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RESEARCH PAPER

## Cross-cultural adaptation of the Brazilian-Portuguese version of the Cumberland Ankle Instability Tool (CAIT)

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### Abstract

**Purpose.** To develop and psychometrically test a Brazilian-Portuguese version of the Cumberland Ankle Instability Tool (CAIT), the only questionnaire that provides a numeric measure for functional ankle instability.

**Methods.** The CAIT was translated and adapted into Brazilian-Portuguese according to the *Guidelines for the process of cross-cultural adaptation of self report measures*. The Brazilian-Portuguese version of the CAIT was tested for internal consistency, test-retest reliability, ceiling and floor effects and responsiveness in 131 participants. Participants were recruited from the general community in Brazil ( $N=101$ , community group) and from those seeking treatment for an ankle sprain from 2 clinics in Brazil ( $N=30$ , treatment group).

**Results.** The Brazilian-Portuguese version of the CAIT had high internal consistency (Cronbach  $\alpha=0.86$  for right ankles and 0.88 for left ankles), reliability (ICC = 0.95, 95% CI 0.93–0.97); and good responsiveness (ES = 0.75, 95% CI 0.49–1.00). No ceiling or floor effects were observed.

**Conclusions.** The Brazilian-Portuguese version of the CAIT is as reliable as the English version of the questionnaire, has high internal consistency and good responsiveness. It thus provides the first tool that can be used to assess functional ankle instability by clinicians and researchers working among Brazilian-Portuguese speakers.

**Keywords:** *Cumberland Ankle Instability Tool (CAIT), Brazilian-Portuguese version of CAIT, ankle instability*

### Introduction

Self-report questionnaires are an important part of both clinical practice and research because they can combine efficiency with good reliability and low cost. Many self-report questionnaires, for example, for the assessment of lumbar spine disability, cervical spine function, stress and quality of life questionnaires, have been shown to be reliable and valid tools [1–5] but until recently no questionnaire for ankle instability had been developed. There was a need for assessment of ankle instability because it is one of the common enduring consequences of ankle sprain [6,7].

The worldwide incidence of ankle sprain is unknown, however, in the USA, it is estimated at between 23,000 and 27,000 sprains per day [8].

Because of the similarities in culture and sports activities in western countries, the proportion of ankle sprains are likely to be similar in other western countries. It has also been reported that between 5% and 16% of persons who suffer an ankle sprain are unable to return to the sport in which the sprain occurred and 5% are unable to return to sports at all [8,9]. The high incidence of ankle sprains, along with its consequences, are indicators of how this problem can have a serious impact in the community.

Recently, two questionnaires for assessment of one of the consequences of ankle sprain, that is functional ankle instability, were developed: the Ankle Instability Instrument [10] and the Cumberland Ankle Instability Tool (CAIT, see Appendix 1) [11]. Both questionnaires have been reported as reliable [10,11]

but the Ankle Instability Instrument was not developed to classify severity of instability whereas the CAIT provides, for the first time, a numeric value that measures the severity of instability [11].

The CAIT was developed in English thereby limiting its applicability to English speaking populations, but there are a large number of populations that do not speak English and are consequently unable to use the English CAIT. To address this problem, researchers from those populations could either develop self-report questionnaires in their own language, or translate and adapt the existing English CAIT into other languages and cultures. Cross-cultural adaptation of existing self-report questionnaires would enable future comparisons and interactions between different populations, permitting better exchange of knowledge between them, but the cross-cultural translation and adaptation should be performed in a systematic and scientific fashion, to ensure comparable versions [12].

Portuguese is a widely-spoken language, being the primary language in various countries in Europe, Africa, Asia and South America; it is the language spoken in Brazil, a country with a population of more than 180 million. Some self-report measures have been translated and adapted into Brazilian-Portuguese [13–16] but none have addressed functional ankle instability. Therefore the aims of this study were to develop a Brazilian-Portuguese version of the CAIT and to test the psychometric properties of the new version.

