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COMMENTARY

A call for greater policy and regulatory coherence for an expanding menu of legal psychoactive substances

Industrialised countries in the Americas, Oceania and Europe are making substantial changes in how they control and regulate 'legal', non-medical (or 'recreational') psychoactive substance use. Alcohol and tobacco products have been legal commodities for centuries in Canada, the United States, Australia and New Zealand [1–3]. Non-medical cannabis use and supply is now legal in Canada, Uruguay and multiple US states, and similar policy changes are imminent or under serious discussion in New Zealand and Mexico, as well as several European countries [4–6]. Hence, there are now (or soon will be) three major substance groups legally available for population-wide use, and related distribution and production [7]. Overall, tobacco control policies have become stricter, alcohol policies remain steady or have become somewhat more liberal, and cannabis policies are shifting towards liberalisation. There are distinct discrepancies and differences between the policy approaches for the three substance groups which do not reflect the relative harm profiles of the substances. On the assumption that the central interest of regulation is to improve public health, we make the case for a more coherent, better integrated, science-informed and sensible policy and regulatory approach to how these psychoactive substances are governed [8–10].

First, a summary of the main risks and adverse outcomes related to the three substance groups is apposite. Both alcohol and tobacco use contribute extensively to the population-level burden of disease, much of which relates to their impact on mortality and morbidity from chronic exposure (e.g. cancers, cardiovascular, pulmonary or liver disease) [11–15]. Both can cause substance-related disorder (dependence) in a sizeable minority of users. While tobacco use has fewer *acute* adverse outcomes, alcohol can produce harms related to intoxication (e.g. hospitalisations) and injuries and/or death. Both alcohol (e.g. through violence, reproductive harms) and tobacco (e.g. through environmental tobacco smoke exposure) can produce extensive harm to others [16,17]. In contrast, the quantified disease burden for cannabis is substantially lower than that for alcohol and tobacco. This is, in part, because of its lower prevalence of use in the population and, in part, because cannabis is rarely implicated directly in premature mortality [18,19]. Cannabis use can produce chronic adverse health outcomes, predominantly in the form of use disorders (e.g. dependence) and injuries arising from impairment (including some deaths from motor-vehicle accidents), pulmonary disease, and both acute and long-term adverse neurocognitive and mental health outcomes (e.g. psychotic episodes or disorders and possibly depression) [20,21]. Most of these adverse outcomes occur among intensive (i.e. daily or near-daily) users [22–24].

We illustrate the current policy landscape for the three substance groups by examining regulations in Canada, specifically the province of Ontario, where all three drug classes are now legal for adults to use, and in New Zealand, where two (alcohol, tobacco) are now legal and one (cannabis) is proposed to become legal by way of a referendum to be held in late 2020. We selected the jurisdictions for exemplary illustration, in part because of their wider socio-cultural similarities, and also because of the authors' in-depth familiarity with their policy details and environments.

In Ontario, Canada some policy regulations of interest are federal, but overall most are set at the discretion of provincial jurisdictions within a federal system. The minimum legal age for alcohol use and purchase is 19 years. Alcohol may not be used anywhere in public. It can only be used in private residences or properties and on licensed premises (e.g. restaurants, bars or public events with liquor licenses). Discussions are under way that would allow public alcohol consumption in select public areas (e.g. parks). Alcohol can legally be procured (in person or by mail) from provincially operated 'liquor stores' and other licensed, designated outlets; moreover, retail sales (of beer and wine) have recently been allowed in general supermarkets. People may 'home-brew' alcohol, as long as it is only for private/non-commercial purposes [25–27].

The minimum legal age for tobacco use and purchase is also 19 years. Tobacco products may not be used in any public indoor space (including workplaces,

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etc.). Use is generally legal in open public spaces (with some restrictions, e.g. around building entries, municipal smoking bans in parks), and in private premises or spaces (including cars) it is not regulated. Tobacco products can be purchased in a wide variety of non-specific retail stores holding a tobacco sales permit, such as corner-stores, service stations, supermarkets, smoke shops and via Internet sales [28,29].

