.54	0.54
Hyperthymic temperament	54.6	62.5	27.9	12.5	13.1	87.5	20.8	−0.85	−0.19
Depressive temperament	13.2	12.5	18.5	0.0	49.7	37.5	13.4	3.63	1.84
Worrying temperament	55.6	60.0	35.9	0.0	22.3	100	24.9	−1.29	−0.22
Anxious temperament	34.2	25.0	25.7	0.0	14.6	75.0	11.7	−0.53	0.53

upset stomach', and item 105: 'I easily get headaches when stressed'), emerged. In a study describing the validation of the Turkish version of the TEMPS-A, [Vahip et al. \(2005\)](#) noted that while factor loadings of depressive and anxious (cognitive) items overlapped significantly and tended to form a single cluster, a smaller factor loading with certain somatic items from the anxious temperament stood out as a separate cluster. The authors called the latter "nervous temperament". In an assessment of the psychometric properties of the Lebanese–Arabic TEMPS-A, [Karam et al. \(2005\)](#) identified five factors: the first one represented a combination of depressive and anxious (worrying) temperament traits while the fourth harbored the anxious (somatic) items.

[Akiskal et al. \(2005b\)](#) found that the five factors of the brief version of the American English TEMPS-A loaded with the items that were originally assigned to them. However, the anxious temperament subscale extracted in this study was composed, out of its original 26 items, only by items 98 (*When someone is late coming home, I fear they may have had an accident*), 99 (*I am often fearful of someone in my family coming down with a serious disease*), and 100 (*I'm always thinking someone might break bad news to me about a family member*). Although this finding is consistent with the putative evolutionary role of the anxious temperament of increasing the odds of survival of one's extended phenotype, it is noteworthy that all the worrying and somatic items of the original anxious temperament subscale were deleted from the factor analysis.

Summing up these studies, [Akiskal and Akiskal \(2005\)](#) concluded that "... Whenever the testing involved only four

temperaments (depressive, cyclothymic, irritable and hyperthymic), all four were upheld. Whenever a generalized anxious temperament was added, some overlap was shown between worrying and depressiveness, and somatic anxiety emerged as a distinct factor..." (p. 1).

In our validation study of the brief Brazilian Portuguese (Rio de Janeiro) version of TEMPS-A, an initial attempt to pursue a five-factor solution was marred by the same sort of obstacles. A first factor, combining physical symptoms of anxiety, preoccupation with the well-being of a family member and cyclothymic traits, emerged, and the generalized anxious subscale was reduced to "worrying" items. However, when a six-factor solution was adopted, the issue of the lack of stability of the generalized anxious temperament was apparently solved. The first four affective temperament – cyclothymic, irritable, hyperthymic, and depressive – were delineated as predicted by the theory, although the last one less perfectly than the other three. The original generalized anxious temperament was split into two sharply delimited components, a "worrying" subscale and an abridged anxious subscale, which included physical symptoms of anxiety and concerns with the well-being of relatives.

The multidimensionality of the anxious temperament had been argued for by [Hantouche and Akiskal \(2005\)](#), who suggested that it may comprise several putative subtypes, including "worrying". Our findings are also consistent with the tripartite model of anxiety and depression proposed by [Clark and Watson \(1991\)](#), who explained both the overlapping and the distinct features of anxiety and depression by positing the existence of three independent factors, autonomic arousal, anhedonia and a "general distress factor". According to this model, autonomic arousal, manifested by symptoms like dizziness, shortness of breath, racing heart and shaky hands, is the defining feature of anxiety, depression would be characterized by anhedonia and a "general distress factor", which is shared by both anxiety and depression, would account for their common symptoms.

Based on the tripartite model of anxiety and depression, we propose that the abbreviated anxious subscale, which includes physical symptoms of anxiety, represents the "true" generalized anxious temperament, while the "worrying"

Table 5

Gender differences on the six subscales of the brief TEMPS-Rio.

Brief TEMPS-Rio subscale	U	Z	P
Cyclothymic temperament	121,018.5	−1.73	ns
Irritable temperament	124,073.0	−1.11	ns
Hyperthymic temperament	124,997.0	−0.92	ns
Depressive temperament	121,278.5	−1.78	ns
Worrying temperament	116,032.5	−2.75	<0.01
Anxious temperament	94,271.5	−7.13	<0.001

subscale corresponds to the “general distress factor”. Under this perspective, our empirical work with the brief Brazilian Portuguese (Rio de Janeiro) version of TEMPS-A would have confirmed the existence of five factors corresponding neatly to Akiskal's affective temperaments plus one corresponding to a “general distress factor”. Further studies, however, will be needed to define the role to be played by the latter in the assessment of temperamental variation.

