IS IT ALL JUST ONE, BIG CLOUD OF SMOKE?

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BACKGROUND

Vaping, also known as e-cigarette use, is an increasing phenomenon worldwide. This is especially so in Aotearoa New Zealand where cross-country prevalence estimates suggest we have the second highest rates of use.

Evidence that vaping helps people to quit smoking is inconsistent. While a possible cessation pathway has been demonstrated, there is also evidence that vaping may increase the likelihood of later smoking.

Understanding the trajectory of the relationship between smoking and vaping is critical to ensure the development of appropriate policy.

METHOD

Data Source:

Times 10 – 12 of the New Zealand Attitudes and Values Study, collected across 2018-2020.

Measures:

Demographics

Age, Gender, Ethnicity, SES

Smoking & Vaping Status

"Do you currently [smoke tobacco cigarettes OR vape or use e-cigarettes]?"
Binary Coded: No (0) or Yes (1) for each question.

Analyses:

Frequencies of smoking and vaping status within the sample, with imputation of missing data points followed by weighting against NZ census population to determine estimates of population prevalence.

Sankey Plots to visualize movement between behaviours over time for those who smoked, vaped, or were dual users at T10.

Binomial logistic regressions to determine the likelihood of changing to, or taking up, the other smoking-related behaviour at each transition (T10-11 or T11-12). This was followed by a GLMM to determine the overall effect across the two transitional periods.

DISCUSSION

Our findings suggest that:

Among adults in Aotearoa New Zealand, the prevalence of smoking decreased over time while vaping prevalence increased.

People were just as likely to transition from vaping to smoking as smoking to vaping. This indicates that either pathway is equally as likely as the other and fails to support the hypothesis that vaping would primarily act as a cessation pathway.

Our findings emphasize the need to develop policies that maximize switching from smoking to vaping while limiting the transition from vaping to smoking. Policy decisions cannot simply focus on a one-directional consideration of harm reduction and instead, must take a holistic approach.

PRESENT STUDY

The increasing emergence of vaping behaviours and vape stores makes it important to consider the impact of vaping on society.

Using data from a large representative multi-wave study of adults living in Aotearoa New Zealand (the New Zealand Attitudes and Values Study), we intend to:

(i) Determine the prevalence of vaping in Aotearoa New Zealand over time; and

(ii) Explore the longitudinal pathways between smoking status and e-cigarette use
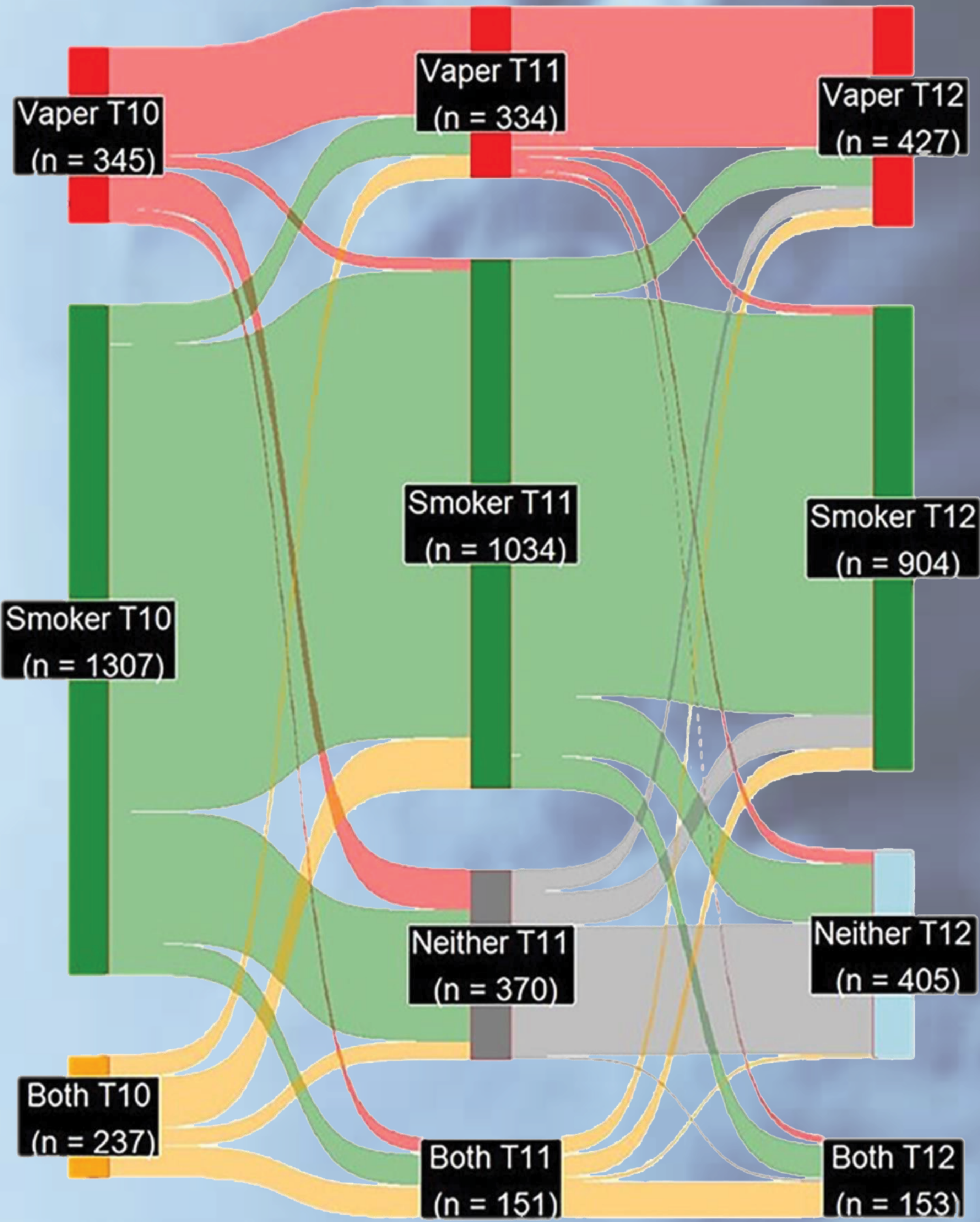
Sankey plot using sample counts to visualise the movement between behaviours over time for those who smoked, vaped, or were dual users at Time 10. Vapers refers to those who vaped at each time point; smoker to those who smoked; both to those who smoked and vaped (dual users); neither to those who did not smoke or vape.

Models showing the likelihood of transitioning from smoking to vaping or vaping to smoking								
	GLM: Transition One: T10-T11			GLM: Transition Two: T11-T12			GLMM: Overall Effect Across Both Transitions		
Predictors	OR	95% CI	*p*	OR	95% CI	*p*	OR	95% CI	*p*
(Intercept)	0.36	0.21 – 0.63	<0.001	0.62	0.34 – 1.12	0.117	0.37	0.23 – 0.61	<0.001
Smoker	REF			REF			REF		
Vaper	1.4	1.03 – 1.88	0.028	0.5	0.35 – 0.70	<0.001	0.8	0.62 – 1.03	0.085

Note. OR is the likelihood of Change; of taking up or switching to the other behaviour (1) or continuing or quitting the initial behaviour (0). An OR > 1 indicates that vapers had greater odds of taking up or switching to smoking than smokers taking up or switching to vaping. An OR < 1 indicates that vapers had lower odds of taking up or switching to smoking than smokers taking up or switching to vaping.

Model was adjusted for Age, Gender, Ethnicity, SES