

Home delivery of legal intoxicants in the age of COVID-19

Accelerated by the COVID-19 pandemic, the home delivery of alcohol and cannabis is poised to become entrenched in consumer habits and public health regulations in numerous countries around the world. The addiction field should further investigate the implications of this trend for health and prevention policy by reimagining and scaling-up availability research.

The COVID-19 pandemic has left consumers disinclined or unable to venture out for alcohol and cannabis (where legal), increasing demand for home delivery services. Given the scale to which this business has grown, home deliveries could become an established source of legal intoxicants, along with brick-and-mortar outlets, in many countries. This phenomenon has been notably under-researched by addiction scientists despite its implications for health, research, and prevention policy.

Alcohol and cannabis home delivery were expanding before COVID-19. Alcohol delivery was already thriving in the UK, US, Canada, France, China, Japan, Argentina, Philippines, Thailand, and Australia [1–5]. In China and the UK, more than 50% of consumers purchased delivery alcohol at least monthly in 2018 [1]. The pandemic, however, is accelerating this trend in ways that could alter consumer habits for good. In Mexico, Kenya, the US, and Canada, alcohol delivery companies have reported manifold increases in sales during the pandemic, including among first-time users [6–8]. Although illegal in most countries, cannabis delivery is abundant in several US states and Canadian provinces, with California maintaining the world's largest retail market. The online finder, Weedmaps, reports that only 450 California neighborhoods (census block groups) have brick-and-mortar cannabis outlets yet home delivery is currently available in 22 500.

Prompted by COVID-19, many governments are changing longstanding public health regulations designed to limit availability of legal intoxicants. In parts of the UK, Australia, Canada, and most US states, governments have relaxed alcohol regulations for off-premise sales, takeout, and home delivery, either by affirmatively allowing this or by not enforcing existing prohibitions [9–11]. These measures may skirt open container laws and delivery permit requirements. Complete or partial bans on alcohol sales have been implemented during pandemic lockdowns in some places, including India, South Africa, Greenland, and Mexico yet this can increase demand for delivery [3, 12]. Post-pandemic, delivery businesses could

constitute a new industry stakeholder pressuring governments to maintain newly relaxed policies.

The growing preponderance of home delivery, and changing government regulations, could have profound implications for public health. Yet empirical research examining impacts on consumption, health, or social problems is sparse. A Google Scholar search of “(‘home delivery’ OR ‘online order’) AND (alcohol OR cannabis OR marijuana)” yielded only two relevant peer-reviewed studies in the first 200 hits [13, 14]. We propose four recommendations to address this gap.

First, researchers should reexamine evidence on the causal effects of alcohol and drug availability in light of home deliveries. We need conceptual models predicated on the possibility that home delivery could fundamentally alter patterns of alcohol and cannabis consumption. The established impacts of brick-and-mortar outlets may no longer hold or could vary by the extent of available delivery. Conversely, delivery effects may depend on the density and perceived convenience of existing brick-and-mortar outlets, making regions that restrict density (*e.g.*, those with government retail monopolies) more conducive to delivery becoming an important form of availability from a public health perspective. Delivery could replace or complement sales through brick-and-mortar outlets, with differing implications for population-level consumption. These changes will likely depend on factors not typically measured in availability research, such as digital literacy and social media penetration.

Second, by changing who is consuming, how much is consumed, and where it is consumed, home delivery could alter the epidemiology of alcohol and cannabis harms. Researchers should consider new types of harms—for example, crimes victimizing drivers transporting cash and valuable goods. If home delivery substitutes for on-premise consumption (researchers should evaluate this), the distribution of problems could shift from public environments (*e.g.*, motor vehicle accidents, bars fights) towards private venues (*e.g.*, child maltreatment in homes). Home-based consumption and corresponding harms are more likely to be overlooked and could pose challenges for epidemiologic surveillance because “hidden” problems tend to be underreported [15]. For now, researchers will likely struggle with disentangling the impact of delivery businesses on alcohol- and drug-related harms from the secondary effects of the pandemic itself (*e.g.* increased loneliness).

Home delivery requires researchers to rethink methods for availability research, currently dependent on geospatial analyses of brick-and-mortar outlets. Proximity-based methods for linking harms to outlets in physical space have no clear analogue for delivery. Direct-observation outlet censuses are the gold standard for research on brick-and-mortar outlets [16]. Yet the universe of home delivery transactions cannot be fully observed and services may not deliver to fixed regions. If the regions served by delivery businesses can be mapped, spatial risk surface modeling strategies should be considered [17]. Crowd-sourced directories—*e.g.* Weedmaps, Tipple—can capture brick-and-mortar outlets and should be explored for measuring delivery [16]. Data from delivery service manifests, state-mandated track-and-trace systems, and deliverer cellular location data should be explored too.

Finally, researchers should engage proactively with policymakers about the public health implications of home delivery and policy approaches to compensate. WHO recommends maintaining alcohol availability restrictions during the pandemic [18]; expanding home delivery goes directly against this. Where home delivery undermines existing regulations, evidence to guide adaptations is limited. Cross-national research comparing diverse regulatory schemes could help address this gap. Unsupervised transactions present challenges for enforcing minimum age laws [13]. Indeed, the Philippine and Thai governments plan to ban online alcohol sales due to concerns about underage drinking [3]. Responsible server laws banning service to intoxicated persons must be re-envisioned [14]. In one Australian study, 20% of alcohol delivery patrons reported using the service because they were too intoxicated to drive and 36% said that without the service, they would have had to stop drinking [5]. Amplified pricing and marketing controls should be considered as potential levers to mitigate these concerns [19].

In many parts of the world, the COVID-19 pandemic is accelerating a pre-existing trend towards alcohol and cannabis home delivery while prompting loosened regulations that could prove difficult to roll back. Although some increases due to the pandemic will wane, home delivery could be here to stay. Addiction researchers should gear up to study the consequences. This calls for rethinking alcohol- and drug-availability theory, while transforming existing brick-and-mortar geospatial approaches using novel data streams and methods. Tackling fundamental questions of causal inference presented by deliveries could inform availability theory and suggest innovations for prevention policy.

Declaration of interests

None.

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