

# Individual and conjoint factors associated with beliefs about the harmfulness of nicotine replacement therapies relative to combustible cigarettes among people who smoke: Findings from the 2020 ITC Four Country Smoking and Vaping Survey

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## Abstract

**Introduction:** This study examined individual and conjoint factors associated with beliefs about the harmfulness of nicotine replacement therapies (NRTs) relative to combustible cigarettes (CCs).

**Methods:** Data analyzed came from 8,642 adults (18+ years) who smoked daily/weekly and participated in the 2020 ITC Four Country Smoking and Vaping Survey in Australia (n=1213), Canada (n=2633), England (n=3057), and United States (US, n=1739). Respondents were asked: Compared to smoking cigarettes, how harmful do you think nicotine replacement products are? Responses were dichotomised into much less vs. otherwise for analysis using multivariable logistic regression models, complemented by decision-tree analysis to identify conjoint factors.

**Results:** Percentages believing that NRTs are much less harmful than CCs were 29.7% (95% CI:26.2-33.5%) in Australia, 27.4% (95% CI=25.1-29.8%) in England, 26.4% (95% CI=24.4-28.4%) in Canada and 21.7% (95% CI=19.2-24.3%) in the US. Across all countries, believing nicotine is not at all/slightly harmful to health (aOR=1.53-2.27), endorsing nicotine vaping products as less harmful than CCs (much less harmful: aOR=7.24-14.27; somewhat less harmful: aOR=1.97-3.23), and possessing higher knowledge of smoking harms (aOR=1.23-1.88) were individual factors associated with increased odds of believing NRTs are much less harmful than CCs. With some country variations, these nicotine-related measures also interacted with each other and socio-demographic variables to serve as conjoint factors associated with the likelihood of accurate NRT relative harm belief.

**Conclusions:** Many people who regularly smoke cigarettes are unaware that NRTs are much less harmful than cigarettes. Additionally, beliefs about NRTs relative harmfulness appear to be influenced by both individual and conjoint factors.

**Implications:** This study demonstrates that despite past efforts to educate people who smoke about the harms of NRTs relative to CCs, misperceptions around the relative harmfulness of NRTs remain substantial. In all four studied countries, subgroups of people who smoke regularly who are misinformed about the relative harmfulness of NRTs, and who may be reluctant to use NRTs for smoking cessation can be reliably identified for corrective interventions based on their understanding of the harms related to nicotine, NVPs and smoking along with sociodemographic markers. The identified subgroup information can be used to prioritize and inform the development of effective interventions to specifically address the gaps in knowledge and understanding of the various subgroups identified. Our results suggest these may need to be tailored for each country.

## Recommended Citation

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