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# Kenny Music Performance Anxiety Inventory (KMPAI): Transcultural Adaptation for Brazil and Study of Internal Consistency

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## Abstract

Music Performance Anxiety (MPA) is defined as an anxious condition, when directly related to solo or group musical performance, and for any instrument, singing included. The assessment of MPA is a challenge to researchers and clinical professionals involved with this disorder. Many instruments are available to assess MPA, but mostly of these instruments are available only in English.

Objective: to report the process of cross-cultural validation of the Kenny Music Performance Anxiety Inventory (KMPAI) for Brazil and to describe the study of internal consistency in a Brazilian musicians sample (230 amateur and professional musicians; 58.3% females; 39.17 years mean age).

Methods/ Results: the translation was carried out through a rigorous process of translation, backtranslation and face validity. The internal consistency was evaluated with the Cronbach's alpha, and was considered appropriate with a 0.82 value. No item from the scale would alter the value of alpha, which supports the internal consistency of the scale. The highest item correlation was among items 11 and 23 ($r=0.50$, $p<0.001$).

Conclusion: considering that the MPA is a very prevalent disorder among musicians, with significant impairment in social and work life, we hope that the KMPAI will contribute to a better knowledge in screening of MPA in Brazil, making it easier for musicians to be properly treated with specific and effective interventions.

**Keywords:** Anxiety; Performance; Music; scale; Transcultural; Reliability; KMPAI

## Introduction

Performance Anxiety Disorders is a group of disorders that affects subjects in a variety of public situations, such as public speaking, sport-related, artistic activities or even mathematical calculation and usually defined as an experience of persistent and stressful apprehension related to a performance in public [1-3]. The Musical Performance Anxiety (MPA) is defined by this anxious condition, when directly related to solo or group musical performance, and for any instrument, besides singing. [1,4-7]. MPA is recognized as a subtype of the Social Anxiety Disorder (SAD), occurring in a continuous severity scale that range from a normal stress factor – that happens with no impairment to the musician – to severe and debilitating symptom, similar to panic attack [4,8-11].

The prevalence of MPA in the population is still inaccurate and differs within studies, with rates that range from 12 to 59% [6,12,13]. In Brazil, a study with amateur and professional musicians found a MPA prevalence of 24% [14,15].

One possibility is differences in MPA measurements and definitions, differences between samples, response samples and valorization of one or another MPA component [5,6,16].

MPA is not an easily understood phenomenon: it is multidimensional, with different expression factors and severity, ranging according to the situation, in many ways. The assessment of MPA is a challenge to researchers and clinical professional involved with this disorder [13,16]. Many instruments are available to assess MPA, as well as to adopt clinical parameters to its diagnose, but mostly of these instruments are available in English, as mentioned by Burgués [16].

In light of the variety of assessment instruments, the Kenny Music Performance Anxiety Inventory (KMPAI) [1] should deserve special attention, as it is widely used to evaluate its psychometrical properties in different cultural contexts.

The KMPAI refers to the anxiety model proposed by Barlow [17], with three integrated factors turning an individual more or less vulnerable to the development of an anxiety disorder: a) vulnerability/ biological inheritance; b) general psychological vulnerability, based on primitive experiences during one's development and; c) specific psychological vulnerability associated to learning processes. The KMPAI is composed of 26 items, with Likert scales from -3 (I fully disagree) to +3 (I fully agree), aimed to measure anxiety, tension, memory alterations and negative cognitions symptoms related to MPA. It also searches for elements related to subject's life history, and family relationships, such as the intensity of attention that subject received from parents during childhood. The KMPAI has in an

original study an internal reliability of 0.94 Cronbach's alpha, with adequate predictive validity, and positive and significant correlations with the State-Trait Anxiety Inventory (STAI) and with the Cox & Kenardy MPA scale (CK-MPA), a specific instrument to assess MPA, which certifies its concurrent validity.

Although Kenny [18] subsequently propose an expanded version of this instrument with 40 items (KMPAI-R), which was the object of research by Rocha et al. in Brazil [19], we decided to conduct a cross-cultural validation of the initial version for Brazilian context, based on their adequate psychometric properties and on the small number of items, which is essential for screening.

## Methods

The instrument was first translate from its original English version into Portuguese by an experienced translator and was then independently translated by one brazilian psychiatrists and one brazilian cardiologist with good knowledge of the English language. The three versions were compared and discussed until a common version was consensually found. This version was then independently back translated by a bilingual psychologist with experience in research on psychiatric disorders, who had no access to the original English version, and was presented to the author of the original scale for appreciation. The author did not suggest any modification, considering the version of the scale to be adequate, and formally authorized the official use of this Portuguese version.

