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LETTERS TO THE EDITOR

Equivalence of Measurement: On Life Before Multigroup Confirmatory Factor Analysis[☆]



Equivalencia en la medida: la vida antes del análisis factorial confirmatorio multigrupo

To the Editor,

We read with great interest a recent article about the translation of the Mastocytosis Quality of Life Questionnaire.¹ The main aim was transcultural adaptation of this instrument to achieve equivalence with the German version. The article, in addition to being relevant, has prompted us to discuss some aspects of the concept of equivalence to raise awareness of the complexity and different levels of adaptation to be considered before undertaking the statistical analysis corresponding to different psychometric studies.

The equivalence in questionnaires, as well as in any other psychometric test, is essential for measurement of outcomes in health sciences, as this is closely tied to their validity,² particularly in transcultural research. However, many studies only report equivalence through multigroup confirmatory factor analysis (MCFA), a statistical technique that consists of progressively restricting parameters to test whether the internal structure of an instrument is equivalent between demographically or culturally diverse groups.³ But this procedure, in itself, is insufficient to guarantee this property. There are different levels or sources of equivalence^{4,5}: conceptual equivalence, item equivalence, semantic equivalence, operational equivalence, outcome equivalence, and functional equivalence; only the latter of these corresponds to MCFA.

Conceptual equivalence refers to the importance, representation, and meaning attributed to a certain construct in both groups or cultures.⁴ This first level of equivalence requires exploring and analyzing the way in which each group conceptualizes, defines, or evaluates the variable of interest. Thus, translation and statistical analysis of the test is not enough; it is necessary to undertake theoretical and qualitative investigations beforehand,⁵ and search for instruments already available to compare meaning.

The equivalence of items consists of the importance and acceptability of each of the items in different groups.⁴ At this level, the aim is to ensure that the items are relevant and not offensive,⁵ a particularly delicate topic in transcultural studies, as some items may be taboo. Thus, it is necessary to guarantee that the items are relevant, clear, and representative for measuring the construct, as well as retaining coherence with the conceptual framework. This level of equivalence is linked to content validity and input from anthropologists, sociologists, and members of the target populations may be needed.⁵

Semantic equivalence refers to the fact that the items should mean the same in both groups or cultures.^{4,5} It is therefore expected that translations and adaptations fit the original meaning of the items. To ensure this, it is important that drafting takes into account dialect, use of technical language, formality, and connotation of a commonly used phrase and even fashionable words in people of the same sex or age.⁴

Operational equivalence implies that a test can be administered, scored, and interpreted in the same conditions in the target groups in order to provide a fair assessment.³ This type of equivalence could refer to equity and, therefore, impartiality.⁶

Outcome equivalence means that the psychometric properties of different versions of a test should be the same.^{4,5} This can be evidenced through statistical methods such as MCFA, in order to confirm that the internal structure of a test is identical in different groups or cultures.

Finally, we now come to functional equivalence, which is defined as the combination of the 5 previous types of equivalence. This is achieved when a test meets its goal, regardless of the target group in which it is administered.

In conclusion, it is important to comply with each of these types of equivalence when developing psychometric tools before performing MCFA, particularly in the case of transcultural studies. Similarly, the importance of qualitative research in the adaptation and validation of tests should be highlighted, as well as semantic analysis of the constructs, because few articles address whether concepts have the same meaning in different cultures or even whether 2 concepts in the same language are interchangeable.

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José Eugenio de Olavide Landazábal: Photographs and Lithographs[☆]

José Eugenio de Olavide Landazábal: fotografías y litografías

To the Editor:

In their recently published article in *Actas Dermo-Sifiliográficas*, Conde-Salazar et al¹ pose the question of whether José Eugenio de Olavide Landazábal (1836–1901) is the person depicted on “Plate IV in the section on spontaneous local skin diseases or deformities,”[†] an illustration that is captioned “disseminated canities” (*canicie diseminada*) in Dr Olavide’s own *Atlas of Clinical Images of the Skin and Skin Diseases*.²

The authors reach the conclusion that this portrait, painted and reproduced as a color lithograph by José Acevedo (fl 1850–1905), is indeed of the author of the *Atlas*. As evidence of their “discovery” of an image of Olavide, they compare it with several known portraits of him. They also point to his signature on the illustration in numerous copies of the *Atlas*.

In addition, they show the results of superimposing a digitized version of the illustration onto a digitized photograph published on page 12 of the Barcelona magazine *Iris* on March 16, 1901, stating that the photographer is “unknown”



(*anónimo*). The authors point out the similarity between the clothing shown in the photograph and the illustration, stating, “We can say almost certainly that the portrait carefully drawn and reproduced by José Acevedo for the *Atlas* was based on this photograph of Olavide.”

In their conclusion Conde-Salazar et al¹ note that placing an author’s portrait on one of the opening pages of a book was not unusual in this period. What they find striking about this “apparent portrait,” is that it appears in the middle of Olavide’s work, presenting the author as just one patient among others.

We agree that the illustration depicts Dr Olavide and that it was based on the photograph published in *Iris*. The lithograph is not presented as a realistic portrait, however, but rather as an artist’s interpretation to justify its inclusion in the *Atlas* as an illustration of a so-called disease — even though canities is not a diagnosis as such. The aim of presenting himself as just another patient explains why the author chose to insert a color plate in the middle of the volume, in one of the sections on disease categories, rather than place a photograph at the beginning.

This story was widely known in Olavide’s time, and the fact that it was nearly forgotten shows how little attention is paid to the history of dermatology in Spain. Apart from traces left in oral tradition, there are simple ways to confirm the veracity of the story and, in the process, expand on our knowledge of Olavide.

The photograph referred to by Conde Salazar et al¹ appeared in *Iris* in the context of an obituary³ whose text reads as follows: “Dr Olavide left a monumental work, his *Iconographic treatise* on skin diseases, with its magnificent color illustrations showing the innumerable signs of diseases in patients. Unusually, a portrait of the author appears in the section on canities, by which means the distinguished dermatologist chose to present himself as an example of a patient, even though he only suffered the mild condition of graying hair.”

The quality of the photograph reproduced in *Iris* is poor, but at least one original print has been preserved. It is one of the best images — if not the best — we have of Dr Olavide (Fig. 1).

[☆] Please cite this article as: Fonseca Capdevila E. José Eugenio de Olavide Landazábal: fotografías y litografías. *Actas Dermosifiliogr*. 2021;112:485–486.

[†] Translator’s note: The texts in quotes in this paragraph and any others that come from the article being discussed (Conde-Salazar et al¹) were taken from the open-access English version of that article (DOI: 10.1016/j.adengl.2019.09.001). However, the quote in the seventh paragraph, from reference 3, is from this translator; in it, Olavide’s *Atlas* is referred to as his iconographic treatise, shown in this translation in italics and with a capital letter as in the original.