

COMUNICAÇÃO BREVE

METRIC PROPERTIES OF A PORTUGUESE VERSION OF THE ABRIDGED, 5-ITEM VERSION OF THE INTERNATIONAL INDEX OF ERECTILE FUNCTION (IIEF-5)

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ABSTRACT: Erectile dysfunction (ED) is an important public health issue for which accurate clinical evaluating tools are necessary. The abridged International Index of Erectile Function (IIEF-5) was developed for that purpose. The aim of the present research is to develop a Portuguese version of the IIEF-5 and to study preliminary structural metric properties. The present study used a sample of 113 healthy men. The results show that the metric properties are accurate.

Key words: Assessment, Erectile dysfunction, Metric properties.

ESTUDO PRELIMINAR DAS PROPRIEDADES MÉTRICAS DA VERSÃO PORTUGUESA REDUZIDA DE 5 DO INTERNATIONAL INDEX OF ERECTILE FUNCTION COM 5 ITENS

RESUMO: A disfunção eréctil é um tema importante de saúde pública que necessita de instrumentação precisa para ser identificada. O International Index of Erectile Function reduzido (IIEF-5) foi desenvolvido com esse objectivo. O objectivo do presente estudo é desenvolver uma versão de estudo do IIEF-5 e fazer uma inspecção preliminar das suas propriedades estruturais. Participaram no estudo 113 homens saudáveis. O instrumento mostra boas propriedades métricas.

Palavras chave: Avaliação, Disfunção eréctil, Propriedades métricas.

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Erectile dysfunction (ED) affects many men, and the prevalence of ED depends on the population studied and the definition and methods used. The values of prevalence show a large gap from country to country and from study to study. The need for an easy-to-use clinical instrument for the detection of ED is recognized. Then, an abridged version designated as International Index of Erectile Function (IIEF-5), with five items, was developed to diagnose the presence and severity of ED (Rosen, Cappelleri, Smith, Lipsky, & Pena, 1999). One of the objectives of the abridged version is the need for a simple patient-administered diagnostic ED tool for easy use by physicians in a clinical setting.

The five items included in the IIEF-5 were selected from the 15-item International Index of Erectile Function, based on the ability to identify the

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presence or absence of ED, and on adherence to the National Institute of Health's definition of ED (NIH Consensus Development Panel on Impotence, 1993). These five items focused on erectile function and intercourse satisfaction. The IIEF-5 promotes some discussion about the opportunity or adequacy of this kind of measure (Cappelleri & Rosen, 1999; Vroege, 1999). We developed a preliminary Portuguese version of the IIEF-5 which we show in Table 1.

Table 1

The Portuguese version of the items and answers: (in brackets the original version)

Individual items of an abridged, 5-item version, of the International Index of Erectile Function (IIEF-5)	
Question	Answer
Q1 – como classifica o seu grau de <u>confiança</u> em conseguir e manter a erecção (How do you rate your <u>confidence</u> that you could get and keep an erection?)	1 – muito baixo/nenhum 2 – baixo 3 – moderado 4 – elevado 5 – Muito elevado
Q2 – quando consegui atingir a erecção por estimulação sexual, <u>quantas vezes</u> é que essa erecção foi suficientemente firme para a penetração? (When you had erections with sexual stimulation, <u>how often</u> were your erections hard enough for penetration (entering your partner)?)	1 – quase nunca/nunca 2 – poucas vezes (muito menos que metade das vezes) 3 – algumas vezes (cerca de metade das vezes) 4 – muitas vezes (muito mais que metade das vezes) 5 – quase sempre/sempre
Q3 – durante as relações sexuais, <u>quantas vezes</u> é que consegui manter a erecção após a penetração? (During sexual intercourse, <u>how often</u> were you able to maintain your erection after you had penetrated (entered) your partner?)	1 – quase nunca/nunca 2 – poucas vezes (muito menos que metade das vezes) 3 – algumas vezes (cerca de metade das vezes) 4 – muitas vezes (muito mais que metade das vezes) 5 – quase sempre/sempre
Q4 – durante as relações sexuais, <u>foi difícil</u> manter a erecção até ao final da actividade sexual? (During sexual intercourse, <u>how difficult</u> was it to maintain your erection to completion of intercourse?)	1 – extremamente difícil 2 – muito difícil 3 – difícil 4 – ligeiramente difícil 5 – não difícil
Q5 – quando tentou ter relações sexuais, <u>quantas vezes</u> é que teve satisfação? (When you attempted sexual intercourse, <u>how often</u> was it satisfactory for you?)	1 – quase nunca/nunca 2 – poucas vezes (muito menos que metade das vezes) 3 – algumas vezes (cerca de metade das vezes) 4 – muitas vezes (muito mais que metade das vezes) 5 – quase sempre/sempre

The objective of the present brief report is to present the psychometric and structural properties of the Portuguese version of the IIEF-5.

METHOD

Participants

Non-disease and non-institutionalised Portuguese males with sexual activity, constitute a convenience sample of 113 individuals aged between 21 and 75 years ($M=42.58$; $SD=13.83$), and school level between 4 and 21 years ($M=13.15$; $SD=4.52$).

Material

They fulfilled the Portuguese version of the IIEF-5 shown in Table 1, and a demographic questionnaire. For the statistical treatment of data we used SPSS and EQS V6.1 (Bentler & Wu, 1995).