In order to further establish the adequacy of the instrument, for convenience two Brazilian psychiatrists with substantial competence in the use of scales acted as raters, evaluating the instrument in terms of item pertinence and formulation, confirming its face validity.

Pilot testing with a reduced number of musicians (n=30) was performed in order to determine the semantic understanding of the instructions and of item formulation. No suggestions of modifications to be incorporated into the final version of the instrument were necessary. This step was thus considered to conclude the translation and adaptation stage of the KMPAI. The translated and adapted version can be visualized in Appendix A.

The scale was later answered by a sample of 230 amateur and professional musicians for the evaluation of items and internal consistency of the KMPAI. The inclusion criteria were age (18 years or older), correct filling out of the instrument, and frequent participation on musical performances.

The data was analyzed with the help of a statistic program, using descriptive statistic to characterize the sample and to evaluate the Cronbach's alpha, in order to verify the internal consistency of the scale. Values of alpha considered acceptable were those above 0.60 [20].

This study was approved by the local Medical Ethic Committee (Process HCRP no. 12206/2009).

## Results

The sample was composed by 230 amateur (61.3%) and professional musicians, of which 58.3% were female, with mean age of 39.17 (SD=16.48). The majority of them had a college degree (53.9%) and had singing (41.6%) as main musical instrument.

Considering that the total score can range between (-) 78 to (+) 78, the average scale score was -22.92 (SD=21:57). The highest scoring items were eight (mean=0.68; SD=2.04) and five (mean=0:26; SD=2.13). The lowest scores were observed for the item six (mean=-2.07, SD=1.58) and 22 (mean=-2.02, SD=1.54).

The analysis related to the internal consistency (Cronbach's alpha for the scale, as well as the correlation between item and total score, and the alpha value in case any determined item is excluded) are shown in Table 1.

| Item | Correlation to total score | α if item is excluded |
|---|---|---|
| 1 | 0.481 | 0.807 |
| 2 | -0.089 | 0.829 |
| 3 | 0.374 | 0.821 |
| 4 | 0.473 | 0.809 |
| 5 | 0.339 | 0.814 |
| 6 | 0.468 | 0.810 |
| 7 | 0.348 | 0.813 |
| 8 | 0.107 | 0.823 |
| 9 | 0.101 | 0.823 |
| 10 | 0.301 | 0.821 |
| 11 | 0.499 | 0.809 |
| 12 | 0.482 | 0.807 |
| 13 | 0.286 | 0.816 |
| 14 | 0.286 | 0.816 |
| 15 | 0.478 | 0.808 |
| 16 | 0.378 | 0.812 |
| 17 | 0.489 | 0.807 |
| 18 | 0.418 | 0.810 |
| 19 | 0.127 | 0.823 |
| 20 | 0.528 | 0.807 |
| 21 | 0.357 | 0.813 |
| 22 | 0.545 | 0.808 |
| 23 | 0.551 | 0.806 |
| 24 | 0.222 | 0.819 |
| 25 | 0.390 | 0.812 |
| 26 | 0.198 | 0.819 |
| Total: α=0.82 | | |

**Table 1:** Correlation between items of K-MPAI and total score, and value of alpha if the item is deleted

The internal consistency of the KMPAI presents excellent value, with a Cronbach's alpha of 0.82. The items that are more correlated to the total score are items 23 and 22, related to the lack of future perspective and to negative experiences regarding musical

performance, which are both very characteristic aspects of MPA. The items less correlated to the total score are items 2 and 9, that approach questions of trust in others and satisfaction with parental care, elements that relate to early interpersonal experiences. These items had correlations values of -0.08 and 0.1. Nonetheless, it is observed that none of the items, if deleted, would alter substantially the value of alpha, signalizing a very Strong coherence within the items, even if considered those with lower correlation to the total score.

## Discussion

The process of translating the KMPAI to brazilian portuguese followed rigorous criteria of translation and backtranslation, and the pilot-study made it possible to confirm the face validity of the brazilian version of the scale, which did not suffered any modifications when compared to the original version [21]. Therefore, the instrument is available on its brazilian portuguese version, and its use can be requested to the authors.

Considering that MPA is a very prevalent disorder in musicians with significant impairment in social and work life, we hope that this study will contribute to a better knowledge in screening of MPA, favoring that musicians can be properly and efficiently treated, with specific interventions regarding MPA.

Further studies that assess other psychometric properties of the KMPAI are needed to confirm the adequacy of the scale.

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