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Review of Health Impact Assessments Informing Alcohol, Tobacco, and Marijuana Prevention and Control Policies

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Abstract

Background: Health impact assessments (HIAs) are used to systematically analyze the potential health impacts of proposed policies and provide recommendations that promote positive impacts and mitigate adverse impacts. This study reviewed HIAs conducted in the United States, England, and New Zealand on policies related to alcohol, tobacco, and marijuana

Methods: Information was abstracted from relevant HIAs identified from multiple web sources using a set of predetermined criteria and key data elements. Four case studies were selected to highlight methods and impacts for conducting HIAs

Results: Twenty-two HIAs from U.S., England, and New Zealand conducted from 2005-2019 were retained for the final analysis. Policies assessed included zoning laws and density for alcohol and tobacco outlets, raising legal tobacco purchasing age to 21, prevention of underage drinking, and marijuana regulations. These HIAs used methods such as literature review, local data, and stakeholder interviews to characterize the direction, magnitude, intensity, likelihood, and distribution of potential health effects. Stakeholder input was obtained on how to mitigate negative and promote positive health effects that could result from the proposed policy. The HIA results were provided to decision-makers to encourage them to consider health impacts in the decision process.

Conclusion: HIAs are a promising tool for policymakers and stakeholders to assess the potential health impacts of proposed alcohol, tobacco, and marijuana policies. Our review is consistent with prior reports from other sectors suggesting that HIAs may increase awareness of health impacts among decision-makers, improve collaboration among stakeholders, and have direct impacts on policy decisions.

Keywords: Health Impact Assessment, Substance Abuse Policy, Alcohol, Tobacco, Marijuana, Cannabis

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Introduction

Substance abuse disorders of both legal and illegal substances are significant health concerns in the United States. Today, 6% of American adults age 18 or older have an alcohol use disorder, 3% of American youth age 12-17 suffer from alcohol abuse [1], 14% of adult Americans are current smokers [2], 10% of US adults use marijuana on a regular basis, and approximately 30% of marijuana users are considered to have an abuse disorder [3].

Given the magnitude of substance abuse disorders in the United States and the severe health and economic consequences of such

disorders, effective public health policies are needed to prevent and reduce the consequences of substance abuse. To date, many policies related to alcohol, tobacco, and marijuana have been proposed and implemented in various jurisdictions.

Alcohol related policies focus on possession and consumption of alcohol by minors, the use of fake IDs, the availability of alcohol at various retailers, and the use of excise taxes [4-6]. Tobacco related policies include prohibiting the sale of tobacco to individuals under age 21 [7], increasing tobacco excise taxes [8 & 9], strengthening tobacco warning labels, passing smoke-free air laws, and restricting tobacco advertising and promotion [10].

Laws permitting use of medical and/or recreational marijuana have been passed by 33 states and the District of Columbia [11-13]. Such laws relate to the growing, distribution, and possession of marijuana, the medical conditions for which marijuana may be prescribed, advertising policies, and prevention of unintentional or intentional use of marijuana by children and adolescents [11, 12 & 14]. Finally, recent attention has heightened the need to increase regulation of prescription opioid policies at the state and national levels [15 & 16]. For example, a recent search for 2019 proposed state bills from the Injury Prevention Legislation Database, maintained by the National Conference of State Legislatures, identified that 314 of 569(55%) of all injury prevention bills pertain directly to prescription drug abuse across 46 states [17]. The remainder of proposed state bills related to injury prevention (255 of 569 [45%]) are related to other injury prevention issues (e.g., child maltreatment, elderly falls, dating violence, traumatic brain injury). With a steady stream of substance use policies, regulations and guidelines being enacted for prominent issues (e.g., opioids, prescription drug abuse, and marijuana) and very few them being assessed for health impacts, there is a prime opportunity to consider Health Impact Assessments in the world of substance use policy.

Health Impact Assessments

Health Impact Assessment (HIA) is “a systematic process that uses an array of data sources and analytic methods and considers input from stakeholders to determine the potential effects of a proposed policy, plan, program, or project on the health of a population and the distribution of the effects within the population. HIA provides recommendations on monitoring and managing those effects”. HIA typically follows six steps: screening, scoping, assessment, recommendations, reporting, and monitoring and evaluation [18]. HIA is an effective decision-support tool for proposed drug policies, as they are conducted to provide input for decisionmakers before policies are enacted.

