Work 43 (2012) 249–250
DOI 10.3233/WOR-2012-1457
IOS Press

Letter to the Editor

Does KIM do what she promises to do?

Jos Verbeek[a,b,*] and P. Paul F.M. Kuijer[b]
[a]*Finnish Institute of Occupational Health, Kuopio, Finland*
[b]*Coronel Institute of Occupational Health, Netherlands Center for Occupational Diseases, Academic Medical Center, University of Amsterdam, Amsterdam, The Netherlands*

With great interest, we read the article by Steinberg [1] about a risk assessment method for manual material handling, the so-called Key Indicator Method (KIM). The use of the KIM is in Europe strongly supported by the Senior Labour Inspectorate Committee and by the European Agency for Safety and Health (osha.europa.eu/en/topics/msds/slic/handlingloads/19.htm). Therefore KIM has a wide application: at least 34% of the employees in Europe carry or move heavy loads at least a quarter of their working time (osha.europa.eu/en/publications/reports/TERO09009ENC). The method is alluring because of its simplicity where the health risk of lifting, holding and carrying are assessed based on a sum score of the risks posed by the key indicators: duration/frequency, load mass, posture, and working conditions. The final score is divided into four risk classes with the lowest risk class indicating 'Low load situation, physical overload unlikely to appear' and the highest risk class 'High load situation, physical overload is likely to appear. Workplace redesign is necessary'.

However, does KIM do what she promises? No studies have been published in peer-reviewed international journals regarding its clinimetric properties, like validity and reproducibility. Moreover, the results appear not to be in line with epidemiological evidence on risk factors nor with the probably worldwide best-known risk assessment method, the NIOSH lifting equation. An example might illustrate this: a production employee filling kettles 8 times a day (1 point) while manually lifting bags of 25 kg (4 points) nearby his body (30 cm) from about 80 cm to 100 cm high (2 points) in a refined working space (1 point) obtains a score of $(4 + 2 + 1)*1 = 7$ points. A sum score of less than ten points indicates that there is no physical overload according to KIM. On the contrary, lifting loads heavier than 25 kg are an established risk factor for work-related low back pain [2,3]. Putting these data into the NIOSH lifting equation yields a recommended weight limit of 17.7 kg and a lifting index of 1.4 indicating an increased risk of work-related low back pain and a need for job redesign [4].

We believe that a risk assessment method that is widely advocated in Europe and that applies to millions of workers should be based on sound scientific criteria that are transparent, easy accessible and convincing for all European occupational health professionals. We would like to urge the author (and the European Agency for Safety and Health) to explain why and in what respect KIM should be preferred above other risk assessment methods.

References

[1] Steinberg U. New tools in Germany: development and appliance of the first two KIM ("lifting, holding and carrying" and "pulling and pushing") and practical use of these methods. Work. 2012; 41: 3990-3996.
[2] Lötters F, Burdorf A, Kuiper J, Miedema H. Model for the work-relatedness of low-back pain. Scand. J. Work Environ. Health. 2003; 29: 431-40.

*Address for correspondence: Jos Verbeek, Finnish Institute of Occupational Health, PO Box 310, 70701 Kuopio, Finland. Tel.: +358 468108709; E-mail: jos.verbeek@ttl.fi.

[3] Kuiper JI, Burdorf A, Frings-Dresen MHW, et al. Assessing the work-relatedness of nonspecific low-back pain. Scand. J. Work Environ. Health. 2005; 31: 237-243.

[4] Waters TR, Putz-Anderson V, Garg A, Fine LJ. Revised NIOSH equation for the design and evaluation of manual lifting tasks. Ergonomics. 1993; 36: 749-776.