From Content to Clouds: The Bidirectional Associations between Tobacco-Related Content on Social Media and Youth Tobacco Use

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Introduction: The increase in youth vaping remains a public health concern, with social media playing a significant role in promoting e-cigarettes. Exposure to vaping-related content influences initial e-cigarette use, however youth already engaged in e-cigarette use maybe more susceptible to seeing e-cigarette advertisements online. This study examines the bi-directional association between exposure to e-cigarette content on social media and e-cigarette use.

Method: Data were drawn from the using the Population Assessment Tobacco and Health Study, a nationally representative, longitudinal cohort study of US youth (aged 12-17). Respondents with data at two waves (Wave 5 and 6) were included in longitudinal analysis (n=12,251).

Results: Wave 5 exposure to e-cigarette advertisements was significantly linked to past 30-day use in Wave 6 (OR=2.06, 95% CI=1.61,2.62). Additionally, individuals who used e-cigarettes in the past 30 days during Wave 5 were more likely to encounter e-cigarette advertisements on social media in Wave 6 (OR=1.45, 95% CI=1.11,1.90). A dose-response relationship was also observed; compared to no exposure, the frequency of seeing e-cigarette advertisements in Wave 6 was associated with past 30-day e-cigarette use in Wave 5 ($OR_{\text{daily/near daily exposure on social media}}$=2.55; $OR_{\text{weekly exposure}}$ =1.99; $OR_{\text{occassional exposure}}$=1.18).

Discussions and Conclusions: While exposure to e-cigarette advertisements is associated with an elevated risk of vaping, these data showed that those who are already vaping are being exposed to more e-cigarette advertisements. The findings suggest a potentially reinforcing cycle where individuals already using e-cigarettes are targeted or more frequently encounter e-cigarette advertisements, which could enhance their usage and make quitting more difficult. Public health strategies may need to focus on breaking this cycle by regulating e-cigarette advertising exposure on platforms frequented by youth.

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