## Methods

### *The Cumberland Ankle Instability Tool*

The English CAIT is a 9-item questionnaire designed to evaluate severity of functional ankle instability. The questionnaire is structured so that the feeling of instability is reported for different types of activities such as running, walking, hopping, and descending stairs. The nine items generate a total score from 0 to 30 for each foot, in which 0 is the worst possible score, meaning severe instability, and 30 is the best possible score, meaning normal stability. The English CAIT is a reliable ( $ICC_{2,1}$  0.96) instrument that can discriminate stable from unstable ankles and measure the severity of functional ankle instability [11].

### *The adaptation procedures*

Translation of the English CAIT into Brazilian-Portuguese was performed according to the *Guidelines for the process of cross-cultural adaptation of self-report measures* [12]. Two bilingual translators fluent

in Brazilian-Portuguese and English performed the forward translation of the English CAIT into Brazilian-Portuguese. One translator was a physiotherapist and the other was a professional translator, accredited by the National Accreditation Authority for Translators and Interpreters in Australia. The translation was performed independently by each translator. A consensus meeting between the two translators was then held in which the independently developed versions were compared. Differences in versions were discussed and a single consensus version was developed. All versions were filed and saved for future reference.

Back-translation from Brazilian-Portuguese into English was performed by two other professional bilingual translators who were blinded to the original English CAIT. The back-translation was performed independently by each translator. A consensus meeting between the two back-translators was held in which the independently developed versions were compared. Differences in versions were discussed and a single consensus version was developed. All the versions were filed and saved for future reference.

Finally, the investigators compared the individually back-translated and final back-translated versions of the Brazilian-Portuguese version of the CAIT to the English CAIT with the aim of preserving the meaning of items. It was identified that in Brazilian-Portuguese there were no perfect terms for 'hopping', 'sharp turn' or 'roll over' for the context of the questionnaire. The term 'hopping' was translated as 'pular numa só perna' which, when literally translated into English, means 'jumping on one leg'. The term 'sharp turn' was translated as 'virar bruscamente' which, when literally translated into English, means 'to turn suddenly'. The term 'roll over' was translated as 'torcer' which, when literally translated back into English, means 'to sprain' (Appendix 2). The psychometric properties of the final Brazilian-Portuguese version of the CAIT were then assessed.

### *Participants*

The final Brazilian-Portuguese version of the CAIT was administered to a total of 131 native Brazilian-Portuguese speakers. One hundred and one participants were recruited from the general community in Brazil, and 30 participants were recruited from two physiotherapy clinics in Brazil. The latter 30 participants were receiving treatment for ankle sprain. We used a minimum number of 100 subjects to ensure stability of the variance-covariance matrix for the statistical analysis, as suggested by Terwee and colleagues [17].

The 101 community participants (community group) comprised students and employees from a

university, clients attending a local gym, and patients attending one of two physiotherapy practices in Brazil but who were not seeking treatment for any lower limb injury. Participants were required to be  $\geq 18$  years, without a recent lower limb injury or an episode of ankle sprain within the previous 2 months. The community group was highly educated (85.1% had university degree) and 55% were female. Forty six participants reported having had at least one ankle sprain more than 2 months prior to completing the questionnaire (Table I). Participants from the community group completed the Brazilian-Portuguese version of the CAIT on two occasions, at least one week apart.

The 30 participants with ankle sprain (treatment group) were recruited by invitation from staff at two Brazilian physiotherapy practices. Participants were required to be  $\geq 18$  years and currently seeking treatment for an acute ankle sprain. The treatment group was well educated (57% had university degree) and 40% were female (Table I). One of the investigators gave a brief explanation of the items and answered possible questions prior to participants' completion of the Brazilian-Portuguese version of the CAIT. Participants from the treatment group completed the Brazilian-Portuguese version of the CAIT on 2 occasions, separated by an interval of 3 to 4 weeks.

The study was approved by the University of Sydney's human ethics committee and written informed consent was gained from all participants prior to commencement of data collection.

