

Is the EU-18mg/mL JUUL as Satisfying as the US-59mg/mL JUUL? A Mixed Method Study to Explore the Effects of JUUL and Trajectories of Use

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Intro

The surge in popularity of JUUL in the US has not materialised in the UK. A key difference is the nicotine strength; in the US, it is typically 59mg/mL, and is capped at 20mg/mL in the UK and EU. This may limit the ability of JUUL to deliver satisfaction. The aims were to:

- ❖ compare the EU-JUUL (18mg/mL nicotine strength) vs. the US-JUUL (59mg/mL) on daily smokers’ subjective experiences and blood nicotine levels
- ❖ explore trajectories of use in a 2-week follow-up qualitative interview

Methods

- ❖ Mixed method, double-blind, counter-balanced within-participants design with 2 conditions: 18mg/mL vs. 59mg/mL
- ❖ N=19 UK smokers provided blood samples at baseline 5, 15, 30 and 60 mins and subjective effects measures whilst vaping ad lib for 60 mins on 2 separate occasions
- ❖ Semi-structured interviews were conducted at 2-week follow-up

Results

- ❖ The EU-18mg/mL was found to be as satisfying, pleasant and effective at alleviating craving and withdrawal symptoms as the US-59mg/mL JUUL.
- ❖ For Nicotine Hit, means increased from 10 to 60 mins for the US-59mg/mL and decreased under the EU-18mg/mL (p=.045).
- ❖ A significant reduction in smoking and cigarette dependence was reported at the 2-week follow-up (p<.001).
- ❖ Qualitative data suggested that users were aware of increased vaping behaviour when using the 18mg/mL JUUL. Both conditions were perceived positively.

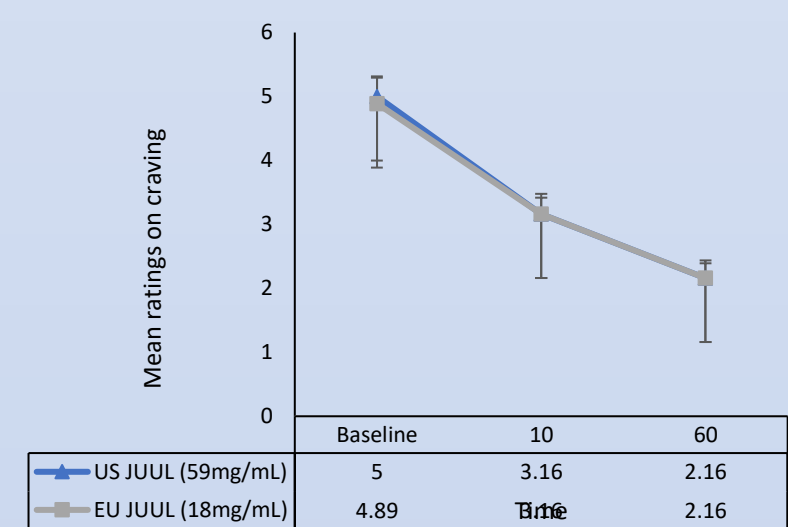


Figure 1. Mean (SEM) ratings on craving for the US and the EU-JUUL in the lab

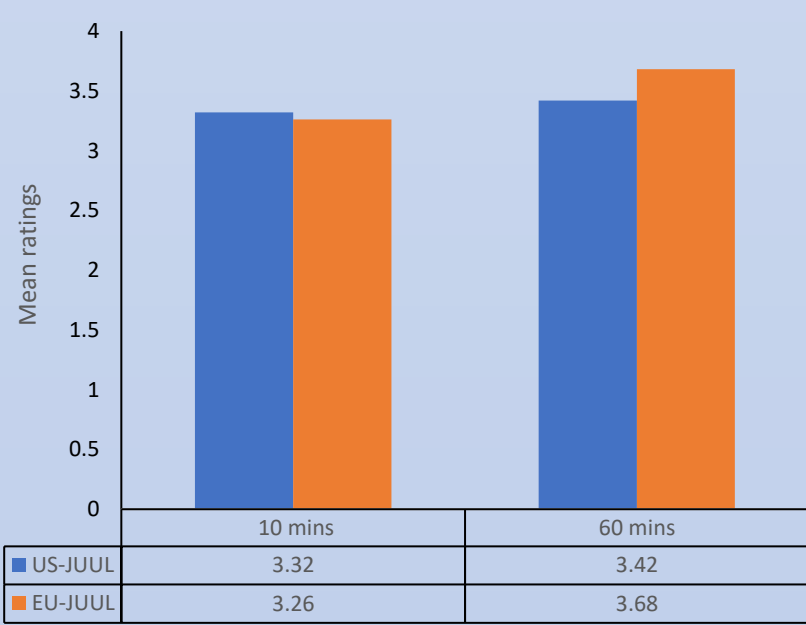


Figure 2. Mean satisfaction ratings for the US-59mg/mL and the EU-18mg/mL JUUL in the lab

