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Te Whare Wānanga o Otāgo

NEW ZEALAND

LITERATURE REVIEW OF LOCAL INTERVENTIONS TO PREVENT ALCOHOL-RELATED INJURIES

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PREPARED FOR THE ACCIDENT COMPENSATION CORPORATION

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INTRODUCTION

The association between alcohol consumption and injuries is well-established scientifically. Reflected within the alcohol and injuries research literature is the very wide range of different types of alcohol control interventions. For example, the World Health Organization's (WHO) 2010 Global Strategy on Alcohol Control identifies 67 interventions, each of which may have multiple variations.

We conducted a literature review guided by the following research questions:

1. What does research literature report on the effectiveness of local interventions to reduce alcohol consumption, alcohol-related injuries, and other alcohol-related harms?
2. What does research literature report on the barriers and facilitators of local interventions to reduce alcohol-related injuries?
3. What does the research literature from New Zealand (NZ) suggest on the potential implementation of local interventions to reduce alcohol-related injuries within the NZ local context?

METHODS

We used the WHO Strategy as a framework for compiling and presenting our literature review; 7 of 10 target areas contained interventions of relevance to the current NZ local context. The search strategy focused on English-language literature from high-income countries or NZ published from the year 2000 onward, with a strong emphasis on peer reviewed literature identified through PubMed and Google. Using the identified research literature, we undertook a qualitative literature synthesis.

RESULTS

Table 1 summarises the results of the review, with additional comments in the following corresponding sections.

Community Action (Area 3)

- *Community Action* research focuses on studies looking at the impact of stimulating, supporting, and undertaking community action.
- There is very little international research that examines community action among Indigenous communities. Non-Indigenous research emphasises processes and outcomes that reflect Western values, such as measureable changes in alcohol use, injuries, and health service use. Much published alcohol harms research within NZ fails to recognise te ao Māori (Māori worldview) and Māori perceptions of health.
- All efforts to reduce alcohol-related harm should adhere to Te Tiriti o Waitangi (the Treaty of Waitangi), which will typically require a strong community-based approach. Te Tiriti endorses Māori tribal self-determination and authority, which is especially important when considering community action.

Awareness (Area 1)

- Weak study designs are one component that contributes to limited demonstrable effectiveness of alcohol awareness efforts. An equally important limitation is that health promotion campaigns are delivered in a context where alcohol marketing and pro-alcohol cultural norms are ubiquitous and powerful.
- Despite their minimal effectiveness on downstream outcomes, mass media

campaigns are likely to form a component of any jurisdiction's alcohol harm reduction strategy. Some researchers recommend that such campaigns target areas where knowledge is low (eg, the long term risk of cancers) and that campaigns can play a supportive role to other more effective strategies.

- It is essential to closely engage with key population groups, especially Māori, and it is recommended that priority groups have a lead role in designing and implementing the *Awareness* activities.

Health Services' Response (Area 2)

- This intervention category is one of the most researched alcohol reduction strategies. There is a very large and varied body of literature on the topic, with some remaining gaps among certain populations or types of interventions.
- Quantitative approaches have examined whether or not various intervention or population characteristics are associated with improved outcomes of screening and brief interventions. There are numerous qualitative studies that have attempted to distil a very large body of research to identify what works best.
- Similar to the international research, *Health Services' Response* is the most widely researched alcohol control intervention for the NZ context, yet very little research is specific to Māori.

Drink-Driving Policies and Countermeasures (Area 4)

- Researchers point to possible adverse effects of alternative transport programmes. For example, the provision of late night affordable public transport may provide an incentive to stay out later, drink more (because of not driving), and spend more money on alcohol or other drugs. Designated driver programmes may send a message that excessive drinking is acceptable if one is not driving.
- The evidence on workplace testing for alcohol has a number of quality concerns but indicates that workplace alcohol testing may reduce occupational injury rates among the transport industry. There are potential harms from implementing workplace alcohol testing (eg, fallibility of testing, damage to employer-employee relationships, ethical concerns).
- When considering what *Drink-Driving Policies and Countermeasures* to implement within NZ, roadside testing is a more urgent and effective strategy than the provision of alternative transportation and workplace alcohol testing.

Availability of Alcohol (Area 5)

- The *Availability of Alcohol* is an important domain for local level action.
- We highlight the research evidence on barriers and facilitators toward the adoption of these policies. There is a sizable body of research examining the use of local alcohol policies within the United Kingdom and Scotland.
- There is substantial NZ-specific research confirming the association between outlet density and access to alcohol outlets with higher and more harmful alcohol consumption, as well as a number of other harms.
- It is consistently challenging to implement restrictions on alcohol availability among NZ communities. There is a need for measures to protect the Local Alcohol Policy development process from alcohol industry influence. In its current form, the Local Alcohol Policy mechanism is poorly designed to equip communities with the

means to restrict alcohol availability at the local level.

Marketing of Alcoholic Beverages (Area 6)

- There are some important aspects of *Marketing of Alcoholic Beverages* that can be addressed at the local level. There is tremendous potential for local level action to result in interventions that reduce alcohol marketing exposure, shape the outdoor environment at a local level, aid in de-normalising alcohol use, and discourage vulnerable populations from harmful alcohol use.
- Despite the known causal effect of alcohol marketing on the initiation of alcohol use among youth, and the association with hazardous drinking among adults, there is very little research that evaluates the impact of implementing alcohol marketing restrictions on alcohol consumption and alcohol-related harms, such as injuries. Despite the paucity of research, there is sufficient evidence compiled in systematic reviews to support the use of such interventions (albeit with further evaluation being highly desirable).
- There is strong evidence from the NZ context to support action on restricting the marketing of alcoholic beverages at the local level.