#### Analysis of the psychometric properties

Four psychometric properties of the Brazilian-Portuguese version of the CAIT were investigated; internal consistency, test-retest reliability, potential ceiling and floor effects, and responsiveness of the

questionnaire. Because the CAIT assesses both ankles independently with the one instrument, the psychometric properties for each ankle were analysed separately for internal consistency and test-retest reliability thereby avoiding the pooling of dependent variables and consequent increase in the chance of a type I error [18]. For internal consistency we used the scores from the first test occasion of the community group and treatment group. To determine whether a ceiling or floor effect occurred in the Brazilian-Portuguese version of the CAIT, the scores were extracted from participants in the community group who reported having a history of at least one ankle sprain and pooled their data with those from the treatment group. We used the scores from the first test occasion, referent to the ankle that had a history of ankle sprain; when participants reported bilateral ankle sprains, one ankle was randomly selected for the analysis. For the responsiveness analyses we used data from the treated ankle of participants in the treatment group.

*Internal consistency* of the Brazilian-Portuguese version of the CAIT was determined using Cronbach  $\alpha$ . An instrument is considered internally consistent when the items are at least moderately correlated with each other and each item is correlated with the total score ( $\alpha = 0.70$  to  $0.95$ ) [17,19]. For this analysis we used CAIT scores obtained on the first test occasion from all participants in both the community and treatment groups ( $N = 131$ ; Table II).

*Test-retest reliability* of the Brazilian-Portuguese version of the CAIT was determined by the Intraclass Correlation Coefficient ( $ICC_{2,1}$ ). Reliability is considered poor when the  $ICC_{2,1}$  is  $< 0.40$ , moderate between  $0.40$  and  $0.75$ , substantial between  $0.75$  and  $0.90$ , and excellent when  $> 0.90$  [17]. For this analysis participants from the community group completed the questionnaire on 2 occasions separated by one week. It was expected that their CAIT scores would undergo little or no change within a week ( $n = 101$ , Table II).

Table I. Characteristics of participants.

| Characteristics                                    | Community group<br>( $n = 101$ ) | Treatment group<br>( $n = 30$ ) | Total<br>( $n = 131$ ) |
|----------------------------------------------------|----------------------------------|---------------------------------|------------------------|
| Age (mean $\pm$ SD)                                | $28.4 \pm 7.5$                   | $25.8 \pm 9.6$                  | $28.1 \pm 8.5$         |
| Female %                                           | 55%                              | 40%                             | 52.3%                  |
| Highest education level (% with University degree) | 85%                              | 57%                             | 79.4%                  |
| CAIT score <sup>§</sup> – right ankle              | $24.7 \pm 5.9$                   |                                 |                        |
| CAIT score <sup>§</sup> – left ankle               | $25.0 \pm 5.9$                   |                                 |                        |
| CAIT score <sup>§</sup> – treated ankle            |                                  | $13.8 \pm 7.3$                  |                        |

<sup>§</sup>First test occasion.

Table II. Number of participants included in each psychometric analysis.

| Psychometric property    | Community group<br>( $n = 101$ ) | Treatment group<br>( $n = 30$ ) | Total number of participants for each analysis |
|--------------------------|----------------------------------|---------------------------------|------------------------------------------------|
| Internal consistency     | 101                              | 30                              | 131                                            |
| Test-retest reliability  | 101                              | 0                               | 101                                            |
| Ceiling and floor effect | 46*                              | 30                              | 76                                             |
| Responsiveness           | 0                                | 30                              | 30                                             |

\*Participants with history of ankle sprain.

