

INTISARI

Banyak orang yang mengonsumsi kopi dengan tujuan untuk mengurangi stres yang dirasakan. Kopi dirasa mampu meningkatkan performansi dan menurunkan tingkat stress. Penelitian untuk menguji pengaruh aroma kopi dalam mengurangi *mental stress* selama pengerjaan *task* perlu untuk diuji lebih lanjut. Penelitian ini bertujuan untuk mengetahui pengaruh dari aroma kopi terhadap respons subjektif, respons fisiologis, dan performansi kerja kognitif.

Delapan belas mahasiswa ($21,78 \pm 0,63$ tahun; 12 laki-laki, 6 perempuan) menjadi responden pada penelitian kali ini. Setiap responden menjalani tiga sesi eksperimen. Pada setiap sesi, responden diberikan aroma minuman: *black coffee*, *white coffee*, serta air sebagai plasebo, pada hari yang berbeda dengan urutan pemberian secara random. Pemaparan dibagi menjadi dua tahap. Tahap pertama adalah pemaparan yang dilakukan secara intens, dimana responden diminta untuk menghirup dan menghembuskan aroma secara kontinyu selama satu menit. Tahap kedua adalah pemaparan aroma selama responden mengerjakan dua jenis *mental task*: *short-term memory task* dan *mental arithmetic task*. Respons subjektif diukur melalui *mental workload*, kondisi emosi, dan tingkat *awareness* setelah mengerjakan *task*. *Heart rate variability* (HRV) digunakan untuk mengukur respons fisiologis.

Hasil penelitian menunjukkan bahwa aroma *White Coffee* mampu menurunkan nilai *mood disturbance*. Hasil ini sejalan dengan hasil analisis HRV pada aroma *white coffee* yang menghasilkan nilai *Low Frequent* (LF) lebih rendah secara signifikan setelah dipaparkan secara intens. Nilai LF pada aroma *white coffee* menunjukkan kondisi responden yang tetap stabil secara signifikan setelah aroma dipaparkan dengan intens. Aroma *Black Coffee* ditemukan mampu menurunkan *fatigue* secara signifikan dibandingkan dengan aroma *Placebo*.

Kata kunci: aroma kopi, *mental workload*, kondisi emosi, *awareness*, *heart rate variability*, performansi kerja kognitif

ABSTRACT

Nowadays, people consume coffee to reduce their stress. Also, coffee is considered to improve performance and lowering stress levels. An investigation to examine the effect of coffee aroma in alleviating mental stress during task performance is worth further investigation. This present study aims to determine the effects of the coffee aroma on subjective response, physiological response, and cognitive work performance.

Eighteen students (age $21,78 \pm 0,63$; 12 males and 6 females) participated in this study as participants. Each participant underwent three experimental sessions. Each session, they were exposed to different beverage aromas: black coffee, white coffee, and water as placebo, in separated days and random order. There were two steps of exposure. First exposure is intensely exposure, where participants were asked to inhale-exhale the aroma for one minute continuously. Second step is exposure throughout performing two types of mental tasks: short-term memory task and mental arithmetic task. Subjective responses including mental workload, emotional state, and awareness level were measured after the task performance. Heart Rate Variability (HRV) was measured as the physiological response.

The results showed that the aroma of white coffee was able to significantly lower the score of mood disturbance. This result was in line with the analysis of HRV on white coffee aroma, which could give lower score of Low Frequent (LF) significantly. LF score on white coffee aroma showed that it could stabilize participant's condition significantly after being intensely exposed. Meanwhile, black coffee aroma was able to lower the fatigue level significantly compared to Placebo.

Keywords: *coffee aroma, mental workload, emotional state, awareness, heart rate variability, cognitive work performance*