



Use of the Visual Analogue Scale (VAS) for assessment of discomfort in office workers

Wellnomics® White Paper

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Introduction

The Discomfort Assessment in the Wellnomics Risk Management product uses a Visual Analogue Scale (VAS) to allow users to rate the intensity of their pain and discomfort. The VAS was chosen due to the large body of evidence¹ supporting its validity and reliability for measuring pain intensity.

The use of pain scales for reporting discomfort

1. Pain scales based on the Visual Analogue Scale (VAS) of a 10 cm line are widely used for measuring pain intensity.
2. There is a lot of evidence which supports the validity and reliability of these scales².
3. The scores from the VAS have been found to be distinct from measures of other subjective components of pain and sensitive to intervention effects.
4. A scale which uses "anchors" at each end to delineate extremes ("no pain and "worse possible pain") has been shown to be more robust. The use of anchors has been shown to be less vulnerable to biases or distortions in rating than other methods (such as using lists of words or numbers to delineate multiple pain levels).
5. VAS scores have been found to correlate with descriptions of pain, for example, mild pain, moderate pain and severe pain^{3,4}.
6. Computer versions of the VAS have also found to be valid⁵.

Why is the VAS used in Wellnomics Risk Management?

1. Since the VAS is a valid way of assessing the severity of pain experienced by an individual it is a useful tool to add to a risk assessment. An individual scoring high on the VAS has a higher risk with respect to symptoms than someone scoring lower.
2. The VAS can also be used to monitor an individual to assess if any previously reported symptoms have escalated or if any symptoms, previously unreported, have developed. The VAS is therefore a valuable reassessment tool.
3. The VAS can also be used to monitor that any changes implemented are actually resulting in a reduction of discomfort. This can then be used as part of the review process which is advocated for the management of upper limb disorders in the workplace⁶.
4. If only the presence or absence of pain or discomfort is assessed this records only incidence. The literature reports that musculoskeletal symptoms amongst computer users and the general

¹ Turk, D.C and Melzack, R. (1992) Handbook of Pain Assessment, New York: Guilford Press

² E.g. Turk, D.C and Melzack, R. (1992) *Handbook of Pain Assessment*, New York: Guilford Press

³ Jensen, M.P., Chen, C., Brugger, A.M. (2003) Interpretation of visual analog scale ratings and change scores: a reanalysis of two clinical trials of postoperative pain. *The Journal of Pain* 4,7, 407-414

⁴ Collins, S.L., Moore, R.A., McQuay, H.J. (1997) The visual analogue pain intensity scale: what is moderate pain in millimetres? *Pain*, 72, 1-2, 95-97

⁵ Jamison, R.N., Gracely, R.H., Raymond, S.A., Levine, J.G., Marino, B., Hermann, T.J., Daly, M., Fram, D., Katz, N.P. (2002) Comparative study of electronic vs. paper VAS ratings: a randomized, crossover trial using healthy volunteers, *Pain*, 99, 341-347

⁶ HSE (2002) *Upper limb disorders in the workplace*, 2nd ed, HSE Books, Norwich

population are common⁷ so recording only incidence does little to help in the risk assessment process that is required by the legislation.

In conclusion, the use of Visual Analogue Scale for measuring pain intensity is an established and robust measure that is sensitive to change and can be a valuable part of the risk assessment process that is required by EU legislation.

⁷ For example, Gerr, F., Marcus, M., Monteilh, C. (2002) A prospective study of computer users: 1. Study design and incidence of musculoskeletal symptoms and disorders, *American Journal of Industrial Medicine*, 41: 221-235