*Potential ceiling and floor effects* for the Brazilian-Portuguese version of the CAIT were determined by calculating the percentage of patients that had the minimum and maximum possible scores. An intervention effect can be undetected by an instrument that has a ceiling or floor effect and thus potentially affects the instrument's validity, reliability and responsiveness. Ceiling and floor effects are not related to individual items; they are considered to be present if more than 15% of participants' final score falls on the lowest or highest possible total score [17]. For the Brazilian-Portuguese version of the CAIT a ceiling effect was expected if the questionnaire was completed by people with no history of ankle sprain or instability. Thus, to avoid a type II error, we investigated potential ceiling and floor effects with the CAIT scores of the first test occasion from a pool of participants from both groups who reported a history of ankle sprain. We used the score from the ankle with a history of sprain. When participants reported a history of bilateral ankle sprain, one ankle was randomly selected ( $n=76$ , Table II).

*Responsiveness* has been defined as the ability of a questionnaire to detect clinically important changes over time, even if these changes are small [20]. Responsiveness of the Brazilian-Portuguese version of the CAIT was determined by calculating the effect size and 95% confidence interval (CI) of change in the CAIT scores [21]. In addition, the mean and 84% CI for the two sets of CAIT scores were calculated. Non-overlapping 84% CI are equivalent to a Z test of means at the 0.05 level [17]; the conventional 95% CI was considered inappropriate as it is 41% more stringent than a Z test [17]. For this analysis, participants from the treatment group completed the questionnaire on 2 occasions separated by an interval of 3 to 4 weeks. We used the scores from the ankles being treated ( $n=30$ , Table II).

## Results

A total of 131 participants answered the Brazilian-Portuguese version of the CAIT on 2 different occasions. Table I shows the characteristics of the study participants. The data from the first test occasion generated a mean CAIT score for the community group of 24.7 (SD 5.9), and 25.0 (5.9) for right and left ankles respectively, and a mean CAIT score of 13.8 (7.3) for the injured ankle of the treatment group (Table I).

### Internal consistency

The CAIT scores from the first test occasion of the total sample ( $N=131$ , Table II) generated a

Cronbach  $\alpha$  of 0.86 for the right ankles and 0.88 for the left ankles. We also systematically excluded each item of the Brazilian-Portuguese version of the CAIT, one at a time, to determine the influence of each item on the magnitude of the Cronbach  $\alpha$ . We found that no individual item contributed more than any other item to the construct of the instrument. Removal of any item ('alpha if deleted' analysis) resulted in a Cronbach  $\alpha$  within the range of 0.83–0.86 for the right ankle, and between 0.86–0.89 for the left ankle.

### Test-retest reliability

To determine test-retest reliability we used the CAIT scores of the community group ( $n=101$ , Table II). The Brazilian-Portuguese version of the CAIT had excellent reliability [17] for both the left and right ankles (ICC<sub>2,1</sub> 0.95; 95% CI 0.93–0.97). For right ankles, the mean scores for the first and second test occasions were 24.7 (SD 5.9) and 25.3 (5.1) respectively; a mean difference of 0.6 (3.7) in the CAIT scale. For the left ankle, the mean score for the first and second test occasions were 25.0 (5.9) and 25.7 (5.3) respectively; a mean difference of 0.7 (2.2) in the CAIT scale.

### Ceiling and floor effects

The CAIT scores from the first test occasion of participants from both community and treatment groups ( $n=76$ , Table II) showed that there was no floor or ceiling effect for the Brazilian-Portuguese version of the CAIT. No participant scored the lowest possible score and only 7.9% scored the maximum possible score.

### Responsiveness

The CAIT scores from the treatment group ( $n=30$ , Table II) generated an effect size of 0.75 (95% CI: 0.49–1.00) for the Brazilian-Portuguese version of the CAIT. The mean CAIT score for the first test occasion was 13.8 (84% CI: 11.9–15.7) and after 3 to 4 weeks of treatment the mean score was 19.3 (84% CI: 17.7–20.8; Figure 1). This represents a significant improvement in the CAIT of 5.5 (SD 5.0).