RESULTS

Based on the cut-off points proposed by the authors (Rosen et al., 1999), we identified participants with ED. The cut-off point under 22 points proposed by the authors identified 33.1% of the sample with ED, 8.5% of which with severe ED, 3.1% of which with moderate ED, 1.5% with mild to moderate ED, and 20% with mild ED. People with these values should be subjected to a medical examination. These values are similar to the ones found with the IIEF-5 with a French sample (31.6%) (Giuliano et al., 2006).

Exploratory factor analysis: one-factor solution found through exploratory factor analysis on the five items explains 74.34% of the variance, with factorial loadings on the factor between 0.76 and 0.93, and the values mainly around 0.90.

An internal consistency (Cronbach alfa) of 0.91 was found, value similar to other studies (Lim et al., 2003), and this is an elevated value for five items. Correlations item total score of the IIEF-5, corrected for overlap, varies between 0.65 and 0.89, mainly in the eighties.

Confirmatory factor analysis (CFA) was used to test the one-factor hypothesized model. When the Goodness-of-Fit and Adjusted Goodness-of-Fit Indexes are greater than 0.95, the analyses indicate adequate fit of the models (Hu & Bentler, 1999). Comparative Fit Index (CFI) is a revision of a previous goodness-of-fit indicator, the Normed Fit Index (NFI), which underestimated fit in small samples. The CFI takes sample size into account, and values greater than 0.90 indicate an acceptable fit of the data (Byrne, 1994). The second fit index was the Root Mean Square Error of Approximation (RMSEA) where values up to 0.08 indicate an acceptable fit (Browne, & Cudeck, 1993). In our study, CFA results for the one factor solution, $\chi^2(5)=10.52$, for 5 *DF*, $p=0.06$, exhibits a $CFI=0.98$ and an $RMSEA=0.09$ ($CI\ 95\%=0.00-0.17$). These fit indexes show that a single-factor model provides a good fit to the data.

Sensibility: It is generally recognized that “The prevalence of erectile dysfunction has been found to be associated with age. A prevalence of about 5 percent is observed at age 40, increasing to 15-25 percent at age 65 and older” (NIH Consensus Development Panel on Impotence, 1993, p. 6). To explore the sensibility of the IIEF-5 we compared extreme age groups of the sample; men aged under 33 ($n=30$) and men over 50 ($n=31$); we verify that the distribution of the variable (IIEF-5) is similar for the two extreme groups (Levene test, $F=0.56$, $p=0.45$), and that the mean value for this healthy sample is sensitive to age, with the younger group with higher mean ($M=23.26$) and the older group with lower mean ($M=21.87$), ($t(59)=2.06$, $p=0.04$). We found 11 men under the cut-off point of 22 (35.4%) for the older group and six for the younger group (20%).

CONCLUSIONS

The Portuguese form of the IIEF-5 shows adequate metric and structural properties, and the results show functional and metric equivalence with other translations. As a limitation of the study we can refer the small number of the participants and the absence of a comparison group with people with diagnosed erectile dysfunction. However it is a preliminary study and it is necessary to continue the study of other important properties namely, the clinical properties of the questionnaire not inspect in the present study. It appears that the Portuguese version can continue to be used to explore this sensitive theme of ED.

REFERENCES

- Bentler, P.M., & Wu, E.J. (1995). *EQS/Windows user's guide*. Los Angeles: BMDP: Statistical software.
- Browne, M.W., & Cudeck, R. (1993). Alternative ways of assessing model fit. In K.A. Bollen, & J.S. Long (Eds.), *Testing structural equation models* (pp. 132-162). Newbury, CA: Sage.
- Byrne, B. (1994). *Structural equation modelling with EQS and EQS/Windows: Basic concepts, applications, and programming*. Thousand Oaks: Sage Publications.
- Cappelleri, J., & Rosen, R. (1999). Letter to the Editor: Reply to 'The sexual health inventory for men (IIEF-5)' by JA Vroege. *International Journal of Impotence Research*, *11*, 353-354.
- Giuliano, F., Chevret-Measson, M., Tsatsaris, A., Reitz, C., Murino, M., Thonneau, & P. (2002). Prevalence of erectile dysfunction in France: Results of an epidemiological survey of a representative sample of 1004 men. *European Urology*, *42*, 382-389.
- Hu, L., & Bentler, P.M. (1999). Cut-off criteria for fit indexes in covariance structure analysis: Conventional criteria versus new alternatives. *Structural Equation Modeling*, *6*, 1-55.
- Lim, T., Das, A., Rampal, S., Zaki, M., Sahabudin, R., Isaacs, S. (2003). Cross-cultural adaptation and validation of the English version of the International Index of Erectile Function (IIEF) for use in Malaysia. *International Journal of Impotence Research*, *15*, 329-336.
- NIH Consensus Development Panel on Impotence (1993). *The Journal of the American Medical Association*, *270*, 83-90.
- Rosen, R.C., Cappelleri, J.C., Smith, M.D., Lipsky, J., & Pena, B.M. (1999). Development and evaluation of an abridged, 5-item version of the International Index of Erectile Function (IIEF-5) as a diagnostic tool for erectile dysfunction. *International Journal of Impotence Research*, *11*, 319-326.
- Vroege J. (1999). Letter to the Editor: The sexual health inventory for men (IIEF-5). *International Journal of Impotence Research*, *11*, 177.