11. Kazul H, Miyajima M, Mori E, Ishikawa M. SINPHONI-2 Investigators. Lumboperitoneal shunt surgery for idiophatic normal pressure hydrocephalus (SINPHONI-2): an open-label randomised trial. Lancet Neurol. 2015;14:585—94.

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A comparison of alpha coefficients in independent samples: a complementary study to the Spanish-language version of EUROQUEST☆,☆☆

Comparación de coeficientes alfa en muestras independientes: un análisis complementario al EUROQUEST de Marhuenda et al.

Dear Editor:

It is important to report confidence coefficients since they allow us to determine the precision and stability of a given measurement.[1,2] The magnitude of the value also provides information on the degree of influence on subsequent statistical analyses.[3] In their validation of the Spanish-language version of EUROQUEST, Marhuenda et al.[4] report the α coefficient, which is one of the most widely used estimators of the reliability of a score and is interpreted as reflecting what percentage of the variance observed corresponds to true variance.[5,6] They then compare their α values with those obtained in a French study,[6] concluding that their own results are more reliable than those found by the French researchers.

While α coefficients may vary between studies due to differences between the samples analysed, the multicultural approach of EUROQUEST means we may expect the estimated true variance to be statistically similar between the groups analysed.[8] This would enable us to at least partially determine the absence of bias, among other factors, although these conclusions must be supported by empirical findings.[9]

According to Marhuenda et al.,[4] the α coefficient values from their sample are more reliable than those found in the French study; however, they reach this conclusion by means of a descriptive comparison. Both this approach (heuristic judgement) and the conclusions reached may have an impact on subsequent studies on EUROQUEST. This is relevant because there is a possibility of researchers erroneously concluding that differences exist. It is therefore important to be aware of the existence of procedures specifically designed for comparing α coefficients obtained from independent samples.[10,11] These comparison methods account for the magnitude of the α coefficient, the sample size, and the number of items, and enable differences between coefficients to be evaluated statistically.

The complementary analysis is based on the total samples of the Spanish[4] and the French[7] studies, and the number of items per domain reported in Table 1 of the Marhuenda et al. study. Sensory hyperaesthesia,

Table 1 Comparison of α coefficients from the French and Spanish EUROQUEST studies.

	No. of items	$\alpha_{Spanish}$ study ($n = 759$)	α_{French} study ($n = 768$)	$\chi^2_{(1)}$
Organic neurological symptoms	11	0.78	0.71	12.070 ($P < .001$)
Psychosomatic disorders	15	0.77	0.79	1.380 ($P = .240$)
Cognitive symptoms	10	0.89	0.79	63.874 ($P < .001$)
Depressive symptoms	7	0.86	0.78	28.894 ($P < .001$)
Structural and/or functional symptoms	11	0.91	0.85	40.904 ($P < .001$)
Sleep or affective disorders	4	0.71	0.58	15.565 ($P < .001$)
Intoxication	11	0.73	0.64	13.086 ($P < .001$)

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psychopathological disorders, and self-rated quality of life were excluded from the calculation because the number of items in these domains was not reported.

ALPHATEST[12] was used for the comparison of data, revealing statistically significant differences between the α coefficients found in the French and the Spanish studies; this was the case in all domains except psychosomatic disorders (Table 1). Based on this supporting data, we may therefore concur with the Spanish researchers' conclusion that their results are more reliable.[4] Nonetheless, more complex approaches require testing of measurement invariance in order to study potential biases in greater depth.[13] Researchers are encouraged to use analytic procedures going beyond mere observation in order to provide a solid foundation for their arguments.

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References

1. Furr RM. Scale construction and psychometrics for social and personality psychology. California: SAGE; 2011.
2. Meyer JP. Reliability. New York: Oxford University Press; 2010.
3. Zimmerman DW, Zumbo BD. Resolving the issue of how reliability is related to statistical power: adhering to mathematical definitions. J Mod Appl Stat Methods. 2015;14:9—26.
4. Marhuenda D, Prieto MJ, Cardona A, Roel JM, Oliveras MA. Adaptación transcultural y validación de la versión española del EUROQUEST. Neurología. 2015;30:201—7.
5. Cronbach LJ. Coefficient alpha and the internal structure of tests. Psychometrika. 1951;16:297—334.
6. Lord FM, Novick R. Statistical theories of mental tests scores. Reading: Addison-Wesley; 1968.
7. Rouch I, Wild P, Fontana JM, Chouaniere D. Evaluation of the French version of EUROQUEST: a questionnaire for neurotoxic symptoms. Neurotoxicology. 2003;24:541—6.
8. Thompson B, Vacha-Haase T. Psychometrics is datametrics: the test is not reliable. Educ Psychol Meas. 2000;60:174—95.
9. Merino C, Lautenschlager GJ. Comparación estadística de la confiabilidad alfa de cronbach: aplicaciones en la medición educacional y psicológica. Rev Psicol. 2003;12:127—36.
10. Charter RA. Testing the difference between two or more independent coefficient alphas: an example. Percep Mot Skills. 1997;84:464—6.
11. Feldt LS, Woodruff DJ, Salih FA. Statistical inference for coefficient alpha. Appl Psychol Meas. 1989;11:93—103.
12. Lautenschlager GJ, Meade AW. Alpha test. A Windows program for tests of hypotheses about coefficient alpha. Appl Psychol Meas. 2008;32:502—3.
13. Van der Schoot R, Lugtig P, Hox J. A checklist for testing measurement invariance. Eur J Dev Psychol. 2012;9:486—92.

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Novel probable pathological variant c.1249A>C in exon 7 of the *GAA* gene associated with Pompe disease in adults☆

Nueva variante probablemente patogénica c.1249A>C en el exón 7 del gen *GAA* asociada a la enfermedad de Pompe del adulto

Dear Editor,

Pompe disease is a rare genetic disorder affecting lysosomal storage. Acid alpha-glucosidase (GAA) is a lysosomal enzyme necessary for glycogen degradation. Decreased enzyme activity results in glycogen accumulation, mainly in muscles.[1] This autosomal recessive disorder is caused by mutations in the gene coding for GAA, located on chromosome 17q25.3. Over 450 *GAA* mutations have been described (http://cluster15.erasmusmc.nl/klgn/pompe/mutations.html). The type of mutation affects residual enzyme activity, which in turn determines the severity of symptoms: residual enzyme activity is below 1% in infantile forms and below 40% in adult forms.[2] We present the case of a Spanish man with late-onset Pompe disease and a novel allelic variant of *GAA* in heterozygosis.

The patient was a man who began to experience weakness in the pelvis at the age of 57. The weakness first affected his ability to practice sport. The patient never experienced muscle pain, muscle spasms, respiratory insufficiency, or bulbar symptoms. The neurological examination

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