## Discussion

We translated the English CAIT into Brazilian-Portuguese because until now, there has been no tool available to assess functional ankle instability in Brazilian-Portuguese populations. Because functional ankle instability is a common consequence of

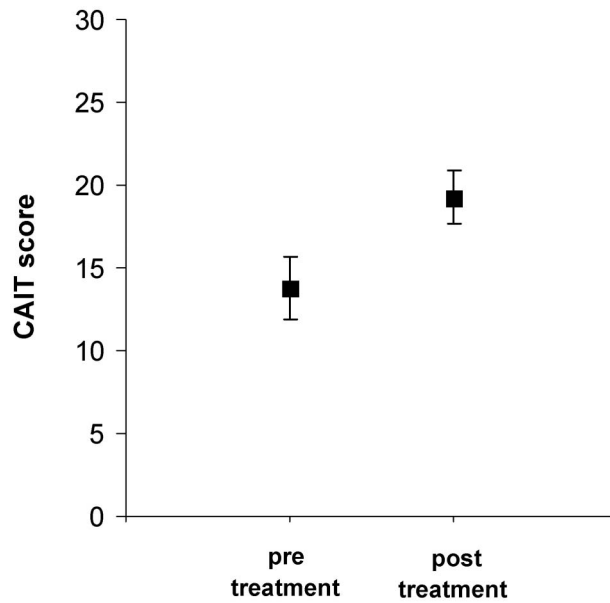


Figure 1. The mean CAIT score for the instability group prior to treatment (pre-treatment) and 3 to 4 weeks later (post-treatment). The bars represent the 84% CI. The non-overlapping 84% CI are equivalent to a Z test of means at the 0.05 level.

ankle sprains, it is important to be able to assess this potential deficit as accurately as possible.

Our aims were to translate the English CAIT into Brazilian-Portuguese and to test the psychometric properties of this Brazilian-Portuguese version of the CAIT. The importance of a systematic and scientific process of translation of such tools was especially evident to us at the end of the back translation process, when three of the terms used in the English CAIT could not be literally translated. The psychometric properties of the Brazilian-Portuguese version of the CAIT demonstrated that the terms used in the Brazilian-Portuguese version of the CAIT were appropriate in terms of the questionnaire's internal consistency, reliability and responsiveness. Thus, the Brazilian-Portuguese version of the CAIT appears to have retained the intention of the English terms.

The Brazilian-Portuguese version of the CAIT retained the high internal consistency evident in the English CAIT. The results for internal consistency were in the benchmark range of 0.70–0.95 suggesting a very good Cronbach  $\alpha$  [17]. The English CAIT was analysed for consistency using Rasch analysis and the authors reported a Cronbach  $\alpha$  equivalent of 0.83 [11], very similar to that reported here ( $\alpha = 0.86$  for right ankle,  $\alpha = 0.88$  for left ankle).

Test-retest reliability of the Brazilian-Portuguese version of CAIT ( $ICC_{2,1}$  0.95) was also similar to that of the English CAIT. This demonstrates that both versions are highly reliable [17]. Thus, this is

the first tool available in the Brazilian-Portuguese language that can confidently be used to detect changes in functional ankle instability.

The Brazilian-Portuguese version of the CAIT had good responsiveness (effect size 0.75). There is no consensus concerning the effect size necessary to reflect good responsiveness for an instrument, although Husted et al. [22] reported that an effect size of 0.8 is considered to be large. Therefore the effect size of 0.75 gives us confidence that the responsiveness of the tool is, at least, very good, especially given that the 95% CI of 0.49–1.00 includes effect sizes that are at least moderate. Future analysis of responsiveness in a larger sample could perhaps decrease the 95% CI providing more clarity concerning the effect size of the Brazilian-Portuguese version of the CAIT. These findings complement the findings of the test-retest reliability, showing that the Brazilian-Portuguese version of the CAIT can be used by researchers and clinicians to detect changes in the status of functional ankle instability both after treatment, and during the clinical course of the injury. The good psychometric properties of the Brazilian-Portuguese version of the CAIT also open possibilities to perform intercultural comparisons between studies performed in Brazil and those performed in English-speaking countries.

