Letter to the Editor

The Accuracy of DERM may be a Self-fulfilling DREAM

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We read with great interest the recent paper by Blanco et al. (2008) presenting a new method for the assessment of dermal exposure to pesticides especially in developing countries. Given the budgetary and logistical constraints and specific conditions present in these countries, simple tools are often needed. The authors are to be complimented with their effort. However, we have major concerns with the presented study and the manuscript. One is a major methodological issue and the second is related to the description of our semi-quantitative dermal exposure method DREAM that was presented in your journal a couple of years ago (van Wendel de Joode et al., 2003).

We are of the opinion that a semi-quantitative method based on determinants of exposure stemming from a particular data set should not be tested on the same data set. By doing so, as the authors did, it should not be a surprise that the new method performed relatively well. The authors mentioned that in the original exposure study the work practice determinants explained 50% of the variability in visual scores (Blanco et al., 2005). Their dermal exposure ranking method (DERM) is mainly based on these determinants (8 of the 11 items to be scored are work characteristics). Applying DERM to the original data set resulted in a correlation of 0.69, which not surprisingly almost equals an explained variability of $0.69^2 = 0.48$. Although testing the reliability of a new method on data where the method was derived from is questionable in the first place, it becomes really problematic if the correlation is consequently used to claim that their method outperforms our semi-quantitative method for dermal exposure assessment (DREAM). DREAM was first elaborated based on a conceptual model of dermal exposure (Schneider et al., 1999) and further developed with determinants and their scores stemming from published scientific papers. It was consequently used in a variety of workplaces to test its reproducibility (van Wendel de Joode et al., 2005a). Next, accuracy was tested by measuring dermal exposure after the DREAM method was used to assess the same exposure situations semi-quantitatively (van Wendel de Joode et al., 2005b).

If the authors’ intention was to compare their method with our method, they should have applied both methods side-by-side in a new study of Nicaraguan subsistence farmers applying pesticides. With exposure also assessed quantitatively, not only the performance of the two methods could have been compared but also their performances could have been evaluated against a relatively gold standard.

Finally, given the familiarity of the authors with our work, they should have known that DREAM has been applied in a developing setting among pesticide exposed vineyard workers in South Africa (van Wendel de Joode et al., 2005a). The authors are therefore wrong in believing that ‘validated semi-quantitative DREAMs for pesticides applicable in developing countries are to our knowledge non-existent’. DREAM consists of a semi-quantitative inventory of exposure processes, and therefore it can be applied in any situation, including exposure conditions in developing countries. Contrary to what Blanco et al. (2008) state in their method section, DREAM can be applied by just using pen and paper, with a questionnaire and algorithms that can be calculated using a simple calculator. What is true is that individuals using DREAM should have some basic knowledge of occupational hygiene, but that in our opinion is essential for any tool that is being used to assess occupational exposures.

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