

Trends in, and characteristics associated with, the concurrent use of e-cigarettes and tobacco among a sample of people who regularly use ecstasy and/or other illicit stimulants in Australia, 2023.

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The Difference is Research

Introduction

Concurrent use of e-cigarettes and tobacco is an emerging phenomenon and there is limited research investigating the characteristics and patterns of use of this population, and whether these differ to those who are using tobacco or e-cigarettes exclusively.

The scant research that is available suggests there may be important differences between these groups, with concurrent use found to be associated with greater risk of mental health problems and substance-related risk behaviours compared to people who use tobacco or e-cigarettes exclusively (1-2). As the number of people who use e-cigarettes increases in Australia, there is a need to monitor and better understand patterns of e-cigarette use, as well as the sociodemographic, substance use, and mental/physical health factors associated with concurrent use.

Aim

Using a sample of people who regularly use ecstasy and/or other illicit stimulants, this study aims to:

- Examine patterns of recent, exclusive e-cigarette, exclusive tobacco, and concurrent e-cigarette and tobacco use, from 2014 to 2023.
- Examine the sociodemographic, substance use, and physical/mental health factors associated with concurrent use of e-cigarettes and tobacco in 2023, compared to those who use e-cigarettes and tobacco exclusively.

Methods

The Ecstasy and Related Drug Reporting System (EDRS) is a national illicit drug monitoring system that has been conducted annually in all states and territories since 2003. The study surveys people who regularly (i.e., ≥monthly) use ecstasy and/or other illicit stimulants. Participants are recruited from each capital city of Australia and interviewed about their drug use and drug use-related behaviours, general and mental health, access to services, and perceived drug market trends.

While the EDRS has been conducted annually since 2003, questions regarding past six-month e-cigarette use were introduced in 2014.

Multinomial regression analyses were used to identify the factors associated with concurrent tobacco and e-cigarette use.

Table 1: Sample characteristics in 2023, stratified by exclusive e-cigarette use, exclusive tobacco use and concurrent use

Characteristics	Concurrent use	Exclusive e-cigarettes use	Exclusive tobacco use
	(N=347)	(N=146)	(N=103)
Median days of use	n=346	n=145	n=103
<i>E-cigarettes</i>	96 days (IQR=30-180)	180 days (IQR=30-180)	/
<i>Tobacco</i>	48 days (IQR=10-180)	/	180 days (IQR=24-180)
% Recent mental health problem	65	61	39
K-10 score	n=346	n=145	n=103
% K10 score ≥22 ('High'/very high' psychological distress)	51	46	46
AUDIT score	n=343	n=145	n=99
% AUDIT score ≥15 ('Alcohol dependence')	47	33	28
Ecstasy SDS	n=124	n=48	n=42
% SDS score ≥3 ('Problematic ecstasy use')	31	44	52
% Used e-cigarettes as smoking cessation tool	37	36	/
First time of nicotine exposure	n=326	/	n=96
% Within 5 minutes	7	/	18
% Within 30 minutes	12	/	18

Note. / indicates not applicable.

Results

Frequency of e-cigarette use has increased among both the concurrent (median 3 days in 2014 and 96 days in 2023) and exclusive e-cigarette (median 3 days in 2014 and 180 days in 2023) groups.

Controlling for age, gender, employment and education, our adjusted regression analysis confirmed that participants who reported being employed at the time of the interview and reported experiencing a mental health problem were less likely to report exclusive tobacco smoking, compared to participants who reported concurrent use (OR 0.345; 95% CI 0.12-0.96; $p=0.041$ and OR 0.397; 95% CI 0.17-0.94; $p=0.037$, respectively). In contrast, participants who obtained a score of 3 or more (indicating problematic ecstasy use) were more likely to report exclusive tobacco smoking compared to the concurrent use group (OR 2.327; 95% CI 1.01-5.36; $p=0.047$).

Additionally, participants who identified as female were significantly more likely to report exclusive e-cigarette use compared to the concurrent use group (OR 2.609; 95% CI 1.23-5.56; $p=0.013$).

