Editorial comment

Jens Ivar Brox*

The Fear Avoidance Beliefs Questionnaire – the FABQ – for the benefit of another 70 million potential pain patients

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1 Introduction

In this issue of *Scandinavian Journal of Pain*, Ibrahim and Nigerian co-workers report translation, cross-cultural adaption and psychometric properties of the Fear-Avoidance Beliefs Questionnaire (FABQ), translated to Hausa, a language spoken by about 70 million people, mostly in southern Niger and northern Nigeria, but also in other countries in Western Africa [1].

The FABQ was successfully translated into Hausa and cross-culturally adapted. The authors report that the psychometric properties were similar to those of existing versions. This is important because it suggests that the Hausa version of FABQ can be used to evaluate fear-avoidance beliefs about low back pain in Hausa-speaking populations for clinical and research purposes. Results can then be compared to existing and future results from other countries.

2 Psychometrics and clinimetrics

Psychometrics is according to Wikipedia the measurement in psychology and education. More generally it is concerned with measurements of skills, knowledge, beliefs and achievements. It refers to the theory and technique applied to evaluate in particular Patient Related Outcome Measures (PROMS) including pain, disability, health related quality of life, as well as anxiety and depression. Clinimetrics is the science of clinical measurement and is often used synonymously with psychometrics. The goal is

to expand the narrow range of information often used in clinical science [2]. It is a domain concerned with indexes and rating scales to measure symptoms, severity of illness and other distinctly clinical phenomena and was first used by Feinstein in 1982 [3]. In clinical medicine there has been and there is a tendency to rely on hard data such as imaging. The soft information by example obtained by the fear-avoidance beliefs questionnaire, can be reliably assessed by psychometric or clinimetric methods. However, we should keep in mind that some information is lost when complex symptoms or beliefs are transformed or reduced into numbers and handled statistically more or less the way we measure the length of a distance in meters.

3 Measuring the intensity of pain and the intensity of love

We all know that pain intensity cannot be measured exactly in millimetres on a line from 0 to 100 and that a certain belief cannot be graded exactly on a scale from 1 (uncertain) to 7 (certain). Also, most people would agree that the intensity of love is better described in a poem than by a numeric scale. Results or values obtained by psychometrics should be interpreted in this perspective. Information is most likely lost by reducing complex concepts into numbers and the values obtained are not as exact as by example measures from physics like distance and temperature.

4 The minimally detectable change of the FABQ

The limits of agreement of the Hausa version of FABQ ranged from –5.4 to 6.9 for physical activity and from –7.8 to 9.2 for work. For an individual patient, variations within these ranges are random and demonstrates the relatively large

*Corresponding author: Jens Ivar Brox, Department of Physical Medicine and Rehabilitation, Oslo University Hospital, Oslo, Norway; and Faculty of Medicine, University of Oslo, Oslo, Norway, E-mail: j.i.brox@medisin.uio.no

measurement error considering that FABQ are scored from 0–24 to 0–42, respectively. Another estimation of measurement error is the Minimal Detectable Change (MDC) based on Standard Error of Measurement (SEM) from the test-retest analysis and the confidence interval. Ibrahim et al. used the formula $MDC_{90} = 1.65 \times \sqrt{2} \times SEM$. Commonly the MDC is calculated as $MDC_{95} = 1.96 \times SEM_{\text{agreement}} \times \sqrt{2}$. The MDC_{90} from the current study therefore is likely to underestimate the measurement error.

5 The minimally important clinical differences and effect sizes

Responsiveness is a word used to describe sports cars, namely the ability to act quickly. In terms of a questionnaire, good responsiveness means the ability to detect a change if it exists. A responsive questionnaire is therefore able to detect a small difference, while an unresponsive questionnaire is only able to detect large changes. FABQ is reported to be rather unresponsive but vary according to the effectiveness of the intervention and other factors that Ibrahim et al. have discussed [4, 5]. The Responsiveness is usually measured by hypothesis testing and the receiver operating characteristic curve (ROC-curve) as discussed by Ibrahim et al. By using this method, it is possible to estimate the Minimally Important Clinical Difference, which is helpful in the clinical interpretation of change scores [6, 7]. The ROC curve assesses the ability to discriminate between patients who report improvement and those who do not report important change on a global change score. This anchor-based method is not straightforward to apply for evaluation of the FABQ. An anchor in this setting means a subjective estimate of global change in fear-avoidance beliefs. No gold standard exists. As discussed by the authors of the article published in this issue of the *Scand J Pain* [1] their assessment of responsiveness is not according to the COSMIN checklist [8]. The reported effect sizes varied from 0.34 to 0.57, which suggest that the translated version of the FABQ detected a small to moderate improvement. However, several factors influence the effect size, not just the responsiveness of the outcome measure applied.

6 Fear avoidance beliefs and pain aggravated by work

Interestingly, Ibrahim et al. confirmed the three-factor model reported in the German, Greek and Finnish versions

of the questionnaire but contrary to many other translations [9–11]. The third factor was interpreted as pain aggravation due to work and included two questions. This suggests that either two or three indexes can be reported and also that larger studies should explore the factor structure. Other interesting aspects may be explored in future studies, by example examine the association between self-report beliefs assessed by the questionnaire and observation of fear and avoidance behaviour in physical activity and at work.

Conflict of interest: The author declares no conflict of interest.

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