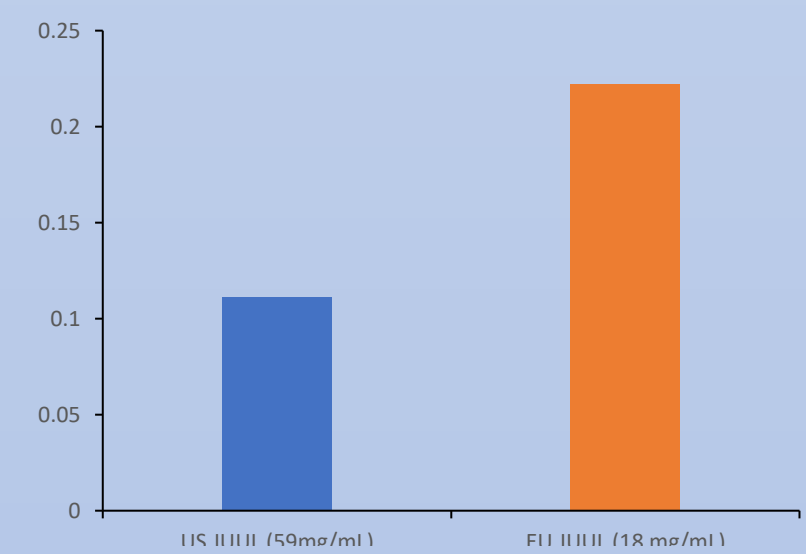


Figure 3. Mean amount of liquid consumed in the 60 minutes ad lib vaping session under the US-JUUL (59) and the EU-JUUL (18mg/mL) in the lab

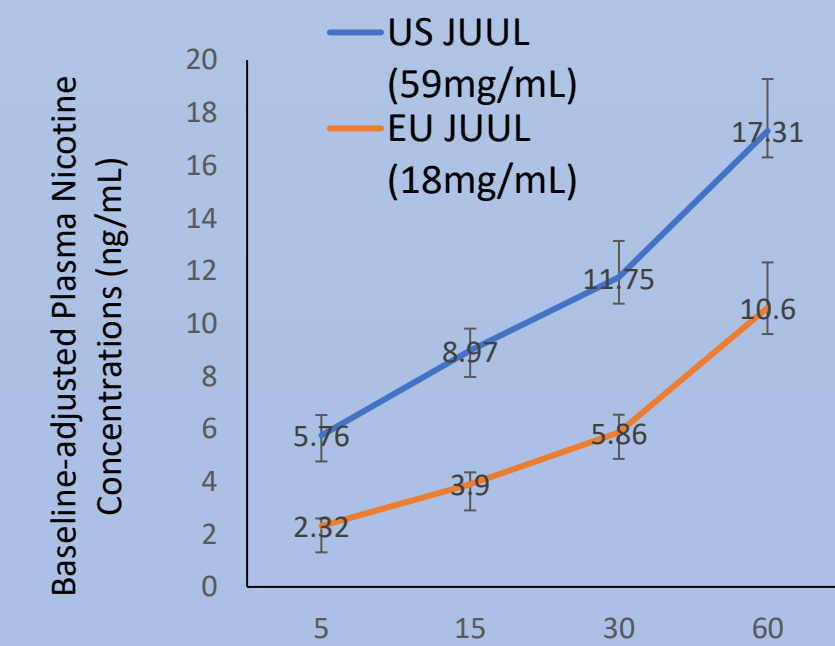


Figure 4. Plasma nicotine levels under the US- and the EU-JUUL

Discussion

- ❖ Differences in lab liquid consumption suggest attempts to compensate for lower nicotine which, although did not raise blood nicotine to equal levels, was successful in providing satisfaction.
- ❖ Lab findings could suggest that high nicotine available in the US may not be necessary for satisfaction to UK smokers, but, with the caveat of consuming more liquid. Although, reports outside of the lab describe specific contexts wherein the EU-JUUL is not always satisfying.
- ❖ Participants could not always discern the nicotine strengths they had in the lab, this may indicate an expectancy effect and explain the lack of differences between the nicotine strengths in subjective effects.
- ❖ Concerns over the perceived potential addictiveness of JUUL due to the lack of constraints in use compared to smoking seems a significant barrier to continued JUUL use which could undermine quit attempts.