

Changes in route of administering cannabis over time: A systematic review and meta-analysis of US and Canadian studies.

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Introduction: Cannabis legalization has resulted in the rapid development of the cannabis market. This expansion is characterized by declining product prices, an increased variety of products, and different cannabis consumption methods. There remains a significant gap in our understanding of how consumption and product use have evolved over time. This systematic review aimed to estimate the prevalence of different cannabis routes of administration (RoA) and cannabis product use over time in the US and Canada.

Method: PubMed, Embase, Scopus, and Web of Science were searched for prospective studies in August 2023. Data on the study characteristics, ROA, product attributes, and prevalence estimates were extracted from each study. Risk of bias was assessed using the Newcastle-Ottawa Quality Assessment Scale. Multi-level random effects meta-analysis were conducted to obtain the pooled lifetime, 12-month, and 30-day prevalence.

Results: 74 studies were included in the review (n=1,200,453 respondents). Fifty-five percent of the included studies (41 studies) had focused on the youth population (12-18 years old). In most studies, smoking remained the dominant method of cannabis use. However, preliminary results from meta-analysis showed that between 2016 and 2019, the pooled prevalence of smoking cannabis decreased (from 57.2% to 46.9%), while the use of vaping (from 13.6% to 39.5%) or edible (from 18.6% to 29.6%) routes increased among people who are currently using cannabis. Eleven studies also reported that respondents used more than one ROA (range: 33-73% respondents).

Discussions and Conclusions: This study found evidence of a shift in patterns of consumption from smoking to vaping and edible cannabis. Data for other routes of administration like dabbing or topical use, remains scarce. This trend also suggests a possible change in public perceptions and the need for public health policies to adapt to these consumption patterns to minimize the harms associated with cannabis use.

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