

David Young<sup>\*1</sup>, Nick Wilson<sup>2</sup>, Ron Borland<sup>1</sup>, Richard Edwards<sup>2</sup>, Deepa Weerasekera<sup>2</sup>

<sup>1</sup> Tobacco Control Unit, Cancer Council Victoria, Carlton, Victoria, Australia

<sup>2</sup> Department of Public Health, University of Otago, Wellington, New Zealand

\* For correspondence: Dr David Young. Email: david.young@cancervic.org.au

## Background

Research suggests that RYO cigarettes are at least as harmful, if not more harmful, than factory made (FM) cigarettes.<sup>1</sup> Compared with FM cigarettes, RYO cigarettes have been associated with an increased risk of oesophageal cancer,<sup>2</sup> cancer of the mouth, pharynx, and larynx,<sup>3</sup> and with lung cancer.<sup>4</sup> A range of data sources suggest that RYO smoking in New Zealand (NZ) is far higher than in most other developed countries and is increasing.<sup>5,6</sup> It is important to identify the reasons why NZ smokers use RYO in order to inform tobacco control strategies, not only in NZ, but in other countries where RYO appears to be increasing (eg, the UK and the US).

## Methods

The NZ arm of the International Tobacco Control Policy Evaluation Survey (ITC Project) derives its sample from the NZ Health Survey (a representative national sample with boosted sampling of Māori, Pacific and Asian NZers). In wave 1 (n=1376 respondents) conducted in 2007/early 2008, questions were asked about RYO cigarette use. Further details of the methods (including response rates, attrition and weighting processes) are available in online reports.<sup>7</sup> To put some of the NZ results into a wider context, we analysed comparable data from Australian smokers (for methods see ref<sup>8</sup>).

## Results

**Patterns of RYO use:** Prevalence of regularly smoking RYOs was 53%, with 38% of all smokers being exclusive RYO smokers. Compared to European/others, the prevalence of RYO smoking was higher among Māori, but lower among Pacific and Asian smokers (Figure 1).



RYO use was most common among younger smokers (at over 60% for those aged less than 35 years). It was also higher among the more deprived smokers, heavier smokers, those with a relatively low intention of quitting, and those with more friends who smoke. RYO use increased more in the youngest age groups as deprivation increased (Figure 2).

Figure 1: Use of RYO tobacco among NZ smokers by ethnicity

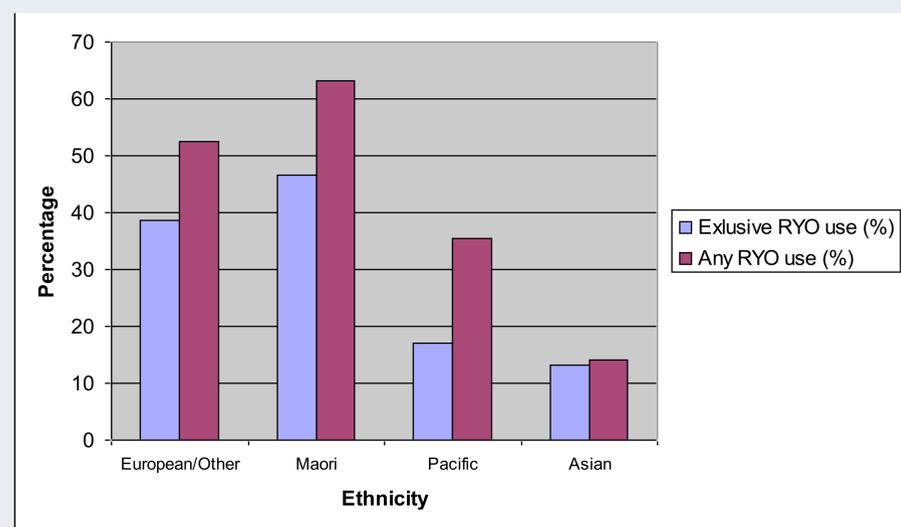
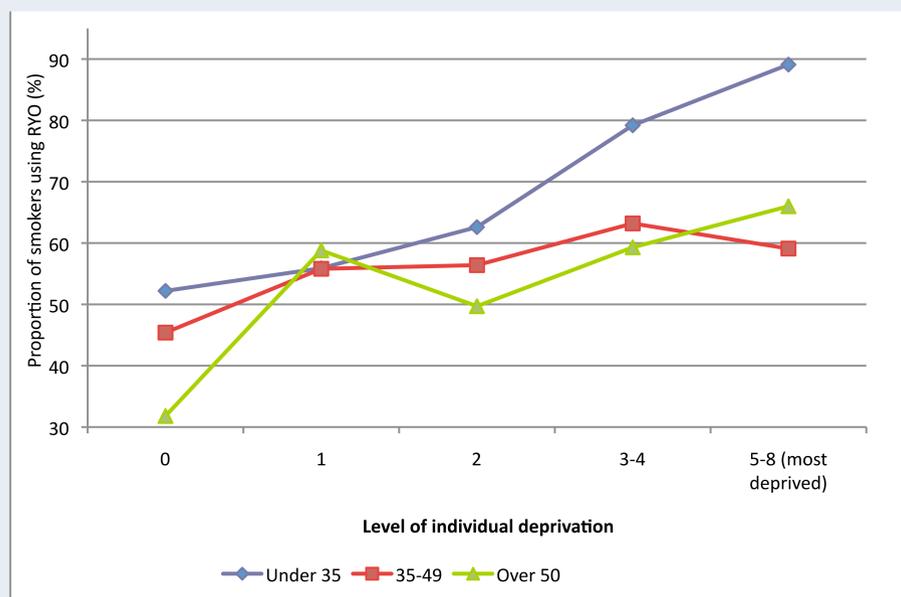
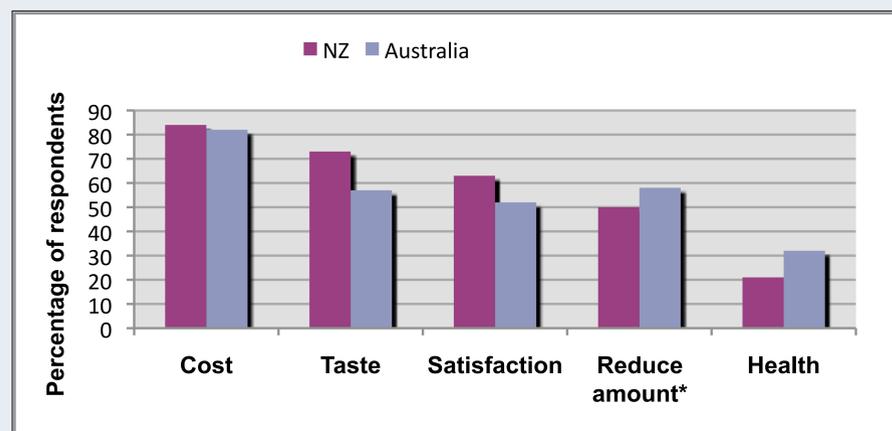


