PREVALENCE OF DRY EYE DISEASE IN VISUAL DISPLAY TERMINAL WORKERS: A SYSTEMATIC REVIEW AND META-ANALYSIS

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Objective: To evaluate the prevalence and risk factors of dry eye disease (DED) in workers using visual display terminals (VDT).

Design: Systematic review and meta-analysis.

Data sources: We searched PubMed, Cochrane Library, Embase and Science Direct databases for studies reporting DED prevalence in VDT workers.

Results: 16 of the 9049 identified studies were included, with a total of 11 365 VDT workers. Despite a global DED prevalence of 49.5% (95% CI 47.5 to 50.6), ranging from 9.5% to 87.5%, important heterogeneity ($I2=98.8\%$, $p<0.0001$) was observed. Variable diagnosis criteria used within studies were: questionnaires on symptoms, tear film anomalies and corneoconjunctival epithelial damage. Some studies combined criteria to define DED. Heterogeneous prevalence was associated with stratifications on symptoms ($I2=98.7\%$, $p<0.0001$), tears ($I2=98.5\%$, $p<0.0001$) and epithelial damage ($I2=96.0\%$, $p<0.0001$). Stratification of studies with two criteria adjusted the prevalence to 54.0% (95% CI 52.1 to 55.9), whereas studies using three criteria resulted in a prevalence of 11.6% (95% CI 10.5 to 12.9). According to the literature, prevalence of DED was more frequent in females than in males and increased with age.

Conclusions: Owing to the disparity of the diagnosis criteria studied to define DED, the global prevalence of 49.5% lacked reliability because of the important heterogeneity. We highlight the necessity of implementing common DED diagnostic criteria to allow a more reliable estimation in order to develop the appropriate preventive occupational actions.

Biography

Frédéric Dutheil is a Professor in Medicine; Medical Doctor in Occupational Health, Physiologist and Researcher at University Hospital of Clermont-Ferrand (CHU) and; a Clinical Fellow of the Australian Catholic University. He is member of the laboratory of metabolic adaptations to exercise in clinical and pathological conditions from 2006 to 2015; his work on biomarkers of stress led him to the creation and the Head of the physiological and psychosocial stress team at UMR CNRS 6024. He is the Scientist of Wittyfit, a software designed to improve health of workers, through a personalized and individualized feedback of their health, taking into account job characteristics. He is now aiming at building tools for objective measures of stress

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