Purpose of Study and Need for HIAs in Drug Policy

Recent reports have helped define best practices for HIAs in various sectors, including transportation [19 & 20], criminal justice [21], food and agriculture [22], energy and natural resources [23], and education [24]. The present study examines HIAs related to alcohol, tobacco, and marijuana policies, and may assist other organizations with conducting future HIAs on these topics. This study provides a review of current research, including the types of policies examined by HIAs, methods used to obtain HIA data, and summaries of conclusions and findings.

Methods

Data Sources: HIAs on Pew Database

Using the Pew Charitable Trusts’ HIA searchable database [25], we identified 378 completed HIAs on a variety of topics. For this study, we selected HIAs from the complete pool related to substance abuse based on several criteria, consistent with similar HIA studies: 1) The report was labelled as an HIA in the report’s title or summary; 2) The HIA provided specific local or

state policy considerations for one or more legal or illegal drugs, including, but not limited to, alcohol, tobacco, or marijuana; 3) The HIA’s treatment of legal or illegal drugs was a significant component of the policy (e.g., drugs were evaluated and drug-related measures were included as significant components of the HIA recommendations), even if the HIA also emphasized related categories, such as agriculture or education; 4) All primary web links to the HIA were functional; 5) The HIA contained adequate depth of at least four of the six HIA steps (i.e., screening, scoping, assessment, recommendations, reporting, and monitoring and evaluation); and 6) Legal or illegal drug use related to more than one facet of the social determinants of health (e.g., education, income, employment, gender, public safety, social support, societal norms, culture, etc.) was explored as part of the HIA.

HIAs that did not meet each of the above six criteria were excluded. A total of 13 substance abuse-related studies identified from the Pew Charitable Trusts HIA database were retained for analysis. For reliability, two team members reviewed all HIAs to ensure that no substance abuse-related HIAs in the database were missed; no additional relevant HIAs were found. Similar to published literature review studies, the data collected did not directly involve human subjects nor the need for informed consent. Therefore, Institutional Review Board approval was not required. The reviewers exercised appropriate practices consistent with ethical research guidelines. Researchers may similarly access the database to identify a variety of reports we selected for this study that were identified during this stage of the study.

Data Sources: Other Database Sources for HIAs

The second stage, a confirmatory search for peer-reviewed HIAs, was conducted to identify relevant HIAs outside the Pew database for inclusion. This search included an internet and literature search in several databases and sources, including all EBSCO databases, all ProQuest databases, PubMed, Scopus, Web of Science, Google Scholar, the Human Impact Partners database [26], and a general Google search. Key search words used were [“Health Impact Assessment” OR “HIA”] AND [“drugs” OR “narcotics” OR “tobacco” OR “marijuana” OR “substance abuse” OR “alcohol” OR “smoking”]. An additional 24 potentially relevant HIAs were identified. These 24 HIAs were subject to the same 6 review criteria from stage one and yielded three additional HIAs. Many of the 24 were deemed to be policy reports rather than being true HIAs.

Additionally, for expanded international comparability, six HIAs from England and New Zealand were included in the final analysis because they met the inclusion criteria and are available on the archived English HIA Gateway Database [27] and New Zealand Ministry of Health websites [28].

Only one reference [29] was found in the literature about the use of HIAs for narcotic abuse and prescription drug misuse policies. This supported the decision to focus this study on alcohol, tobacco and marijuana policies.

Selection and Examination Factors for Final HIAs

The full report for each of the final 22 selected HIAs was reviewed to extract key data elements, including organization type

conducting the HIA, decision-making level, type of funding, key social determinants of health, location, the drug considered, the policy type, factors considered as part of the policy and the policy approach, how the effects of the policy were characterized, the setting in which the policy would be implemented, and relevant stakeholders included.

We examined various factors in the HIA analyses including drug accessibility, effects of the drug on youth, influence of the drug on crime, effects on drug switching and other substance abuse habits, quality of life, morbidity, and mortality. We also examined specific elements in the HIA's recommendations such as availability of financial resources, how the policy would be enforced, recommendations to mitigate negative health effects of the proposed policy, and whether polydrug use was considered. Each of the 22 HIAs were also evaluated based on their characterization of the health effects studied including direction (beneficial or adverse effect), likelihood (probability that effect will occur), magnitude (expected number of affected people), intensity (severity of the effect), and distribution (geographic boundaries of the effect).

Development of Four HIA Case Studies for Drug Policy

Four HIAs were selected as in-depth case studies. Case studies were chosen based on their comprehensiveness, their inclusion of key features of HIAs (i.e., all 6 phases, characterization of health effects, variety of data sources, and inclusion of appropriate stakeholders), and to highlight variety in the HIAs, their analytic methods and approaches, and impacts of the HIA on decision making. In addition to analysis of the HIA itself, the agency websites were consulted for each case study. The four case studies constitute a sample of convenience and are not necessarily representative of all 22 HIAs.