The present study has several limitations that need to be addressed. It is based on a non-clinical sample that does not reflect accurately the characteristics of the Brazilian population. The relative uniformity of the sample in terms of age and education precluded a more in-depth analysis of the influence of these highly relevant factors. Further, we did not assess convergent, divergent or test–retest validity. Nevertheless, we believe that it will not only provide

Brazilian researchers and clinicians with a psychometrically sound instrument but will also represent another significant step toward the creation of a worldwide research network dedicated to the investigation of affective temperaments.

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The funding sources had no role in the design, execution and interpretation of this study.

Conflict of interest

The authors report no conflicts of interest.

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Appendix A. The brief TEMPS-Rio de Janeiro

Assinale todas as alternativas que se aplicam a você durante a maior parte da sua vida.

1. Sou uma pessoa triste, infeliz.	<input type="checkbox"/> Verdadeiro	<input type="checkbox"/> Falso
2. As pessoas dizem que não consigo ver o lado mais positivo das coisas.	<input type="checkbox"/> Verdadeiro	<input type="checkbox"/> Falso
3. Tenho sofrido muito na vida.	<input type="checkbox"/> Verdadeiro	<input type="checkbox"/> Falso
4. Acho que as coisas sempre acabam do pior modo.	<input type="checkbox"/> Verdadeiro	<input type="checkbox"/> Falso
5. Que eu me lembre, sempre me senti um fracasso.	<input type="checkbox"/> Verdadeiro	<input type="checkbox"/> Falso
6. Dizem que muitas vezes fico pessimista com as coisas e esqueço os momentos felizes do passado.	<input type="checkbox"/> Verdadeiro	<input type="checkbox"/> Falso
7. Sou, por natureza, uma pessoa insatisfeita.	<input type="checkbox"/> Verdadeiro	<input type="checkbox"/> Falso
8. Sou impulsionado (a) por uma agitação desagradável que não consigo entender.	<input type="checkbox"/> Verdadeiro	<input type="checkbox"/> Falso
9. Tenho mudanças bruscas no humor e no nível de energia.	<input type="checkbox"/> Verdadeiro	<input type="checkbox"/> Falso
10. Meu humor e meu nível de energia ora estão altos, ora estão baixos; raramente estão no meio.	<input type="checkbox"/> Verdadeiro	<input type="checkbox"/> Falso
11. Minha capacidade de pensar varia bastante, de muito precisa a pobre, sem motivo aparente.	<input type="checkbox"/> Verdadeiro	<input type="checkbox"/> Falso
12. Muitas vezes, começo coisas, mas perco o interesse nelas antes de acabá-las.	<input type="checkbox"/> Verdadeiro	<input type="checkbox"/> Falso
13. Eu oscilo constantemente entre me sentir energizado (a) e quase parando, lento (a).	<input type="checkbox"/> Verdadeiro	<input type="checkbox"/> Falso
14. Vario muito entre me sentir superconfiante e me sentir inseguro (a) de mim mesmo (a).	<input type="checkbox"/> Verdadeiro	<input type="checkbox"/> Falso
15. O modo como vejo as coisas às vezes é vibrante e às vezes é sem graça.	<input type="checkbox"/> Verdadeiro	<input type="checkbox"/> Falso
16. Sou o tipo de pessoa que pode ficar triste e alegre ao mesmo tempo.	<input type="checkbox"/> Verdadeiro	<input type="checkbox"/> Falso
17. Frequentemente, estouro com as pessoas e depois me sinto culpado (a) por isso.	<input type="checkbox"/> Verdadeiro	<input type="checkbox"/> Falso
18. Sou uma pessoa rabugenta (irritável).	<input type="checkbox"/> Verdadeiro	<input type="checkbox"/> Falso
19. Sou muito crítico (a) em relação aos outros.	<input type="checkbox"/> Verdadeiro	<input type="checkbox"/> Falso
20. Muitas vezes eu fico tão aborrecido (a) a ponto de quebrar tudo.	<input type="checkbox"/> Verdadeiro	<input type="checkbox"/> Falso
21. Quando contrariado (a), eu posso entrar numa briga.	<input type="checkbox"/> Verdadeiro	<input type="checkbox"/> Falso
