LETTER

Smokers commonly misperceive that nicotine is a major carcinogen: National survey data

In vitro testing has shown that nicotine may play a role in making cancers more aggressive,\(^1\) but the currently available evidence does not suggest that nicotine in itself induces cancer.\(^2\) Despite this, many smokers believe that nicotine causes cancer. For example, in a USA-based study it was found that 65% of smokers believed nicotine causes lung cancer and 71% believed it caused oral cancer.\(^3\) Furthermore, some smokers regard nicotine replacement therapy (NRT) as also being carcinogenic.\(^4\) These findings are concerning since misperceptions about nicotine may result in underutilisation of NRT. Therefore, we aimed to assess these views in New Zealand (NZ) smokers, with the context being a country in which NRT is provided in a heavily subsidised form and widely distributed via the national quitline service.

Data were collected through the NZ arm of the International Tobacco Control Policy Evaluation Survey (ITC Project) which derives its sample of smokers from the NZ Health Survey (a representative national sample). From this sample we surveyed adult smokers in two survey waves (n=1376 and n=923) 1 year apart (with wave 2 in 2008/early 2009). Here we focus on those who completed both surveys (to facilitate comparisons over time). Further details of the methods, including response rates, attrition and weighting processes, are available in online reports (at: http://www.wnmeds.ac.nz/itcproject.html).

When asked if ‘the nicotine in cigarettes is the chemical that causes most of the cancer?’, most smokers in wave 1 (52.6%) said that it was true, 36.7% said it was false (the correct answer) and 10.7% could not say. The proportion answering ‘true’ was fairly similar in wave 2 at 52.1%. In a multivariate model (that adjusted for demographics, socioeconomic position, mental health and smoking-related beliefs and behaviours), certain groups of smokers were significantly more likely to believe that nicotine was carcinogenic. These included older smokers (≥50 vs <55 years); Māori smokers (vs European/other); adjusted OR (aOR)=1.77, 95% CI 1.22 to 2.58); and Asian smokers (vs European/other, aOR=3.25, 95% CI 1.35 to 7.83). One of two forms of financial stress was significantly associated with this misperception (aOR=1.57, 95% CI 1.03 to 2.41 for not spending on household essentials) but the individual and small area deprivation measures were not. Of 13 other variables considered (covering mental health, smoking beliefs and behaviours), only having a higher AUDIT score (reflecting an increased risk of hazardous alcohol use), was significantly associated with this misperception.

The finding that smokers in this national sample commonly have misconceptions about the carcinogenicity of nicotine is consistent with findings from the USA and the UK. This population of smokers also commonly have misperceptions around the relative harmfulness of ‘lights’, ‘roll-your-own’ tobacco, menthols and smokeless tobacco.\(^5\) How best to address all such misperceptions is complex, but at least for the nicotine and cancer issue evaluation work could be considered on: (1) inclusion of this information as part of warning labels on tobacco packets; and/or (2) mass media campaigns that highlight the relatively safety (and effectiveness) of NRT.

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