The Mexico SimSmoke tobacco control policy model: Development of a simulation model of daily and nondaily cigarette smoking

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Abstract

Background: Nondaily smoking has been on the rise, especially in Mexico. While Mexico has strengthened its tobacco control policies, their effects on nondaily smokers have gone largely unexamined. We developed a simulation model to estimate the impact of tobacco control policies on daily and nondaily smoking in Mexico. **Methods:** A previously validated Mexico SimSmoke model that estimated overall trends in smoking prevalence from 2002 through 2013 was extended to 2018 and adapted to distinguish daily and nondaily smoking prevalence. The model was then validated using data from Mexican surveys through 2016. To gauge the potential effects of policies, we compared the trends in smoking under current policies with trends from policies kept at their 2002 levels.

Results: Between 2002 and 2016, Mexico SimSmoke underestimated the reduction in male and female daily smoking rates. For nondaily smoking, SimSmoke predicted a decline among both males and females, while survey rates showed increasing rates in both genders, primarily among ages 15–44. Of the total reduction in smoking rates predicted by the model by 2018, tax policies account for more than 55%, followed by health warnings, cessation treatment, smoke-free air laws, and tobacco control spending.

Conclusions: Although Mexico SimSmoke did not successfully explain trends in daily and nondaily smoking, it helps to identify gaps in surveillance and policy evaluation for nondaily smokers. Future research should consider appropriate measures of nondaily smoking prevalence, trajectories between daily and nondaily smoking, and the separate impact of tobacco control policies on each group.

Recommended Citation

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