Results

Summary of HIAs

The 22 HIAs included in the study (Table 1) were conducted between 2005 and 2019. Sixteen (73%) were conducted in the United States, three (14%) in New Zealand, and three in England (14%). The US-based HIAs were from California, Colorado, Kansas, Maryland, Minnesota, Oregon, Utah, Vermont and Wisconsin. Twelve (55%) of the HIAs were led by government agencies, seven (32%) were led by universities, and the remaining three (14%) were led by nonprofit organizations. Nine HIAs (41%) addressed policies on a state level, while the remaining thirteen (59%) addressed these factors on a local level. Of the 22 HIAs, twelve (55%) addressed alcohol, three (14%) addressed tobacco, and seven (32%) addressed marijuana policies.

Decisions assessed in the HIAs varied by type of drug considered. Most alcohol and tobacco HIAs assessed the impact of limiting local retail alcohol and tobacco outlets and raising the legal age of tobacco purchase. Marijuana-related HIAs most commonly assessed the impacts that marijuana-related environments may have on youth, including unintentional ingestion and motor vehicle crashes. Fourteen (64%) of the HIAs focused on control-

based policies while the other eight (36%) focused on prevention strategies.

Methods employed in the HIAs to characterize policy and health impacts included literature reviews, secondary data analysis, key informant reviews, focus groups, and environmental audits. Every HIA analyzed included a literature review. Twenty-one of the 22 HIAs (95%) included secondary data analyses. HIA investigators obtained stakeholder input from identified key informants for twelve HIAs (55%), conducted focus groups or workshops with members of their target communities for seven HIAs (32%), and conducted scans or audits of their target community environment for four HIAs (18%). Few of the HIA reports contained discrete screening or evaluation steps.

HIA Case Studies

Four case studies were chosen as examples of well-conducted HIAs in the field of substance abuse that communities may consider either for their results or methodology used. Each case study utilized appropriate methodologies for data collection, collaborated with stakeholders, thoroughly assessed likely health outcomes, characterized the potential health effects of the proposed policy, and formulated comprehensive recommendations.

Alcohol Environment –Weston, Wisconsin

Considering Wisconsin's high rates of binge, chronic heavy, and underage drinking, in 2011 village leaders of Weston, Wisconsin (population 14,868) requested a review by the county health department of local liquor licensing practices at the municipal level. They specifically considered limits on future Class A alcohol licenses and alcohol retail outlet density and the effects on Weston's community health and development. These were considered due to the community's primary concern about retail density. At the time, there were 42 alcohol outlets in Weston, including outlets that sell alcohol for off-premise use such as liquor stores, gas stations, and grocery stores, and on-premise use such as restaurants, casinos, and bars.

The HIA focused on underage drinking, drinking and driving, alcohol outlet density, and consequences of alcohol misuse. The HIA used mixed methods, including review of literature and local alcohol policies, collection of local alcohol-related data from police reports, interviews with community members, surveys, and a GIS and photo mapping assessment of the community. The HIA investigators used these data to project future conditions and develop strategies to address such conditions.

The HIA advisory committee included a member of the county alcohol and other drug partnership council, the area chief of police, the village administrator, the village clerk, and the village board president. The advisory committee assisted in the HIA scoping phase, helping to select policies, health indicators, stakeholders, and data for inclusion in the HIA. The advisory committees, as well as the Wisconsin state health department, were involved throughout the entire HIA process.

The HIA concluded that reducing alcohol availability through limiting liquor licenses is likely to reduce drinking and driving and youth drinking rates in Weston. Key recommendations included:

