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Letter to the Editor

Diagnostic score for COPD: Validation of the DS-COPD in clinical settings – Lack of empiricity

We have gone through the article, “Diagnostic score for COPD: Validation of the DS-COPD in clinical settings” (*Clin. Epidemiol. Global Health*, 2013; 1: 107–114)¹ with deep interest and enthusiasm. We request clarifications to our queries listed below:

1. The authors claim to have developed a diagnostic scoring system for COPD and have shown validation of the scale in the paper in question. However, in current article, they have not shown as to how the scale/scoring system was developed and how the equation for calculation of DS-COPD score was developed.
2. The authors have provided a reference, in which they have shown the development of the scale,² however, on perusal of this article we found that the development of the scale is totally arbitrary and lacks statistical validity. The factor loadings reported by them are more than 1 for factor No. 3, which is impractical and indicates multilinearity. Moreover, the reason for inclusion of different components/items as independent variables in the logistic regression equation needs explanation.
3. It is surprising as to why the empiricity of the proposed equation has not been questioned while reviewing and publishing the article – factor components such as heating the house by diesel (?), current cigarette smoking, previous cigarette smoking, previous waterpipe smoking, etc. which are entirely age and culture dependent factors apart from being highly dependent on loco-regional factors. COPD is prevalent in almost all age groups and in many countries heating of house by diesel is irrelevant. In younger age groups (and in some cultures among women) smoking is irrelevant and out of context. Absence of these factors has a detrimental effect on the end outcome of the scale as they comprise the 33.3% of weight of the scale and might result in a high false positivity scenario even in the absence of symptoms.
4. The authors show the correlation coefficient value (r) between percentage of expected FEV₁ and DS-COPD to be -0.242 in Fig. 4 and -0.343 in text (Section 5.5, last paragraph). A cursory look at the Fig. 4 shows a highly randomized nature of the relationship contrary to the one reported by the authors.
5. In their earlier communication using the same DS-COPD criteria,² at the given cut-off of ≥ 10 , the authors have shown the sensitivity of scale to be 88.2% and specificity to a dismal low of 37.6%, however, the authors have claimed to attain a high sensitivity of 84.9% and specificity of 90.2% when they compared the healthy controls with COPD patients alone. This action of theirs leads to a question over the discriminant ability of the scale proposed by them as healthy controls means absence of any symptom.
6. The cost estimates (Table 2) contradict the findings, a total of 59.8% of symptomatic patients not having COPD comprise the study sample and have mean scores ≥ 10 , giving the impression of a high false positivity as against 3.3% reported by the authors, which is contradicted in Fig. 3 of the article in question. It is difficult to assume that the scale having a sensitivity of 84.9% might have false negativity of 3.4% only.

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