

**Brief communication**  
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**Brazilian Portuguese adaptation of Dyslexia Early  
 Screening Test – Second edition: preliminary findings**

***Adaptação do Dyslexia Early Screening Test – Second  
 Edition para o Português Brasileiro: resultados preliminares***

**ABSTRACT**

The assessment of language skills in early childhood can provide important information about the future of literacy and academic performances. Children with reading difficulties should be identified early in their education, before they suffer from shortcomings and experience failures and feel discouraged at school. Considering the importance of early identification of language disorders and the shortage of standardized instruments for the Brazilian scenario, the overall objective of this study was to translate and adapt the Dyslexia Early Screening Test – Second Edition (DEST-2) to, subsequently, verify its applicability and efficacy in preschoolers who had Brazilian Portuguese as their native language. The study was composed of 20 children of both genders, regularly enrolled in a public school in the metropolitan region of São Paulo, none had any complaints related to learning and no indicators of sensory, neurological, cognitive, or behavioral disorders. It was observed that there was no need for significant changes to the original structure of the DEST-2 or in their administration instructions format. The performance of the children in the translated and in the national exams that were used as a benchmark was compatible, suggesting that the adjustments made met the equivalences needed to utilize this instrument with Brazilian children. A randomized study that will complement the preliminarily data obtained is in progress. Taking into consideration the linguistic and cultural diversity of Brazil, it is imperative that the translated version of the DEST-2 can be applied on a large scale and in several states of the country, in order to allow the use of this instrument as a language assessment tool in Brazil.

**RESUMO**

A avaliação das habilidades linguísticas na primeira infância pode fornecer informações importantes sobre o futuro processo de alfabetização e desempenho acadêmico. Crianças com dificuldade de leitura devem ser identificadas no início da escolarização, antes de apresentarem falhas e vivenciarem experiências de fracasso e desmotivação na escola. Considerando a importância da detecção precoce dos distúrbios de linguagem e a falta de instrumentos padronizados para a realidade brasileira, o objetivo geral deste estudo foi traduzir e adaptar o *Dyslexia Early Screening Test* (DEST-2) para, posteriormente, verificar sua aplicabilidade e eficácia em pré-escolares falantes nativos do Português Brasileiro. Participaram desta pesquisa 20 crianças de ambos os gêneros, regularmente matriculadas em uma escola municipal da região metropolitana de São Paulo, todas sem queixas relacionadas à aprendizagem e sem indicadores de alterações sensoriais, neurológicas, cognitivas ou comportamentais. Constatou-se que não houve necessidade de modificações significativas na estrutura original do DEST-2 ou no formato das instruções de aplicação. O desempenho das crianças nas provas traduzidas e nas provas nacionais utilizadas como parâmetro de comparação foi compatível, sugerindo que as adaptações realizadas atenderam às equivalências necessárias para a utilização do instrumento em crianças brasileiras. Um estudo randomizado que complementar os dados preliminarmente obtidos está em andamento. Considerando a diversidade linguística e cultural do Brasil, é imprescindível que a versão traduzida do DEST-2 possa ser aplicada em larga escala e em diversos estados do país, a fim de possibilitar o uso desse instrumento como ferramenta de avaliação de linguagem no Brasil.

Study carried out at the Speech – Language Pathology and Audiology Investigation Laboratory in Language Development and Disorders at the Physical Therapy and Speech – Language Pathology and Audiology Department of the School of Medicine, Universidade de São Paulo – USP – São Paulo (SP), Brazil.

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**Conflict of interests:** nothing to declare.

## INTRODUCTION

Difficulties in the reading and writing acquisition processes cause long-term effects. In Brazil, it is estimated that around 10% students present reading and writing disorders, dyslexia being one of the disorders that has the biggest impact in classrooms<sup>(1)</sup>.

Various theories discuss the differences between dyslexia and learning disorders. In general, dyslexia is a disorder, specifically of neurological origin, characterized by a deficit in the phonological component of language. Learning disorders refer to a group of significant heterogeneous alterations in the process of acquisition and in the abilities to use language, reason, and mathematics<sup>(2)</sup>.

Early intervention into language development disorders can reduce the difficulties in reading and their social and emotional consequences. Ideally, children at risk should be identified in the initial stages of education, before they bear shortcomings, experience failures and feel discouraged at school<sup>(3-5)</sup>.

The use of standardized tools can be an efficient strategy for detecting language disorders. These tools are of low cost and prompt administration, and present good sensitivity and specificity; however, a limited availability of these devices for the Brazilian scenario is significant<sup>(6,7)</sup>.

The Dyslexia Early Screening Test – Second Edition (DEST-2)<sup>(8)</sup> is composed of 12 tasks (Chart 1) whose purpose are to identify the presence of reading and writing difficulties/dyslexia risks in children between the ages of 4 years and 6 months and 6 years and 5 months, before they present real learning disorders. The overall objective of this study was to translate and adapt the DEST-2<sup>(8)</sup> to, subsequently, verify its applicability and efficacy among preschoolers whose native language is Brazilian Portuguese (BP).

## METHOD

The study comprised 20 children of both genders, aged between 4 years and 6 months and 6 years and 5 months, regularly enrolled in a school in the metropolitan region of São Paulo. The inclusion criteria of the subjects were performance within the normal range in the phonology<sup>(9)</sup> and vocabulary<sup>(10)</sup> tests from the ABFW Child Language Test; good school performance; and absence of complaints related to hearing or visual disorders as well as learning, neurological, cognitive, or behavioral disorders.

