

Managing after-work stress: paced breathing while watching video content

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Abstract

Objectives. After a hard day's work, we need to recover from work stress. Two frequently reported activities to relieve stress are television (TV) watching and paced breathing exercises. We investigated the potential of combining these techniques.

Method. Two explorative experiments were conducted. In both experiments, stress was measured through physiological monitoring (heart rate, blood pressure, skin conductance, peripheral temperature, and respiration) and the Stress Arousal Checklist [3]. All experiments ended with a semi-structured interview. The first experiment explored TV-content: free cable-TV watching versus a "dedicated relaxation video" (waterfall scenery). The second experiment explored the effects of watching video content (real-life nature video and computer-generated visualizations) with- and without a visual paced breathing instruction.

Results. In the first experiment, both conditions were reported as relaxing, but neither was sizably doing more so. The physiological results do not clearly differ between both conditions. The main finding is that different people like different content to relax; some found the TV-content "not as relaxing" whereas others found the dedicated relaxation content "rather boring". In the second experiment participants had some difficulty following the paced breathing instruction. However, the participants who did manage to follow the instruction properly showed large heart rate variability. The real-life nature scenery had a stronger effect on stress reduction (self-reported) and was also preferred by most participants.

Conclusion and discussion. Strong interpersonal differences exist regarding video material for relaxation. This may be due to the fact that free TV watching offered more arousing stimuli but also more control than the waterfall video. Both control over one's environment [1] and visual content [2] can impact stress levels and these effects likely differ per individual. Therefore, to be relaxing, video content should be engaging yet not too arousing and should ideally be selected by the viewer. The presented results provide directions regarding the use of video content for stress relief. Paced breathing may be a beneficial addition but further investigation is needed to e.g. find the optimal paced breathing settings and to examine possible learning effects.

References

1. Karasek, R & Theorell, T. 1990. Healthy work: stress, productivity, and the reconstruction of working life. New York, NY: Basic Books, pp. 89-103.
2. Lang, PJ, Bradley, MM, & Cuthbert, BN. 2008. International affective picture system (IAPS). Technical Report A-8. Univ. of Florida, FL.
3. King MG, Burrows GD, & Stanley GV. 1983. Measurement of stress and arousal: validation of the stress/arousal adjective checklist. Br J Psychol 74 (Pt 4):473-9.