The (federal) *Cannabis Act* allows Canadian provinces to determine and set key regulations for legalised cannabis; the minimum age for non-medical use of cannabis in Ontario is set at 19 years. Cannabis may be used in private residences (except where subject to possible other restrictions, e.g. landlord/tenancy laws), vehicles, boats, designated smoking areas and pretty much all public areas (e.g. sidewalks, parks) where tobacco smoking is allowed. Cannabis can legally be bought in provincially licensed bricks-and-mortar 'cannabis retail stores' (of which only a small but growing number exist) or ordered online from the 'Ontario Cannabis Store' (provincial wholesale/retail authority). Cannabis can also be produced for personal use by home-growing (with a limit of four plants per household). There is a maximum possession limit of 30 g of dried cannabis (or the equivalent for other product forms) [30,31].

In New Zealand, the minimum legal age for alcohol purchase is 18 years but there is no restriction on age of alcohol use [32]. Alcohol may be used in public and on licensed premises (e.g. restaurants, bars or public events with liquor licenses). Alcohol can legally be purchased (in person or by mail) from licensed and operated 'liquor stores' and supermarkets. People may home-brew alcohol, as long as it is only for private/non-commercial purposes. There are no possession limits.

Tobacco use and purchase is legal from 18 years of age [33]. Tobacco products may not be used in workplaces but may generally be used in open public spaces (with some restrictions, e.g. around building entries or in select areas). They can be used in private residences or spaces (including cars, although this is likely to be banned). Tobacco products can legally be purchased in general retail facilities, including corner stores, service stations, supermarkets, tobacco shops and via the Internet. There are no possession limits [33].

Under the proposed regulations for cannabis legalisation (if the public referendum in 2020 supports the policy change), the minimum legal age for non-medical cannabis use would be 20 years [34]. Furthermore, cannabis use will not be legally permissible in public. It could only be used in private residences (where however it may be subject to other restrictions) and in 'designated premises' for cannabis use (to be further defined). Cannabis products would be legally sold in licensed, physical stores. It may also be self-grown for personal use by 'home production', limited to two plants per legal user. There would be a legal limit of 14 g for personal cannabis possession.

In both Ontario and New Zealand, there are thus substantial inconsistencies between the regulation of use and availability of the three major substance groups that are not easy to reconcile with scientific evidence or public health objectives. First, while the age limits for use are the same across substance groups in Ontario, in New Zealand, which has no age limit for alcohol use, the government is proposing a higher age limit for cannabis use *and* sales than for alcohol sales.

Second, in both jurisdictions, there have been longstanding efforts to move tobacco smoking out of homes principally to reduce hazardous tobacco smoke exposure to others, such as children and non-smoking household members [35,36]. However, use of cannabis—a substance that most users consume by smoking—is proposed to be restricted to private home environments in New Zealand, despite environmental hazards, as exist for tobacco [37–39]. Unlike tobacco, the use of cannabis in public would be categorically disallowed. Under previous regulations established by the previous provincial government, Ontario had also categorically disallowed any use of cannabis in public spaces; half of the 10 Canadian provinces (including Québec) presently have and practice this use restriction.

Third, some forms of alcohol, a substance that causes extensive adverse health outcomes, including numerous deaths primarily among chronic users, can be purchased from numerous designated specialty as well as general retail outlets (e.g. supermarkets) in both New Zealand and Ontario [7,40–43]. Such high, and recently increasing, levels of general access have been accompanied by price reductions for selected alcohol products (e.g. Ontario's recent 'buck-a-beer' initiative, which allowed sales of '$1 beer' through targeted tax reductions) [44]. By contrast, physical cannabis retail is restricted to a relatively small number of exclusive 'cannabis-only' stores [45].

This landscape of product retail and supply for consumers is intrinsically inconsistent. While primary retail distribution of cannabis products is strongly limited, 'home growing' of cannabis, which comes with attendant environmental health, exposure and diversion risks, is permitted without licensing or monitoring [46–48]. Furthermore, while alcohol and cannabis products are partially or fully distributed through designated retail systems, tobacco products are sold mainly in non-designated general retail environments (e.g. corner-stores, supermarkets, service stations) alongside general consumer products [49–51].