The study was approved by the Ethics Committee for the Research Project Analysis Clinical Directory of the Hospital das Clínicas from the School of Medicine at the Universidade de São Paulo (Nº 014/12). The guardians of the children signed the term of free and informed consent, and the children consented their collaboration through a term of assent. The use of the test was authorized by the publisher Pearson UK (copyright owner) for research purposes.

The steps taken to conduct this study were the following: obtain authorization from the publisher; direct translation from the DEST-2<sup>(8)</sup> to BP; and adaptation and administration of the translated exams (pilot study).

**Chart 1.** Brief description of the tasks that compose the Dyslexia Early Screening Test – Second Edition

| Task                        | Description                                                                                                                                                   |
|-----------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Rapid naming                | The child should name 20 figures arranged on a card.                                                                                                          |
| Bead threading              | The child should thread wooden beads through a nylon thread of medium thickness as quickly as possible.                                                       |
| Phonological discrimination | From a list of words enunciated by the administrator, the child should discriminate the words that differ by a single phoneme.                                |
| Postural stability          | The child is asked to put on a blindfold and remain standing while the examiner lightly pushes them, taking them off of their stability axis.                 |
| Rhyme/alliteration          | In this exam, the child should identify the presence/absence of rhyme in a list of words enunciated by the administrator.                                     |
| Forwards digit span         | This exam evaluates the biggest quantity of numbers a child can memorize in a random sequence.                                                                |
| Digit naming                | The child should name nine digits presented on a card.                                                                                                        |
| Letter naming               | In this exam, the child is asked to name/identify the sound of 12 letters arranged on a card.                                                                 |
| Sound order                 | After listening to a CD containing sounds that refer to a rat and duck, the child should identify the sounds made by each animal in a certain period of time. |
| Shape copying               | The child should copy simple figures presented on a card in a certain amount of time, which varies according to age group.                                    |
| Corsi frog                  | Utilizing the exam card, the examiner should show the sequence of leaves the frog should follow and the child should reproduce these movements.               |
| Vocabulary                  | After receiving a leaf with various different semantic spaces, the child should circle the images solicited by the examiner.                                  |

The participants were initially evaluated through phonology<sup>(9)</sup> and vocabulary<sup>(10)</sup> tests from the ABFW Child Language Test, and only those who presented answers within the normal range took the translated DEST-2 test<sup>(8)</sup>.

The administration of the test took around 50 minutes and was conducted individually, in an appropriate room at the school. The results obtained were analyzed according to the criteria adopted in the original version of the test.

## RESULTS

The DEST-2<sup>(8)</sup> was translated into BP as a whole and this version was administered as a pilot study.

There was no need for a back-translation considering that the activities proposed had a playful tone and comprised letters, digits, and figures. The tasks for phonological discrimination and rhyme/alliteration, which would have demanded back-translation, had their content adapted to BP. These tasks, originally composed of monosyllables in English, were adapted to disyllables in BP due to the small number of monosyllabic words in Portuguese, which made the back-translation impossible. To guarantee the equivalence of sound quality, the tasks conducted with a CD were recorded in a professional studio. During the naming of letters and digits task, the need to substitute the form of the letters used in the original version to print writing was noted, given its predominance in the Brazilian writing system.

The original format of the test, in terms of analysis and administration instructions, was maintained. The original scoring scale was maintained so that the validation scales of the test were left unaltered.

Regarding the results obtained in the pilot study, all participants presented a performance within the standards of normality in the translated DEST-2 exams<sup>(8)</sup>, corroborating the results found in the phonology<sup>(9)</sup> and vocabulary<sup>(10)</sup> tasks that were initially administered, during which no disorders were found in the subjects of the group.

## DISCUSSION

The benefits of the early detection of language development disorders are indisputable. Nonetheless, the availability of standardized child language evaluation exams in Brazil is limited, especially regarding the identification of disorders related to the abilities considered to be prerequisites for reading and writing acquisition<sup>(11)</sup>. The screening instruments are configured as a good strategy to detect disorders and assist in monitoring the progress achieved, given its capacity to portray information objectively.

Adapting validated international instruments can be an efficient form of detecting and, consequently, providing an early intervention with children who show some risk of manifesting reading and writing disorders<sup>(11,12)</sup>. The results obtained suggest that the translated version of the DEST-2 can assist in the identification of these children before they present difficulties in their education process.

## CONCLUSION

The DEST-2 was entirely translated to BP and the translated version was administered. The original format of the test regarding scoring, analysis, and administration instructions was maintained, and the performance of the children in the translated exams and the national exams, used as benchmark, was compatible, suggesting that the adaptations made met the equivalencies necessary for the use of the instrument with Brazilian children. Considering the linguistic and cultural diversity in Brazil, it is imperative that the translated version of the DEST-2 should be used on a larger scale; for this reason, the translated exams were administered to a random sample of 100 children. The data obtained in the analysis process will be announced shortly to complement the equivalency studies. New studies are important to enable the necessary measures for the validation of this test in Brazil.

*\*TRGM was responsible for collecting and analyzing data and for writing the paper; DMBL was responsible for advising the project and reviewing the paper.*

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