

Vape satisfaction was the most common individual predictor of next day tobacco abstinence vs. dual use.

However, some predictors, such as self-efficacy and smoking urges, operated in opposite directions of effect for different individuals.



NO CONFLICTS OF INTEREST

Within-person predictors of patterns of dual e-cigarette and tobacco use: the Tracking via Repeated Assessment of Joint E-Cigarette and Tobacco use (TRAJECT) study

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Introduction

In the UK, half of vapers also smoke tobacco (dual users).¹ Only by stopping tobacco will dual users gain the full disease prevention benefits of using e-cigarettes as a substitute for tobacco. Most dual users will return to exclusive smoking within 6 months of initiation.² However, dual use can be a pathway to full cessation.³ Increasing our understanding of which factors predict movement away from dual use will help inform interventions to support tobacco abstinence. However, examining averaged data from dual users about predictors of use only tells us about average relationships between participants. This can lead to an incorrect understanding of the factors which predict *individual* dual use behaviour. To address this gap, we examined within-person predictors of a) episodes of exclusive tobacco use; b) episodes of abstinence from tobacco use, among dual users.

Methods

- A series of single-case (N-of-1) investigations (N=19; 63% female, 53% low SES) using Ecological Momentary Assessments (EMA).
- Participants were purposively sampled as smokers who, in the last 3 months, also started vaping.
- Participants completed daily measures for 90 days reporting e-cigarette and tobacco use and hypothesised psychosocial predictors of dual use.
- Generalized Additive Mixed Models (GAMM) were run to identify predictors.

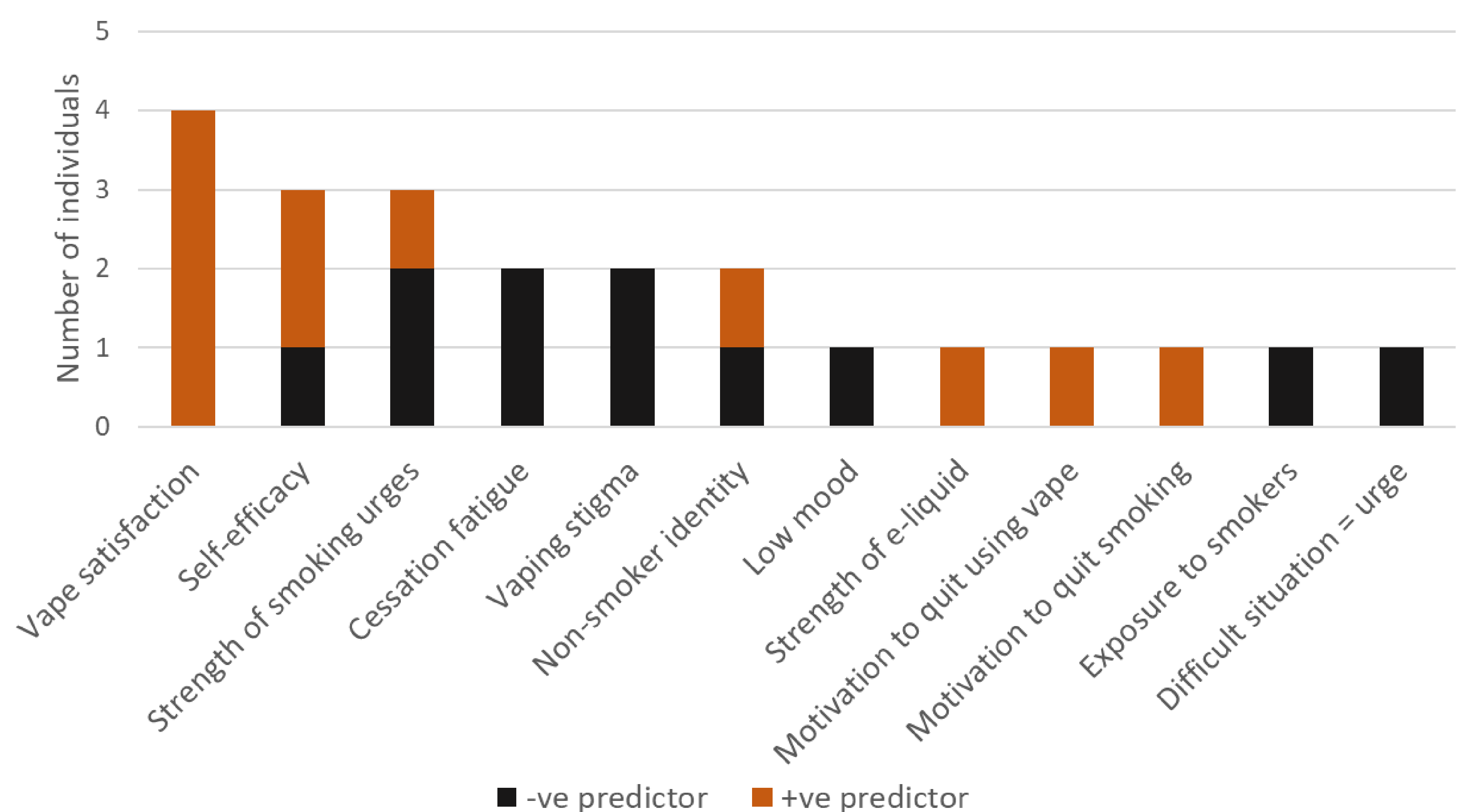
Results

- When data was aggregated, using multivariate models we found that: exposure to other vapers on a given day independently predicted a reduced risk of exclusive tobacco use the next day (OR=0.26, 95% CI 0.15, 0.44); high motivation to quit smoking (OR=2.12, 95% CI 1.48, 3.12) and satisfaction with vaping device (OR=1.92, 95% CI 1.58, 2.42) independently predicted next day tobacco abstinence compared to dual use.
- However, single case analyses identified a more varied set of predictors of both next day exclusive tobacco use and next day tobacco abstinence. These included: quitting self-efficacy, cessation fatigue, urges to smoke, strength of e-liquid, non-smoker identity, vaping stigma, smoking stigma, stress and exposure to smokers ($p < 0.05$).
- The direction of effect for some predictors were different for some participants. For next day exclusive tobacco use, the following were both positive and negative predictors, depending on the individual: strength of smoking urges, vaping stigma, cessation fatigue, motivation to quit using a vape and smoking stigma. For predictors of next day abstinence, predictors with different directions of effect included self-efficacy, strength of smoking urges, and non-smoker identity.

References

1. Buss V, Kock L, West R, et al. Smoking In England: Trends in Electronic Cigarette Use in England, <https://smokinginengland.info/> (2022).
2. Hinton A, Nagaraja H, Cooper S, Wewers M. Tobacco product transition patterns in rural and urban cohorts: Where do dual users go? *Preventative Medicine Reports*, 22;12:241-244, (2018)
3. Notley C, Ward E, Dawkins L, Holland R. User pathways of e-cigarette use to support long term tobacco smoking relapse prevention: a qualitative analysis. *Addiction*, 116;3:596-605 (2020)

Individual predictors ($p < 0.05$) - next day tobacco abstinence (vs. dual use)



Conclusions

Multiple psychological, social and environmental factors predict days of non-dual use among recent dual users and these varied substantially between individuals, including direction of effect. This knowledge reinforces the importance of providing tailored interventions to promote abstinence from tobacco among dual users.

Next steps

Triangulate findings with in-depth qualitative data to understand participant perspectives on dual use behaviour.