Table 1. Key HIA Elements and Impacts of Selected Studies

| Title, Location, Year Completed | Lead Agency | Decision Assessed | Primary Impacts Examined | Methods Employed to Characterize Impacts | Characterization of Health Effects |
|---|--|--|--|---|--|
| Alcohol-related HIAs | | | | | |
| TransForm Baltimore health impact assessment violent crime literature review and local analyses , MD, 2011 [30] | The Baltimore City Health Department | A zoning policy's positive health and safety impacts on Baltimore City neighborhoods | <ul style="list-style-type: none"> - Location, distribution, and density of alcohol outlets in Baltimore City - Overall reduction of alcohol density - Primarily focus on prevention | Literature, Secondary ¹ | Distribution |
| Potential health effects of expanding liquor licenses to grocery and convenience stores: Kansas health impact assessment project, Topeka, KS, 2014 [31] | Kansas Health Institute | Expanding liquor licenses to grocery and convenience stores | <ul style="list-style-type: none"> - Alcohol consumption (adult and youth) - Driving under the influence (arrests) - Alcohol-related traffic accidents and mortality (adults and youth) - Crime - Sexually transmitted diseases - Primary focus on control | Literature, Secondary | Likelihood, Magnitude, Distribution |
| Limiting retail alcohol outlets in the Greenbuch-Vilas neighborhood, Madison, Wisconsin: health impact assessment, Madison, WI, 2013 [32] | University of Wisconsin Population Health Institute | Limiting retail alcohol outlets in the Greenbush-Vilas neighborhood | <ul style="list-style-type: none"> - Substance abuse habits - Improved personal health practices - Primarily focus on prevention | Literature, Secondary, Key ² | Magnitude |
| Health impact assessment report: Alcohol environment - village of Weston, WI, 2011 [33] | Village residents, Village Board members, license holders, youth, etc. | Underage drinking and driving behaviors in the Village of Weston, Wisconsin | <ul style="list-style-type: none"> - Overall community health and development - Primarily focus on prevention | Literature, Secondary, Focus Group | Direction, Likelihood, Magnitude, Distribution |
| Alcohol outlets and our community: A health impact assessment of the harms of high alcohol outlet density in Mendocino County, California 2013 [34] | Mendocino County Public Health Services Prevention and Planning Unit | The harms of high alcohol outlet density in Mendocino County, CA | <ul style="list-style-type: none"> - Reduced harm, crime and injury - Primary focus on control | Literature, Secondary, Focus Group Environmental ³ | Distribution |
| Wellbeing (health) impact assessment of the Whangarei district council's draft liquor licensing policy, Whangarei District, NZ, 2010 [35] | Northland District Health Board Public and Population Health Services | The draft LLP proposed introducing uniform licensing hours for on-, off- and club-licenses across Whangarei District Also introducing a 'one-way door' policy for Whangarei Central Business District (CBD) on-licensed premises | <ul style="list-style-type: none"> - Reduced alcohol-related harm - Primary focus on control | Literature, Secondary, Focus Group, Key | Direction, Likelihood, Magnitude, Distribution |
| Whānau Ora health impact assessment of the draft Wairarapa alcohol strategy, Wairarapa District, NZ, 2010 [36] | The local Community Alcohol Action Group (CAAG) | Creating an environment in which alcohol-related activities can be enjoyed with minimal risk of harm to the community | <ul style="list-style-type: none"> - Reduced alcohol-related harm - Primary focus on control | Literature, Secondary, Focus Group, Key | Direction, Magnitude, Distribution |
| Health impact assessment: Proposed liquor restriction extensions in North Dunedin, North Dunedin, NZ, 2008[37] | Public Health South (an entity of the Otago District Health Board) | Implement a city-wide liquor restriction as opposed to only North Dunedin | <ul style="list-style-type: none"> - Reduced alcohol-related harm - Primary focus on control | Literature, Secondary, Focus Group, Key | Direction, Likelihood, Magnitude, Distribution |