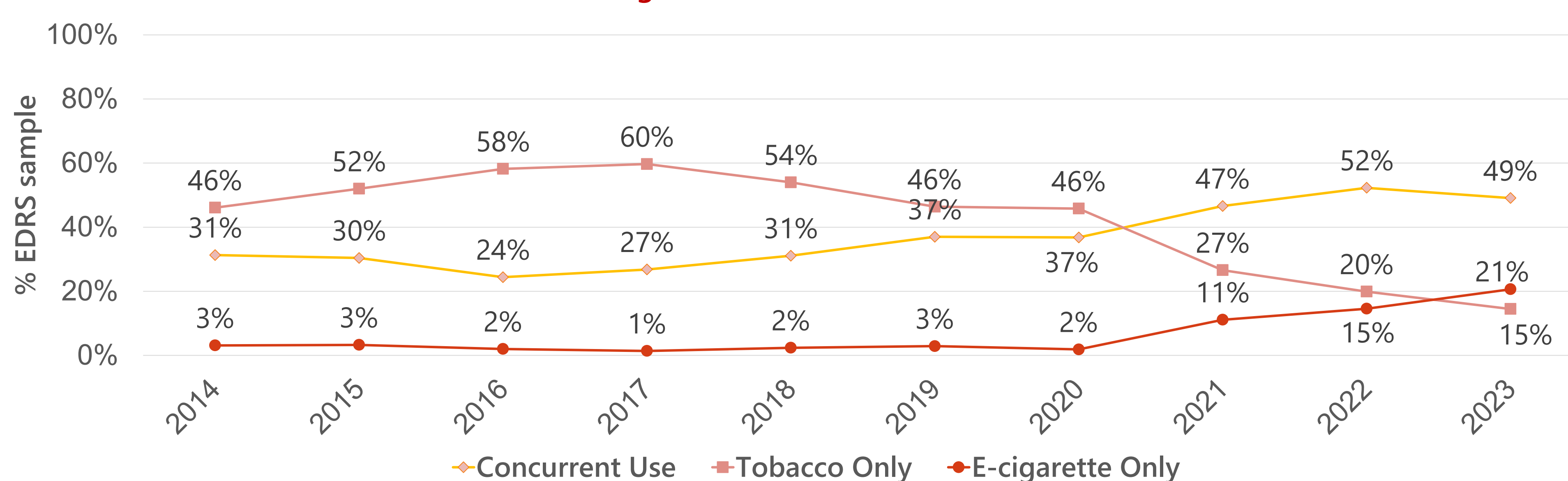
Implications/Conclusions

Our analysis indicates that concurrent use of e-cigarettes and tobacco is common among our sample of people who use ecstasy and/or other illicit stimulants.

Our adjusted regression analysis found that participants who were employed at the time of the interview and reported recently experiencing a mental health problem were more likely to use e-cigarettes and tobacco concurrently, compared to exclusive tobacco smokers. As a result, our analysis confirmed that there are important differences between participants who use tobacco and e-cigarettes concurrently compared to those who use tobacco and e-cigarettes exclusively.

It is crucial that future studies on e-cigarette use continue to monitor and understand this emerging phenomenon of concurrent use. This will enable tobacco and e-cigarette harm reduction strategies to be informed by the positive and negative health outcomes associated with concurrent use.

Figure 1: Per cent of EDRS participants who reported recent exclusive e-cigarette use, exclusive tobacco use and concurrent e-cigarette and tobacco use, from 2014-2023.



Note. Monitoring of e-cigarettes commenced in 2014, however on 1 October 2021, legislation came into effect requiring people to obtain a prescription to legally import nicotine vaping products.

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References

- (1) Feeney S, Rossetti V, Terrien J. E-Cigarettes—a review of the evidence—harm versus harm reduction. Tobacco Use Insights. 2022 Mar 18;15:1179173X221087524.
- (2) McCabe SE, West BT, Veliz P, Boyd CJ. E-cigarette use, cigarette smoking, dual use, and problem behaviors among US adolescents: results from a national survey. Journal of Adolescent Health. 2017 Aug 1;61(2):155-62.