These examples illustrate the lack of coherence and proportionality in key regulations for consumer

availability and use of the three substance groups. The more hazardous substances for public health (i.e. alcohol and tobacco) are overall more accessible for purchase and permitted for use than the less hazardous substance (cannabis). This incoherence is especially difficult to defend when compared with the differential adverse health risks for these three substance groups [52,53]. The reasons for the incoherence are not easy to justify. Existing use and retail regulations for alcohol and tobacco, and more recently for cannabis, have each individually been influenced by a variety of factors, such as local culture and social norms, public health advocacy, economic and industry interests and the politics of the day [54–58].

There is no convincing scientific reason why a person should have to be older—especially by merely 1 year—to legally use or buy cannabis, than alcohol; if anything, comprehensive, targeted prevention efforts would be required to delay any (and especially intensive) use of either substance as much as possible into early adulthood [59–62]. Nor is there a compelling reason why tobacco (or alcohol) may be used in public spaces while cannabis use is restricted to private homes only [17,63,64], as is proposed for New Zealand and the case in other Canadian provinces. And there is no good reason why alcohol and tobacco products are widely available for sale in multiple retail settings whereas cannabis retail is limited to a small number of specialised distribution outlets, while at the same time, home-production is legally possible and unmonitored. Moreover, it is difficult to see how everyday people, or consumers, might be expected to readily understand or comply with these inconsistent sets of regulations and restrictions [65].

We need a more coherent, integrated, proportionate, science-informed and public health-oriented policy and regulation approach to all three types of psychoactive substances. Others have previously made similar calls [66,67]. Such an integrated approach, if based on relevant scientific data, could lead to a consensus on a sensible, legal age limit for all three substance groups (rather than pretend that there are scientifically valid reasons for the differentiations currently in place). This would facilitate a more universal approach for education, interventions and monitoring [68–70].

Another goal would be a more consistent and integrated retail availability of all three substances for general consumption. This, for example, could occur in the form of a single, combined, strictly regulated and government-controlled distribution system—a sort of conglomerate 'pharmacy'-type retail system for non-medical, psychoactive substances, in which the principal aim would be to prevent commercial interests undermining public health-guided objectives; for example, regarding products sold, retail distribution practices, promotion or marketing, and so on [48,50,71–75]. This model would permit consumers centralised or integrated retail access to regulated products from any of the three substance groups, where they furthermore could be professionally informed about the properties and risks of the individual products, as well as of substance co-use and interactions relevant for adverse health risks. The latter is an important issue, given the high prevalence of co-use between all three substance groups [37,76,77]. By way of illustration, existing pharmacy systems for prescription drugs centralise and integrate the retail distribution of a multitude of potent prescription drugs with different pharmaceutical and risk profiles that no one would sensibly make available in separate distribution systems. Rather, the main goals of the pharmacy system include product quality, consumer information and management of drug interactions [78–81].

Perhaps the least sensible regulations concern the differential restrictions on use of the three substance groups. While a principal aim of public health-oriented restrictions on where any of the three drug classes can be used should limit the adverse exposure of non-users, regulations ought also to consider 'social dimensions' of use. These ought to reflect a need to compromise between the competing interests of users and the protection of non-users, and so unavoidably involve value judgments [4,82–84]. There would be, as a primary example, good public health-oriented reasons for a policy-coherent approach to restrict and phase out the availability of 'smokable' products such as tobacco and cannabis in the interest of both consumers and public protection, and to guide users to the use of 'safer' products for health [22,85,86]. These choices, however, should be based on science- and public health-informed proportionality and consistency. All three substance groups may cause substantial harm to others (e.g. from smoking, impairment or violence, dependence). In this context, it is arbitrary to limit cannabis use to private home spaces only, while tobacco and alcohol may be used in public settings. This restriction appears to be driven more by social morality or political motives than public health considerations [87–89].

In conclusion, the current situation of legal substance regulation, as illustrated for the exemplary cases of Ontario, Canada, and New Zealand, does not consistently or well consider or serve public health goals. While comprehensive reform will likely not occur overnight, we nonetheless hope that highlighting these inconsistencies will stimulate debate among key science and policy audiences, with a view to achieving a more coherent regulatory system for these three widely used drug classes, all legally available or soon to be so.

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Conflict of Interest

The authors have no conflicts of interest.

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