| Title, Location, Year Completed | Lead Agency | Decision Assessed | Primary Impacts Examined | Methods Employed to Characterize Impacts | Characterization of Health Effects |
|---|---|---|--|--|---|
| Rapid health impact assessment of the draft Liverpool alcohol strategy, Liverpool, England, 2005 [38] | The International Health Impact Assessment Consortium | Provide feedback for and enhance the Liverpool Alcohol Strategy | - Enhance the Liverpool Alcohol Strategy - Primary focus on prevention | Literature, Secondary, Focus Group, | Direction, Likelihood, Magnitude, Distribution |
| Review of the national alcohol harm reduction strategy for England: health impact assessment, 2007 [39] | The Department of Health, the Home Office and the Department for Education and Skills | The effects on health and wellbeing of the review of the Alcohol Harm Reduction Strategy for England (ASE) | - Ensure that the ASE review is subject to a public health focused impact assessment process - Primary focus on prevention | Literature, Secondary, Environment | Direction, Likelihood, Magnitude, Distribution |
| Flexible alcohol licensing hours in Brighton & Hove: health impact assessment, England, 2009 [40] | Ben Cave Associates | The misuse of Alcohol in Brighton and Hove, England | - Assess the Introduction of Flexible Alcohol Licensing Hours - Primary focus on prevention | Literature, Secondary | Direction, Likelihood, Magnitude, Distribution |
| Assessing Alcohol Policy in Utah: A Health Impact Assessment, Utah, 2013 [41] | Utah County Dept of Drug and Alcohol Prevention and Treatment, and Brigham Young University's Master of Public Health program | Utah legislators are considering a limit on the number of alcohol retail outlet licenses issued according to population quotas. | -Potential incidences of rape and sexual abuse, underage drinking, binge drinking, long-term health effects, motor vehicle accidents, and economic decline | Literature, Secondary, Key | Likelihood, Magnitude, Distribution, Severity |
| Tobacco-related HIAs | | | | | |
| Tobacco Retail Licensing Policy: A Health Equity Impact Assessment, Multnomah, OR, 2015 [42] | Upstream Public Health | The potential racial, social, environmental and economic health equity impacts of a potential tobacco retail policy on Multnomah County communities, using introduced state legislation as a template | - Enforcement, education, and training for community members - A stronger enforcement system - Ensure retail owners, not clerks, are responsible for paying fees - Retail owner trainings on tobacco licensing rules should be culturally and linguistically accessible - Support for small business owners who decide to top selling tobacco - Continued involvement of impacted communities - Provide youth and other impacted groups with education about the harms of tobacco - Equitable enforcement of the TRL policy - Primarily focus on prevention. | Literature, Secondary | Direction, Likelihood |
| Health impact assessment of a tobacco retail license ordinance in Klamath County, Klamath County, Oregon, 2015 [43] | The Oregon Public Health Institute | Health impacts of a tobacco retail license ordinance in Klamath County | - All retailers selling tobacco products will be required to apply for a Tobacco Retail License - A license fee that is high enough to sustain the licensing infrastructure without making a profit - A cap on tobacco retailers in Klamath County - No Tobacco Retail Licenses will be given to businesses within 1000 feet of schools nor childcare facilities - Primary focus on control. | Literature, Secondary | Direction, Likelihood, Magnitude, Distribution |
| Health Impact Assessment: Raising the Legal Tobacco Purchase and Use Age to 21 in Utah, Utah, 2015 [44] | Brigham Young University and Utah Department of Health, co-collaborators | Health impacts of a state proposal to raise the legal age to 21 for purchasing tobacco and related products in Utah | -Reduced number of lifelong smokers -Fewer health care costs -Better mental health -Better educated population -Fewer rates of smoking related diseases -Increased productivity | Literature, Secondary, Key | Direction, Likelihood, Magnitude, Distribution, Intensity |

| Title, Location, Year Completed | Lead Agency | Decision Assessed | Primary Impacts Examined | Methods Employed to Characterize Impacts | Characterization of Health Effects |
|--|---|--|---|--|---|
| Marijuana-related HIAs | | | | | |
| Preventing unintentional ingestion of marijuana by children: A health impact assessment of packaging regulations in retail marijuana establishments in Colorado, Aurora, CO, 2013 [45] | The Pediatric Injury Prevention Education and Research Program at the Colorado School of Public Health and the Children's Health Advocacy Institute at Children's Hospital Colorado | Preventing unintentional ingestion of marijuana by children | - The efficacy and effectiveness of child resistant packaging in reducing child poisoning - Primary focus on control | Literature | Magnitude |
| Potential health effects of legalizing medical marijuana in Kansas: Kansas health impact assessment project, Topeka, KS, 2015 [46] | Kansas Health Institute | Potential health effects of legalizing marijuana in Kansas | - Creation of marijuana dispensaries - Increased access to medical marijuana, and subsequent usage by individuals with qualifying medical conditions - Primarily focus on prevention | Literature, Secondary, Key | Direction, Likelihood, Magnitude, Distribution |
| Marijuana Policies Related to Child Abuse and Neglect in the State of Colorado, Aurora, CO, 2016 [45] | Colorado School of Public Health' | Marijuana-related child abuse and neglect | - Reduced child abuse or neglect as influenced by marijuana - Modernization of the definition of child abuse or neglect in the Colorado Children's Code as it relates to substances - Primary focus on control | Literature, Secondary, Key | Direction, Magnitude |
| Health impact assessment: Marijuana regulation in Vermont, 2016 [47] | Vermont Department of Health | Marijuana regulation in Vermont | - Control of access and distribution of marijuana - Support of criminal enterprises - Diversion of marijuana to states that do not permit possession of marijuana - Marijuana activity covering illegal drug trafficking - Increased violence and drugged driving - Primary focus on control | Literature, Secondary | Direction, Likelihood, Magnitude, Distribution, Intensity |
| Potential Health Effects of Drug Sentencing Reform in Minnesota: Health Impact Assessment of Proposed Policy, Minneapolis, MN, 2016 [48] | Council on Crime and Justice | Potential health impacts drug sentencing policies could have on individuals, families, and communities in Minnesota. | - Drug sentencing guidelines- Crime, rehabilitation, and public safety- Primary focus on prevention | Literature, Secondary, Key | Direction, Likelihood, Magnitude, Distribution |
| Medical Marijuana Ballot Measure: Utah Medical Cannabis Act, 2017 [49] | Brigham Young University | Medical marijuana access and regulation in Utah | - Electronic database and cardholder system legalizes the possession and consumption of medical marijuana- Allows individual growing practices to commence | Literature, Secondary, Key | Direction, Likelihood, Magnitude, Distribution, Intensity |
| Health Equity Implications of Retail Cannabis Regulation in Los Angeles County, CA, 2019 [50] | Center for Health Impact Evaluation | Allowing licensed cannabis dispensaries to operate within Los Angeles' unincorporated areas | - Achieving health equity- Primary focus on control | Literature, Secondary, Key, Focus Group | Direction, Likelihood, Magnitude, Distribution |