Figure 2: Proportion of NZ smokers using any RYO, by level of individual deprivation (NZiDep) and age



**Reasons for smoking RYOs:** From a list of 5 reasons (plus “other”), RYO smokers gave an average of 3 reasons for their use of RYOs. “Lower price” dominated the reasons smokers’ cited at 83% (Figure 3). While the results for cost are almost identical, NZ smokers were more likely to cite taste and satisfaction as reasons for smoking RYO, whereas Australian smokers were more likely to believe RYO smoking carried lower health risks, and that it reduces the amount smoked.

Figure 3: Reasons for smoking any RYO tobacco in NZ (Wave 1, 2007) and Australia (same ITC Survey questions, Wave 5, 2006/07)



\* “Having to roll them reduces the amount I smoke”

## Discussion

This study confirms that RYO tobacco smoking is highly prevalent in NZ and that it is particularly associated with higher levels of deprivation and of dependence. The use of RYO has the capacity to blunt price signals from tobacco taxes and for some smokers is accompanied by misperceptions that it is less hazardous to health.

Governments should consider removing any relative price advantages associated with RYO tobacco (a process the NZ Government partially performed in April 2010). They should also ensure RYO smokers are properly informed of health risks and supported to quit as strongly as other smokers. Ultimately, governments should also examine a broader range of options including removing additives (eg, flavours) from all tobacco products and eliminating all forms of tobacco marketing.

**Funding:** Health Research Council of NZ (grant 06/453) and the National Health and Medical Research Council of Australia (265903).

**Acknowledgements:** We thank the interviewees and other members of our ITC Project (NZ) Team (see: <http://www.wnmeds.ac.nz/itcproject.html>).

## References

- O'Connor et al. *Nicotine Tob Res* 2007;9:1033-42.
- Tuyns et al. *Int J Epidemiol* 1983;12:110-113.
- De Stefani et al. *Cancer* 1992;70: 679-682
- Engeland et al. *Cancer Causes Control* 1996;7:366-376.
- Ministry of Health (MoH). *New Zealand tobacco use survey 2006*. Wellington: MoH, 2007.
- Laugesen. (2006). [http://www.ndp.govt.nz/moh.nsf/pagescm/673/\\$File/tobacco-returns-analysis-tables-2006.xls](http://www.ndp.govt.nz/moh.nsf/pagescm/673/$File/tobacco-returns-analysis-tables-2006.xls)
- See reports by Wilson (2009) and by Clark (2008 & 2009) at: <http://www.wnmeds.ac.nz/itcproject.html>.
- Borland et al. *Tob Control* 2009;18:358-64.