Use of the Nijmegen Questionnaire in asthma

To the Editor:

Van Dixhoorn and Folgering [1] present an insightful and thoughtful analysis of the Nijmegen Questionnaire and its role in the detection and monitoring of dysfunctional breathing, particularly in people with asthma. There is now growing recognition of the multidimensional nature of asthma and the variety of drivers (physiological, inflammatory, environmental, psychological, perceptual, behavioural and comorbidity-related) that contribute to asthma control. Their insight in stating that the Nijmegen Questionnaire reflects mainly the subjective, psychic dimension of breathing and its response to stress is valuable, and provides a useful framework for clinicians and researchers using this tool with patients, to assist them in interpreting the result. Our group has been through a similar evolution of thinking with regards to the use of the Nijmegen Questionnaire in people with asthma. Our initial thoughts were that the Nijmegen Questionnaire could help to identify a subgroup of asthma patients who hyperventilated and who would benefit from breathing training, and our earliest intervention study confirmed that asthmatics with a high Nijmegen Questionnaire score did indeed appear to have an important subjective benefit from breathing training supervised by a respiratory physiotherapist [2]. However, subsequent work that included asthmatic patients with lower Nijmegen Questionnaire scores but impaired asthma-related quality of life (QoL) [3] showed that those with lower Nijmegen Questionnaire scores also improved. Neither Nijmegen Questionnaire score at baseline nor end-tidal carbon dioxide at baseline predicted response to breathing training. By far the best predictor was the level of impaired QoL at baseline. Improvements in asthma symptoms and QoL had a moderate correlation with Nijmegen Questionnaire score reductions and with anxiety/depression metrics but not with airway physiology or capnography. This implies that, as Van Dixhoorn and Folgering [1] suggest, the Nijmegen Questionnaire indeed reflects the "subjective, psychic dimension of breathing and its response to stress".

It seems that we may, therefore, treat the Nijmegen Questionnaire score as a continuous variable rather than as a dichotomous tool giving a yes/no to hyperventilation, and use it as a measure of the level of personal cognitive and perceptual unpleasantness. It would be useful to have further information on the psychometric properties and minimum important difference when used in this way. This does, however, imply that the Nijmegen Questionnaire is not useful as a "screening test" for identifying people with asthma who should be referred for breathing training and that many people with impaired asthma control despite receiving standard pharmacotherapy (which includes the majority of adults with asthma in recent surveys [4]) could also potentially benefit. Conceptually, this makes sense, in that asthma is inherently stressful, and the abnormal sensations comprising bronchoconstriction and dyspnoea will cause increased stress, and may affect behaviour, even in the best-adjusted people. The poorer the "baseline" coping mechanisms and the greater the presence of multimorbidity or psychosocial disadvantage, the more likely it is that the stressor aspects of their experience may result in augmented distress, maladaptive symptom perception and even in abnormal breathing patterns. Providing people with basic training in a simple, nonpharmacological breathing control intervention – that improves their ability to cope with the consequences of having a disease that we cannot currently cure – is potentially a valuable addition to the ways in which we can help our patients with asthma. The challenge now is in providing breathing training in a convenient, accessible and affordable way.

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Received: June 10 2015 | Accepted: June 14 2015

Conflict of interest: None declared.

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