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Digital Fatigue Assessment Scale (DFAS): Development of A Consensus Definition and Initial Validation of a Novel Measure

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ABSTRACT

Digital fatigue has gained significant attention, particularly since the Covid-19 pandemic, as various industrial sectors, including academic, corporate, medical, and banking sectors, transitioned to digital operations from in-person activities. This has drawn digital fatigue to hold significant importance and has garnered increased attention in recent researches. However, there is a lack of agreement on the definition, and there are not enough psychometrically robust measures of this construct. Without an agreed-upon definition and appropriate measures, we cannot effectively study or evaluate digital fatigue, including interventions aimed at enhancing it. In response, this study proposes a precise definition for digital fatigue and conducts a systematic evaluation of various fatigue parameters, such as online fatigue, social media, e-learning, video-conferencing, etc., alongside a few self-rated measures associated with these constructs. The study is divided under Stage I and II. After merging various existing definitions, we posit that digital fatigue comprises three essential components: subjective feeling of cognitive, affective, psychological and behavioural exhaustion; experiencing disengagement as well as discomfort due to prolonged exposure to these digitized resources and experiencing technological, informational and communicative overload. Multiple databases and search engines like Science Direct, Scopus, Web of Science, PsycINFO, Google Scholar were searched. In addition to conducting an exploratory factor analysis for newly developed selfreport measure called Digital Fatigue Assessment Scale (DFAS), the study incorporated two additional measures from existing databases to assess reliability and validity. The results showed good factor loadings for all 5 different factors (greater than 0.30) and a good internal consistency score of $| | > 0.80$. Quality rating for DFAS ranged from 2 to 7 out of 14 due to insufficient evidence for factor structure and/or failure to examine floor/ceiling effects, test– retest reliability, and interpretability.

Keywords: digital fatigue; discomfort; factor analysis; self-report; subjective