



ORIGINAL ARTICLE

## Translation and cultural adaptation of the Hill-Bone Compliance to High Blood Pressure Therapy Scale to Portuguese



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### Abstract

**Introduction:** Hypertension is an extremely prevalent disease worldwide and hypertension control rates remain low. Lack of adherence contributes to poor control and to cardiovascular events. No questionnaire in Portuguese is readily available for the assessment of adherence to antihypertensive drugs. We aimed to perform a translation and cultural adaptation to Portuguese of the Hill-Bone Compliance to High Blood Pressure Therapy Scale, a validated instrument to measure adherence in hypertensive patients.

**Methods:** A formal process was employed, consisting of a forward translation by two independent translators and a back translation by a third translator. Discrepancies were resolved after each step. Hypertensive patients were involved to identify and resolve phrasing and wording difficulties and misunderstandings.

**Results:** The forward and back translation did not produce significant discrepancies. However, important issues were identified when the questionnaire was presented to patients, which led to changes in the wording of the questions and in the format of the questionnaire.

**Conclusion:** Questionnaires are important instruments to assess adherence to therapy, particularly in hypertension. A formal translation and cultural adaptation process ensures that the new version maintains the same concepts as the original. After translation, several changes were necessary to ensure that the questionnaire was understandable by elderly, low literacy patients, such as the majority of hypertensive patients. We propose a Portuguese version of the Hill-Bone Compliance Scale, which will require validation in further studies.

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**PALAVRAS-CHAVE**

Hipertensão arterial;  
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Questionários;  
Tradução e adaptação  
cultural;  
*Patient-reported  
outcomes*

## Tradução e adaptação cultural do Questionário *Hill-Bone* de Adesão à Terapêutica Antihipertensora para Português

**Resumo**

**Introdução:** A hipertensão arterial (HTA) é extremamente prevalente em todo o mundo e a proporção de doentes controlados permanece baixa. A má adesão à terapêutica dificulta o controlo da doença e contribui para a ocorrência de eventos cardiovasculares. Não existe nenhum questionário em português imediatamente disponível para avaliar a adesão a fármacos anti-hipertensores. O nosso objetivo é realizar a tradução e adaptação cultural do questionário de adesão *Hill-Bone*, um instrumento validado em doentes com HTA.

**Métodos:** Foi utilizado um processo formal, consistindo numa tradução para português por dois tradutores, seguida de uma retroversão para inglês por um terceiro tradutor. As discrepâncias foram discutidas e resolvidas após cada passo. Doentes com HTA foram envolvidos, de forma a identificar e corrigir construções de frases e escolhas de palavras que provocaram problemas de compreensão.

**Resultados:** A tradução e retroversão não produziram discrepâncias relevantes. Foram identificados problemas de compreensão importantes quando o questionário foi apresentado aos doentes, motivando alterações na elaboração das perguntas e no formato do questionário.

**Conclusão:** Os questionários são instrumentos importantes na avaliação da adesão à terapêutica, em particular na HTA. O processo formal de tradução e adaptação cultural visa garantir que a nova versão mantém os mesmos conceitos que o original. Várias alterações foram necessárias para garantir que o questionário é corretamente interpretado por indivíduos idosos e com baixa literacia, características de grande parte dos doentes hipertensos. Propomos a versão portuguesa do questionário *Hill-Bone* de adesão à terapêutica anti-hipertensora, que deverá ser validada em estudos futuros.

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**Introduction**

Hypertension is a highly prevalent disease worldwide and is estimated to affect around 42% of Portuguese adults,<sup>1</sup> a prevalence that is predicted to grow in the future.<sup>2</sup> Over the last decade, considerable improvements have been achieved in the care of hypertensive patients in Portugal, with the proportion of those receiving treatment increasing from less than 40%<sup>3</sup> to almost 75%; however, the proportion of controlled patients remains at an unsatisfactory 42.5%.<sup>1</sup>

Poor adherence to therapy is an issue in all chronic diseases and even more important in a largely asymptomatic disease like hypertension.<sup>4</sup> It leads to lack of control<sup>5</sup> and to a higher risk of cardiovascular events.<sup>6</sup>

Several methods exist to assess adherence, which can be divided into direct and indirect approaches.<sup>7</sup> Direct methods, such as directly observed therapy or measurement of drug metabolites in plasma or urine samples, are cumbersome or technically complex,<sup>8,9</sup> and are thus unavailable in daily practice. Indirect methods include electronic medication monitors, which are expensive and also largely unavailable outside the research environment,<sup>10</sup> and questionnaires.

Adherence questionnaires have been developed, validated and used in patients with several chronic diseases.<sup>11,12</sup> In hypertension, the most widely used questionnaire is the Morisky Medication Adherence Scale<sup>13</sup> but its Portuguese version is not free to use without a license from the author. Another commonly used questionnaire is the Hill-Bone

Compliance to High Blood Pressure Therapy Scale, which has been developed and validated in a low literacy setting, and its psychometric characteristics described.<sup>14</sup> A Portuguese version of this questionnaire does not exist.

Given the need to assess adherence to therapy with a simple and readily available instrument in daily practice, it was our aim to perform a translation and cultural adaptation of the Hill-Bone Compliance Scale from the original English to Portuguese.

**Methods**

A formal translation and cultural adaptation process was performed, as recommended in the Principles of Good Practice of the International Society for Pharmacoeconomics and Outcomes Research regarding patient-reported outcomes (PRO) measures.<sup>15</sup>

As preparation, the authors of the original scale were contacted and provided authorization for the process; moreover, a member (CDH) of the team that developed and tested the original instrument was involved in the preparation of this manuscript. A working group was assembled, including physicians with experience in the care of hypertensive patients and physicians who have been responsible for the production, as well as translation and cultural adaptation, of questionnaires.<sup>16-18</sup> Forward translation from English to European Portuguese was performed by two independent native Portuguese speakers who are fluent in

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