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Original article

Blood/Injection Fear Scale: Portuguese version, cultural adaptation and psychometric properties in a large sample of primary health care users

*Miriane Lucindo Zucoloto**, *Edson Zangiacomi Martinez*

Universidade de São Paulo (USP), Ribeirão Preto, SP, Brazil

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ABSTRACT

Background: Blood/injection phobia may have important consequences for health. These phobic individuals, in most cases, avoid contact with health systems, postpone or avoid medical procedures, avoid invasive treatments and do not participate in health promotion and early detection of disease initiatives such as vaccination, consultations, preventive exams or blood donation. Thus, specific and validated instruments are necessary to assess this variable. In addition, a lack of studies on this theme may be associated with the low availability of instruments. This study aimed to propose a Portuguese version of the Blood/Injection Fear Scale (BIFS-P) and assess its psychometric properties.

Methods: Translation and back-translation were performed. Content validity was assessed in two steps by a panel of 20 experts. The psychometric properties were assessed in a stratified and representative sample of primary health care service users of Ribeirão Preto, southeastern Brazil. Exploratory and confirmatory factor analyses were conducted using a polychoric correlation matrix.

Results: A total of 1054 primary health care users participated; 79.7% were female and the mean age was 40.6 (standard deviation = 15.16) years. According to the exploratory factor analysis, the items can be grouped into three or five factors with best fits being detected for the three- and five-factor models in confirmatory factor analysis.

Conclusion: Blood/Injection Fear Scale (Portuguese version) is easy to understand and apply in the general population, showed adequate psychometric properties, and represents an alternative in the assessment of blood/injection phobia for future studies.

* *Corresponding author at:* Department of Social Medicine, Ribeirão Preto Medical School, Universidade de São Paulo (USP), Avenida Bandeirantes, 3900, 14049-900 Monte Alegre, Ribeirão Preto, SP, Brazil.
E-mail address: mirianezucoloto@gmail.com (M.L. Zucoloto).

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Introduction

Blood and injection phobias are characterized by an extreme aversion of see blood or receive injections or be subjected to invasive medical procedures.[1]

According to Kose and Mandiracioglu,[2] among the various types of specific phobias, there are two types of blood/injection phobia described in the scientific literature that are classified according to the presence or absence of a vasovagal reaction. The vasovagal reaction, characterized by a sudden initial increase in heart rate and blood pressure followed by a sudden drop, is a dysphasic cardiovascular response elicited in the face of the exposure of the individual to situations of fear. For this reason, the vasovagal reaction is accompanied by symptoms such as discomfort, nausea, pallor, expressions of disgust/loathing, and even fainting, all of which are very common among patients with blood and injection phobias.[2–4]

Unlike other types of specific phobias, blood and injection phobias may have important consequences for health. In most cases, these individuals avoid contact with health systems, postpone or avoid medical procedures, avoid invasive treatments and do not participate in health promotion and early detection of disease initiatives such as vaccination, consultations, preventive exams or blood donation.[5,6]

In the face of these direct implications to the health, the development and validation of specific instruments to evaluate blood/injection phobia are necessary. Some instruments were proposed for this investigation in the general population, such as the Blood-Injection Symptom Scale (BISS)[7] and the Blood/Injection Fear Scale (BIFS).[2]

The BIFS was proposed by Kose and Mandiracioglu in 2007[2] and consists of 20 items divided into two factors, fear of blood and fear of injections and the symptoms involved. The original version of this scale was published in English and until now, it has not been translated to other languages.

Few studies have been conducted to investigate blood/injection phobia in the Brazilian population.[8,9] To the best of our knowledge, there is only one Brazilian study, published by D'El Rey and Pacini in 2005; it investigated the prevalence of blood and injection phobias in a representative sample of the general population of the city of São Paulo.[8] Among the results, the combined prevalence of blood or injection phobias was 4.1%, with this fear being more common among women and among individuals with little schooling.

It is believed that the low availability of instruments that are appropriate and adapted for use in the general population is associated with the low number of epidemiological studies in Brazil on this type of phobia. The majority of studies in the area performed in Brazil refers to diagnostic and treatment techniques and are from the psychology and/or psychiatric fields.[10]

Objectives

In light of the foregoing, this study was conducted to present a Portuguese version of the BIFS and evaluate its psychometric properties in a representative sample of primary health care users in Ribeirão Preto, southeastern Brazil.

Methods

Instrument characteristics

BIFS is composed of 20 items divided into two factors according to the original proposal; the first is 'fear of injections' (Items 1–12) and the second "fear of blood" (Items 13–20).[2] Responses use a 5-point Likert scale (1 = Strongly agree; 2 = Agree; 3 = Neither agree nor disagree; 4 = Disagree; 5 = Strongly disagree).[2]

Translation, back translation and cultural adaptation

Three bilingual translators, whose native language is Brazilian Portuguese, performed the translation of the BIFS, independently. The two researchers responsible for the study, who are also bilingual, compared the three translated versions. Thus, the Portuguese version of BIFS was defined.

The Portuguese version of the instrument was sent to a translator fluent in Brazilian Portuguese whose native language is English to perform the back translation. This translator was not aware of the content of the original scale and was not informed that it was a back-translation. The back translation was important to confirm that the translation of the instrument did not change the meaning of the items according to the original proposal.

After these steps, the Portuguese version of the BIFS (BIFS-P) was obtained and had its psychometric properties evaluated in this study.

Content validity

To evaluate the objectivity and relevance of the BIFS-P, the content of its items was assessed independently by a panel of eight judges, health professionals, with experience in hematology transfusion medicine and/or in professional services in primary health care. Judges were informed about the objectives of the study and were asked to classify each item of the instrument as adequate or not adequate for use in the target population. Suggestions of modifications and simplification of items were requested in these cases. The content validity index (CVI) was calculated for each item considering that IVC ≤ 0.70 is indicative of the need of a new translation (i.e., 30% or more of the judges classified the item as not adequate).[11] According to the suggestions of the judges, some items were modified aiming to simplify and improve the understanding prior to the application of the instrument in the target population.

In a second phase of the content analysis, a panel of 20 judges with experience in hematology and transfusion medicine was invited to classify, also independently, each item of the instrument according to its essentiality (essential, useful but not essential or not necessary) to evaluate 'fear of blood or injections'. The content validity ratio was calculated according to the proposal of Lawshe.[12] The significance of the decision was in accordance with the proposal of Wilson et al.,[13] adopting a level of 5%.

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