In conclusion, the Brazilian-Portuguese version of the CAIT is a questionnaire that can be easily applied, can reliably detect changes in the ankle instability status of patients and gives clinicians and researchers immediate feedback related to ankle instability status of patients.

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## Appendix 1. Cumberland Ankle Instability Tool (CAIT).

|                                                                                              | LEFT                     | RIGHT                    | Score |
|----------------------------------------------------------------------------------------------|--------------------------|--------------------------|-------|
| Please tick the statement that BEST describes your ankles.                                   |                          |                          |       |
| 1. I have pain in my ankle                                                                   |                          |                          |       |
| Never                                                                                        | <input type="checkbox"/> | <input type="checkbox"/> | 5     |
| During sport                                                                                 | <input type="checkbox"/> | <input type="checkbox"/> | 4     |
| Running on uneven surfaces                                                                   | <input type="checkbox"/> | <input type="checkbox"/> | 3     |
| Running on level surfaces                                                                    | <input type="checkbox"/> | <input type="checkbox"/> | 2     |
| Walking on uneven surfaces                                                                   | <input type="checkbox"/> | <input type="checkbox"/> | 1     |
| Walking on level surfaces                                                                    | <input type="checkbox"/> | <input type="checkbox"/> | 0     |
| 2. My ankle feels UNSTABLE                                                                   |                          |                          |       |
| Never                                                                                        | <input type="checkbox"/> | <input type="checkbox"/> | 4     |
| Sometimes during sport<br>(not every time)                                                   | <input type="checkbox"/> | <input type="checkbox"/> | 3     |
| Frequently during sport<br>(every time)                                                      | <input type="checkbox"/> | <input type="checkbox"/> | 2     |
| Sometimes during daily activity                                                              | <input type="checkbox"/> | <input type="checkbox"/> | 1     |
| Frequently during daily activity                                                             | <input type="checkbox"/> | <input type="checkbox"/> | 0     |
| 3. When I make SHARP turns my<br>ankle feels UNSTABLE                                        |                          |                          |       |
| Never                                                                                        | <input type="checkbox"/> | <input type="checkbox"/> | 3     |
| Sometimes when running                                                                       | <input type="checkbox"/> | <input type="checkbox"/> | 2     |
| Often when running                                                                           | <input type="checkbox"/> | <input type="checkbox"/> | 1     |
| When walking                                                                                 | <input type="checkbox"/> | <input type="checkbox"/> | 0     |
| 4. When going down the stairs<br>my ankle feels UNSTABLE                                     |                          |                          |       |
| Never                                                                                        | <input type="checkbox"/> | <input type="checkbox"/> | 3     |
| If I go fast                                                                                 | <input type="checkbox"/> | <input type="checkbox"/> | 2     |
| Occasionally                                                                                 | <input type="checkbox"/> | <input type="checkbox"/> | 1     |
| Always                                                                                       | <input type="checkbox"/> | <input type="checkbox"/> | 0     |
| 5. My ankle feels UNSTABLE<br>when standing on ONE leg                                       |                          |                          |       |
| Never                                                                                        | <input type="checkbox"/> | <input type="checkbox"/> | 2     |
| On the ball of my foot                                                                       | <input type="checkbox"/> | <input type="checkbox"/> | 1     |
| With my foot flat                                                                            | <input type="checkbox"/> | <input type="checkbox"/> | 0     |
| 6. My ankle feels UNSTABLE when                                                              |                          |                          |       |
| Never                                                                                        | <input type="checkbox"/> | <input type="checkbox"/> | 3     |
| I hop from side to side                                                                      | <input type="checkbox"/> | <input type="checkbox"/> | 2     |
| I hop on the spot                                                                            | <input type="checkbox"/> | <input type="checkbox"/> | 1     |
| When I jump                                                                                  | <input type="checkbox"/> | <input type="checkbox"/> | 0     |
| 7. My ankle feels UNSTABLE when                                                              |                          |                          |       |
| Never                                                                                        | <input type="checkbox"/> | <input type="checkbox"/> | 4     |
| I run on uneven surfaces                                                                     | <input type="checkbox"/> | <input type="checkbox"/> | 3     |
| I jog on uneven surfaces                                                                     | <input type="checkbox"/> | <input type="checkbox"/> | 2     |
| I walk on uneven surfaces                                                                    | <input type="checkbox"/> | <input type="checkbox"/> | 1     |
| I walk on a flat surface                                                                     | <input type="checkbox"/> | <input type="checkbox"/> | 0     |
| 8. TYPICALLY when I start to roll over<br>(or 'twist') on my ankle I can stop it             |                          |                          |       |
| Immediately                                                                                  | <input type="checkbox"/> | <input type="checkbox"/> | 3     |
| Often                                                                                        | <input type="checkbox"/> | <input type="checkbox"/> | 2     |
| Sometimes                                                                                    | <input type="checkbox"/> | <input type="checkbox"/> | 1     |
| Never                                                                                        | <input type="checkbox"/> | <input type="checkbox"/> | 0     |
| I have never rolled<br>over on my ankle                                                      | <input type="checkbox"/> | <input type="checkbox"/> | 3     |
| 9. Following a TYPICAL incident<br>of my ankle rolling over, my<br>ankle returns to 'normal' |                          |                          |       |
| Almost immediately                                                                           | <input type="checkbox"/> | <input type="checkbox"/> | 3     |
| Less than one day                                                                            | <input type="checkbox"/> | <input type="checkbox"/> | 2     |
| 1–2 days                                                                                     | <input type="checkbox"/> | <input type="checkbox"/> | 1     |
| More than 2 days                                                                             | <input type="checkbox"/> | <input type="checkbox"/> | 0     |
| I have never rolled<br>over on my ankle                                                      | <input type="checkbox"/> | <input type="checkbox"/> | 3     |