- i) Secondary Data Analysis
- ii) Key Informant Review
- iii) Environmental Audit

1) temporarily suspending new alcohol sales licenses and limiting the number of future licenses issued; 2) establishing a Policy Exemption Committee to mitigate economic impacts on small business of the first recommendation; 3) forming a local Alcohol License Review Board; 4) conducting periodic youth behavior health surveys in local schools to monitor underage drinking behaviors; and 5) seeking support of the county board of health to conduct HIAs in other communities in the county.

Those conducting the HIA felt that the HIA process built important community relationships to reduce alcohol misuse prevention primarily through 1) placing a moratorium on future Class A licenses until a community forum could be conducted for input, 2) developing an alcohol licensing review board for ongoing community monitoring, 3) gathering data among youth to monitor alcohol impact, and 4) promoting the value of conducting HIAs in other county communities.

Tobacco Retail Licensing Policy HIA –Multnomah County, Oregon

Oregon has the highest rate of tobacco sales to minors in the United States. One-third of tobacco retailers in Multnomah County, Oregon (population = 735,334, including Portland) are located within 1000 feet of a school. In 2015, legislators representing Multnomah County proposed Oregon's SB 663 Tobacco Retail License (TRL) Policy to reduce tobacco access and smoking rates for youth in the county. The proposed policy would include an annual licensing fee for tobacco retailers, prohibition of new tobacco retailers near schools, improved enforcement of the tobacco sales age limit, and a ban on tobacco promotion activities by retailers. In collaboration with community members and public health staff, the non-profit organization Upstream Public Health conducted an HIA to determine the potential racial, social, environmental, economic, and health equity effects of a TRL policy in Multnomah County.

The HIA team used a literature review, existing local data, and key informant interviews to examine current conditions in the county, including adult tobacco use, youth tobacco and e-cigarette use, tobacco and e-cigarette promotions and availability, and specific location of tobacco retailers. The team also assessed impacts to economic stability, social equity, mental well-being, and tobacco-related diseases, as well as proposed changes to environmental conditions and tobacco product access. Stakeholders involved in the process included the Multnomah County Health Department, Oregon Health Equity Alliance, Multnomah County Commissioners, and Oregon State legislators and their staff.

The HIA team found that cigarettes are often marketed to people of color and low-income persons; youth use of non-cigarette tobacco products is increasing in the county; and the county has high tobacco-related death and chronic disease rates. The HIA supported the passage of the proposed TRL policy to decrease youth access to tobacco products and associated disease, death, and healthcare costs. The HIA recommended a strong and equitable enforcement system, funded by retail licensing fees, to ensure that small retailers, people of color, and youth are not disproportionately targeted by enforcement officers. The HIA also recommended that economic support be provided to small business owners who stop selling tobacco.

The HIA results were presented to legislative committees and other stakeholder groups. Decision-makers were provided with data that similar policies in other states helped reduce youth access to tobacco, which was an important message because, at that time, Oregon risked losing its federal funds for smoking cessation due to its high tobacco sales rates. Although the TRL bill was not passed by the legislature in 2015, several local organizations used the HIA results to pass a 2016 Multnomah County Tobacco Retail License Ordinance to regulate the sale of all tobacco, nicotine and vaping products, prohibit mobile sales, and increase retailer knowledge and compliance [51]. A statewide policy has not yet passed.

Legalization of Medical Marijuana HIA –State of Kansas

In 2015, the legalization of medical marijuana was considered by the Kansas State Legislature in three bills that differed by the medical conditions for which marijuana could be used. To help Kansas policymakers make an informed decision about these bills, the Kansas Health Institute conducted an HIA to describe the potential health effects of legalizing medical marijuana.