22. As pessoas me dizem que eu estouro por nada.	<input type="checkbox"/> Verdadeiro	<input type="checkbox"/> Falso
23. Quando irritado (a), eu sou áspero (a) com as pessoas.	<input type="checkbox"/> Verdadeiro	<input type="checkbox"/> Falso
24. Meu humor ferino já me causou problemas.	<input type="checkbox"/> Verdadeiro	<input type="checkbox"/> Falso
25. Sinto todas as emoções intensamente.	<input type="checkbox"/> Verdadeiro	<input type="checkbox"/> Falso
26. A vida é uma festa que aproveito ao máximo.	<input type="checkbox"/> Verdadeiro	<input type="checkbox"/> Falso
27. Tenho muita confiança em mim mesmo.	<input type="checkbox"/> Verdadeiro	<input type="checkbox"/> Falso
28. Tenho com frequência grandes idéias.	<input type="checkbox"/> Verdadeiro	<input type="checkbox"/> Falso
29. Tenho o dom de falar, convencer e inspirar os outros.	<input type="checkbox"/> Verdadeiro	<input type="checkbox"/> Falso
30. Adoro iniciar novos projetos, mesmo que arriscados.	<input type="checkbox"/> Verdadeiro	<input type="checkbox"/> Falso
31. Uma vez que me decida a fazer algo, nada me detém.	<input type="checkbox"/> Verdadeiro	<input type="checkbox"/> Falso
32. Sinto-me totalmente à vontade mesmo com pessoas que mal conheço.	<input type="checkbox"/> Verdadeiro	<input type="checkbox"/> Falso
33. Quando estou estressado (a), minhas mãos muitas vezes tremem.	<input type="checkbox"/> Verdadeiro	<input type="checkbox"/> Falso
34. Muitas vezes meu estômago fica embrulhado.	<input type="checkbox"/> Verdadeiro	<input type="checkbox"/> Falso
35. Quando estou nervoso (a), eu posso ter diarreia.	<input type="checkbox"/> Verdadeiro	<input type="checkbox"/> Falso
36. Quando estou nervoso (a), muitas vezes sinto náuseas.	<input type="checkbox"/> Verdadeiro	<input type="checkbox"/> Falso
37. Tenho frequentemente medo que alguém na minha família pegue uma doença séria.	<input type="checkbox"/> Verdadeiro	<input type="checkbox"/> Falso
38. Estou sempre na expectativa de que alguém possa me trazer más notícias sobre alguém da minha família.	<input type="checkbox"/> Verdadeiro	<input type="checkbox"/> Falso
39. Quando estou estressado (a), fico com uma sensação desconfortável no peito.	<input type="checkbox"/> Verdadeiro	<input type="checkbox"/> Falso
40. Ruídos bruscos facilmente me deixam sobressaltado (a).	<input type="checkbox"/> Verdadeiro	<input type="checkbox"/> Falso
41. Que eu me lembre, sempre fui uma pessoa preocupada.	<input type="checkbox"/> Verdadeiro	<input type="checkbox"/> Falso
42. Estou sempre preocupado (a) com uma coisa ou outra.	<input type="checkbox"/> Verdadeiro	<input type="checkbox"/> Falso
43. Estou sempre preocupado (a) com assuntos do dia-a-dia que os outros consideram sem importância.	<input type="checkbox"/> Verdadeiro	<input type="checkbox"/> Falso
44. Não consigo deixar de ficar preocupado (a).	<input type="checkbox"/> Verdadeiro	<input type="checkbox"/> Falso
45. Muitas pessoas já me disseram para não me preocupar tanto.	<input type="checkbox"/> Verdadeiro	<input type="checkbox"/> Falso

Proposed scoring system:

- Score “0” for false (“falso”) and “1” for true (“verdadero”)
- Depressive temperament score = (item 1 + item 2 + item 3 + item 4 + item 5 + item 6 + item 7 + item 8) × 12.5 (values range from 0 to 100)
- Cyclothymic temperament score = (item 9 + item 10 + item 11 + item 12 + item 13 + item 14 + item 15 + item 16) × 12.5 (values range from 0 to 100)
- Irritable temperament score: (item 17 + item 18 + item 19 + item 20 + item 21 + item 22 + item 23 + item 24) × 12.5 (values range from 0 to 100)
- Hyperthymic temperament score: (item 25 + item 26 + item 27 + item 28 + item 29 + item 30 + item 31 + item 32) × 12.5 (values range from 0 to 100)
- Anxious temperament score: (item 33 + item 34 + item 35 + item 36 + item 37 + item 38 + item 39 + item 40) × 12.5 (values range from 0 to 100)
- Worrying score: (item 41 + item 42 + item 43 + item 44 + item 45) × 20 (values range from 0 to 100)

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