Note: The scoring scale is on the right. The scoring system is not visible on the subject's version.

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Appendix 2. Brazilian Portuguese version of the CAIT.

|                                                                             | ESQ                      | DIR                      | Pontuação |
|-----------------------------------------------------------------------------|--------------------------|--------------------------|-----------|
| Assinale a alternativa que descreve seus tornozelos da forma mais adequada. |                          |                          |           |
| 1. Sinto dor no tornozelo                                                   |                          |                          |           |
| Nunca                                                                       | <input type="checkbox"/> | <input type="checkbox"/> | 5         |
| Quando pratico esportes                                                     | <input type="checkbox"/> | <input type="checkbox"/> | 4         |
| Quando corro em superfícies irregulares                                     | <input type="checkbox"/> | <input type="checkbox"/> | 3         |
| Quando corro em superfícies planas                                          | <input type="checkbox"/> | <input type="checkbox"/> | 2         |
| Quando ando em superfícies irregulares                                      | <input type="checkbox"/> | <input type="checkbox"/> | 1         |
| Quando ando em superfícies planas                                           | <input type="checkbox"/> | <input type="checkbox"/> | 0         |
| 2. Sinto INSTABILIDADE no tornozelo                                         |                          |                          |           |
| Nunca                                                                       | <input type="checkbox"/> | <input type="checkbox"/> | 4         |
| Às vezes quando pratico esportes (nem sempre)                               | <input type="checkbox"/> | <input type="checkbox"/> | 3         |
| Freqüentemente quando pratico esportes                                      | <input type="checkbox"/> | <input type="checkbox"/> | 2         |
| Às vezes durante atividades diárias                                         | <input type="checkbox"/> | <input type="checkbox"/> | 1         |
| Freqüentemente durante atividades diárias                                   | <input type="checkbox"/> | <input type="checkbox"/> | 0         |
| 3. Quando me viro BRUSCAMENTE, sinto INSTABILIDADE no tornozelo             |                          |                          |           |
| Nunca                                                                       | <input type="checkbox"/> | <input type="checkbox"/> | 3         |
| Às vezes quando corro                                                       | <input type="checkbox"/> | <input type="checkbox"/> | 2         |
| Freqüentemente quando corro                                                 | <input type="checkbox"/> | <input type="checkbox"/> | 1         |
| Quando ando                                                                 | <input type="checkbox"/> | <input type="checkbox"/> | 0         |
| 4. Quando desço escadas, sinto INSTABILIDADE no tornozelo                   |                          |                          |           |
| Nunca                                                                       | <input type="checkbox"/> | <input type="checkbox"/> | 3         |
| Se for rapidamente                                                          | <input type="checkbox"/> | <input type="checkbox"/> | 2         |
| Ocasionalmente                                                              | <input type="checkbox"/> | <input type="checkbox"/> | 1         |
| Sempre                                                                      | <input type="checkbox"/> | <input type="checkbox"/> | 0         |