The HIA used mixed methods to examine the effects of the proposed policy on marijuana access and consumption, crime, driving under the influence, accidental ingestion, and impact on vulnerable populations. Impacts of the bills were examined using a literature review, analysis of state and national data, a survey, and key informant interviews with seven opponents and five proponents of the bills. Stakeholder input was obtained from individuals with debilitating medical conditions, drug prevention organizations, school officials, academic researchers, and public health professionals.

The HIA found the bills would have little effect on marijuana consumption by the general population or on property and violent crime rates and would increase marijuana access for persons with qualifying medical conditions. However, the bills could lead to increases in marijuana consumption by at-risk youth, accidental marijuana ingestion by children, and car crashes associated with driving under the influence. The regulation, enforcement, culture, and the distribution model for medical marijuana would determine the extent of these impacts. The HIA recommended that adults refrain from using medical marijuana in front of children, monitoring medical marijuana prescriptions in a database, and using childproof packaging for medical marijuana products.

During legislative sessions, proponents and opponents of legalizing medical marijuana incorporated HIA findings into their testimonies. In 2016, the Kansas Safe Access Act was introduced in the legislature, which incorporated recommendations from the current HIA (Tatiana Lin, personal communication). From 2015-2017, the Kansas Health Institute provided legislative testimony and hosted an education session for a bipartisan legislative caucus to address legislators' questions about the potential health effects of medical marijuana. As of June 2020, the most recent medical marijuana law under consideration failed to pass in the Kansas state legislature. [52]

Whangarei District Council's Draft Liquor Licensing Policy HIA – New Zealand

From 2008-2009, 40% of all arrests were alcohol-related in the Whangarei District (population 74,463) of New Zealand. The Maori, who compose 25% of the district population, experienced 60% of the alcohol-related arrests and 43% of the alcohol-related hospitalizations in the district. A new Liquor Licensing Policy was proposed to reduce alcohol-related arrests and hospitalizations by mandating uniform licensing hours for on-, off-, and club-licenses and establishing a "one-way-door" policy that forbids re-entry after 1:00 am to an on-licensed establishment after leaving it [53]. The Northland District Health Board conducted

an HIA to examine the impacts of the proposed policy on the local community, particularly the Maori population and persons aged 18 to 35 years. The primary health determinants of interest included economic impacts, alcohol-related harm, Whanau (Maori for extended family), and community safety.

The HIA team used a literature review, community profile, alcohol-related data from local police and hospitals, mapping of the types and locations of licensed premises, and a survey of persons aged 18-35. The Maori holistic view of health and well-being that includes elements of spirituality, whanau, and community well-being was incorporated in all aspects of the HIA. Input was obtained from numerous stakeholders including the Alcohol Advisory Council of New Zealand, representatives from the local police, fire service and District Council, the Family Violence Prevention Consortium, the Medical Officer of Health, the Maori Health Advisor from the Northland District Health Board, the Hospitality Association of New Zealand, and local restaurant owners.

The HIA found that regulating the availability of alcohol through restricted times of sale is an effective strategy for communities to reduce alcohol-related harms and is supported by stakeholders. Evidence was inconclusive for or against both the “one-way-door” policy and the establishment of specific closing times. The HIA recommended that off-licensing hours should be from 9 am to 9 pm throughout the Whangarei District; on-licensing hours in the Central Business District should be reduced while considering impacts to on-licensees, whanau/family and the wider Whangarei Community; and a “one-way door” policy should not be implemented due to inconclusive evidence to support it.

The proposed policy was adopted in 2010 to regulate hours of licensed business operation, strengthen reporting criteria and communication for applications and renewals, and enhance enforcement procedures [54]. In addition, a “one-way door” policy was introduced in 2015 for Whangarei’s Central Business District [53].

Why does this matter?

Few HIAs exist for practitioners dealing with proposed substance abuse policies. The highlights of each case study are provided for communities to learn from HIA methods and the evidence and results compiled for common substance abuse policies. These HIAs were selected and described to improve how HIAs are used for substance abuse policies and to facilitate a wider use of HIAs in practice.

Discussion

HIAs provide a promising tool that stakeholders from the substance abuse, public health, law enforcement, and healthcare fields can use to maximize the potential for health enhancement for families and communities. HIAs range from desk reviews that require hours to comprehensive studies that can take months; the depth and breadth of an HIA is determined in part by the time and resources available. The 22 HIAs reviewed in this report may help guide the conduct of HIAs for similar policies related to substance use prevention and control proposed in other local and state settings.

HIAs are valuable for informing decision makers considering proposed policies and for engaging diverse stakeholder groups in planning processes. These benefits are most pronounced when stakeholder groups are engaged early in the process. Most HIAs in this report engaged partners, such as decision-makers, government agencies, law enforcement, healthcare and drug treatment professionals, judicial representatives, special interest groups, parents, youth-serving organizations, and the general public. Such engagement helps build consensus and gives community members a stronger voice in decisions [24], which may lead to better policies and programs [55]. A critical area for future research is to identify how impact assessments (health impact assessments, environmental impact assessments, etc.) have the potential to influence the nature and outcome of proposed policies. An additional area of future research would be to compare the actual outcomes of implemented policies that had HIAs compared with those that did not have HIAs to determine the size of the value-add that HIAs provide to the policy making process.

As states and cities consider the expansion of current substance abuse laws and policies, additional innovative policies may be needed to prevent addiction and related health problems. The current opioid crisis and increasing use of e-cigarettes provide additional reasons for policymakers, researchers, public health practitioners, and other community groups to consider using HIAs.

HIAs are especially useful for substance abuse policies for which little is known about health effects, such as incarceration policies related to substance abuse; at least one HIA has been done on this topic in Wisconsin [56]. Other examples include legalizing the use of medical and recreational marijuana, and reducing criminal penalties for marijuana possession [12 & 13]. However, an HIA may be less needed for substance abuse policies with a robust evidence-base such as needle exchange programs [57] and for those where health is already a primary outcome.

This review found that HIAs have been conducted related to alcohol policies in the US, England, and New Zealand. For some unknown reason, no HIAs related to tobacco or marijuana were identified from the latter two countries. In addition, only one reference [29] was found in the literature about the use of HIAs for narcotic abuse and prescription drug misuse policies. Perhaps more attention should be given to drug issues beyond the challenges associated with alcohol.

Prior research has documented factors that contribute to successful HIAs. These factors include engaging stakeholders, timeliness, policy and systems support for conducting HIAs, obtaining the support of decision makers, having persons with appropriate skills on the HIA team, and providing clearly articulated, feasible recommendations [58]. This study’s findings are consistent with the conclusions made by others regarding the factors that contribute to successful HIAs.

Study Limitations

Several limitations should be considered in interpreting study results. First, not all completed HIAs are included in the Pew Charitable Trusts HIA database and we may have missed some

relevant HIAs despite searching known websites and other depositories. Additionally, the number of relevant HIAs identified was small and may suggest an emphasized need for conducting and reporting HIAs for drug policies. Second, quality of HIAs varies and not all Pew Charitable Trusts HIA database HIAs meet practice standards [59]. Third, we were unable to consistently report the limitations or barriers faced by each community in conducting HIAs since there were limited data available. Further, we do not provide each HIA's historical or geopolitical context; however, we acknowledge that while these factors are critical for conducting HIAs within one's community, our focus emphasized the HIA practice rather than the community context of each HIA report. Fourth, we provide only a descriptive rather than an analytic piece, as our purpose is to provide working examples for drug policy stakeholders to consider conducting HIAs on these issues.

Conclusion

Relatively few relevant HIAs exist for drug policies, which suggests there may be opportunities for additional HIAs in this field. We identify how past studies in alcohol, tobacco and marijuana policies have been undertaken and serve resources for communities and governments. Because of current social policy trends for a growing number of drug use laws, regulations or practices, the present study is an important contribution to the literature. For proposed alcohol, tobacco, and marijuana policies we have observed that HIAs may be useful when: a) the decision for a proposed policy has the potential to affect social determinants of health or health equity; b) there are sufficient time, resources, and data to conduct an analysis prior to decision-making; c) the decision maker is willing to consider the results of the HIA; and d) there is a plan to disseminate relevant HIA findings about how health is potentially impacted by proposed policies. Although some HIAs exist for drug and substance use policies, additional HIA work is needed to provide insights about how policies may impact a specific community or subpopulation or when any unique considerations or unintended consequences in that community may be possible.

HIAs serve as a tool for the concept of health in all policies. Specifically, the value of HIAs is to 'have health at the table' for decision-makers as they consider proposed policies in sectors outside of health. Our review of HIAs related to alcohol, tobacco, and marijuana policies is consistent with prior reports suggesting that HIAs may increase awareness of health impacts among decision-makers, improve collaboration among stakeholders, and have direct impacts on policy decisions. We hope this report will help governments and communities of various circumstances, sizes and locations to more effectively weigh the health merits of alcohol, tobacco and marijuana policies on key stakeholders through the use of HIAs

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