(continued)

Appendix 2. (Continued).

|                                                                  | ESQ                      | DIR                      | Pontuação |
|------------------------------------------------------------------|--------------------------|--------------------------|-----------|
| 5. Sinto INSTABILIDADE no tornozelo quando fico num só pé        |                          |                          |           |
| Nunca                                                            | <input type="checkbox"/> | <input type="checkbox"/> | 2         |
| Na ponta do pé                                                   | <input type="checkbox"/> | <input type="checkbox"/> | 1         |
| Com o pé inteiro no chão                                         | <input type="checkbox"/> | <input type="checkbox"/> | 0         |
| 6. Sinto INSTABILIDADE no tornozelo quando                       |                          |                          |           |
| Nunca                                                            | <input type="checkbox"/> | <input type="checkbox"/> | 3         |
| Pulo de um lado para o outro numa só perna                       | <input type="checkbox"/> | <input type="checkbox"/> | 2         |
| Quando pulo no mesmo lugar numa só perna                         | <input type="checkbox"/> | <input type="checkbox"/> | 1         |
| Quando pulo com as duas pernas                                   | <input type="checkbox"/> | <input type="checkbox"/> | 0         |
| 7. Sinto INSTABILIDADE no tornozelo quando                       |                          |                          |           |
| Nunca                                                            | <input type="checkbox"/> | <input type="checkbox"/> | 4         |
| Corro em superfícies irregulares                                 | <input type="checkbox"/> | <input type="checkbox"/> | 3         |
| Corro lentamente em superfícies irregulares                      | <input type="checkbox"/> | <input type="checkbox"/> | 2         |
| Ando em superfícies irregulares                                  | <input type="checkbox"/> | <input type="checkbox"/> | 1         |
| Ando em uma superfície plana                                     | <input type="checkbox"/> | <input type="checkbox"/> | 0         |
| 8. TÍPICAMENTE quando começo a torcer o tornozelo, consigo parar |                          |                          |           |
| Imediatamente                                                    | <input type="checkbox"/> | <input type="checkbox"/> | 3         |
| Freqüentemente                                                   | <input type="checkbox"/> | <input type="checkbox"/> | 2         |
| Às vezes                                                         | <input type="checkbox"/> | <input type="checkbox"/> | 1         |
| Nunca                                                            | <input type="checkbox"/> | <input type="checkbox"/> | 0         |
| Nunca torci o tornozelo                                          | <input type="checkbox"/> | <input type="checkbox"/> | 3         |
| 9. Após um entorse TÍPICO, meu tornozelo volta ao normal         |                          |                          |           |
| Quase imediatamente                                              | <input type="checkbox"/> | <input type="checkbox"/> | 3         |
| Em menos de um dia                                               | <input type="checkbox"/> | <input type="checkbox"/> | 2         |
| Em 1 a 2 dias                                                    | <input type="checkbox"/> | <input type="checkbox"/> | 1         |
| Em mais de 2 dias                                                | <input type="checkbox"/> | <input type="checkbox"/> | 0         |
| Nunca torci o tornozelo                                          | <input type="checkbox"/> | <input type="checkbox"/> | 3         |

Note: The scoring scale is on the right. The scoring system is not visible on the subject's version.