Reducing the Negative Consequences of Drinking and Alcohol Intoxication (Area 8)

- Regulating the drinking context: These interventions are generally voluntary, which means that there is low uptake and little or no enforcement, and the interventions are generally only applicable to on-premise liquor outlets. Some interventions also only serve to shift the setting from within the establishment to outside on the street, where injuries are still possible.
- Enforcement of serving laws: The threshold for penalising alcohol outlets is so high that very few penalties are put in place. When penalties are applied, they are often very minor and thus provide little incentive for venues to improve practices. Furthermore, overservice laws have minimal impact on heavy alcohol consumption as the intervention is only implemented after the person is intoxicated.
- Providing care or shelter: Implementing this type of intervention requires substantial effort from the community and stakeholders. There are also very real concerns about the occupational health and safety risks to volunteers.
- Management policies on responsible serving: The implementation of this type of intervention incurs numerous challenges.

CONCLUSIONS

This review identifies a number of interventions that have been shown to successfully reduce alcohol-related injuries in local settings. Across the research literature, mandatory approaches to alcohol control were predominantly reported as more effective than voluntary approaches. Additionally, voluntary measures require significant community resources. A combined set of weak alcohol control strategies is unlikely to produce meaningful improvements in outcomes no matter how many interventions are included. Action at the community level is essential for addressing the adverse effects of alcohol consumption in NZ, but it is likely to be far from sufficient. Ultimately if NZ society wishes to reduce alcohol-related injuries and harm there will need to be new laws and fiscal measures (taxes/minimum prices) enacted by central or local government.

Table 1. Interventions of relevance to the local context and their effectiveness at reducing alcohol-related injuries and alcohol consumption

INTERVENTION	EFFECTIVENESS	WHO SAFER INITIATIVE	NOTES
Community Action (Area 3)			
Facilitating recognition of alcohol-related harm and promoting responses at local level	Not effective	No	The most effective alcohol control policies are commonly excluded from *Community Action*, contributing to the ineffectiveness of efforts in this domain.
Strengthening capacity and coordination of municipal policies	Not effective	No	
Providing information about and strengthening capacity for community level interventions	Not effective	No	
Awareness (Area 1)			
Public education and awareness programmes on alcohol's harms and available preventive measures	Not effective	No	The majority of the research was on mass media campaigns, many of which were not explicitly aimed at changing alcohol consumption or injuries.
Raising awareness of harm to others and discouraging discrimination and stigmatisation of affected groups	Not effective	No	
Health Services' Response (Area 2)			
Screening and brief interventions in primary health care and other settings	Effective	Yes	Effective in primary care, emergency care, and other health settings; ineffective in workplace settings.
Drink-Driving Policies and Countermeasures (Area 4)			
Provision of alternative transportation, including public transport, until after closing time for drinking places	Not effective	Yes	The possible adverse effects of this intervention could contribute to its ineffectiveness
Workplace alcohol testing for occupational drivers	Effective	No	Effective based on a very limited body of literature
Availability of Alcohol (Area 5)			
Regulating the number and location of on-premise and off-premise alcohol outlets	Effective	Yes	Important policy domain for the NZ local context
Regulating days and hours of retail sales	Effective	Yes	
Marketing of Alcoholic Beverages (Area 6)			
Restricting or banning promotions in connection with activities targeting young people	Plausibly effective	Yes	There is very little evaluative research on these interventions but very strong evidence on the causal effects of alcohol marketing on alcohol consumption
Regulating sponsorship activities that promote alcoholic beverages	Plausibly effective	Yes	
Reducing the Negative Consequences of Drinking and Alcohol Intoxication (Area 8)			
Regulating the drinking context to minimise violence and disruptive behaviour	Not effective	No	This set of interventions is aimed at reducing the harmful consequences from drinking and intoxication, but without necessarily changing the underlying levels of alcohol consumption
Enforce laws against serving to intoxication and legal liability from serving of alcohol	Not effective	No	
Providing care or shelter for severely intoxicated people	Not effective	No	
Management policies on responsible serving of beverage on premises and staff training	Effective	No	A small number of studies show some improvement in injury rates; reduced alcohol consumption was rarely demonstrated

RECOMMENDED READING

Community Action (Area 3)

- Research on the effectiveness and cost-effectiveness of alcohol control interventions: Burton et al 2017 'A rapid evidence review of the effectiveness and cost-effectiveness'[1]
- Research on the impact of alcohol control interventions with relevance to the local level: Anderson et al 2019 'City-based action to reduce harmful alcohol use – review of reviews'[2] (Table 1 provides a good summary)
- Challenges and recommendations for implementing local level action: Giesbrecht et al 2014 'Implementing and sustaining effective alcohol-related policies at the local level'[3]

Awareness (Area 1)

- Research that examines the effectiveness of mass media campaigns: Young et al 2018 'Effectiveness of mass media campaigns to reduce alcohol consumption and harm: a systematic review'[4]

Health Services' Response (Area 2)

- Research on the impact of brief interventions, with an examination of potential barriers and facilitators: Schmidt et al 2016 'Meta-analysis on the effectiveness of alcohol screening with brief interventions for patients in emergency care settings'[5]
- Quantitative approach to identifying what moderates the effectiveness of screening and brief intervention: Platt et al 2016 'How effective are brief interventions in reducing consumption: Do the setting, practitioner group and content matter? Findings from a systematic review and meta-regression analysis'[6]

Drink-Driving Policies and Countermeasures (Area 4)

- Research that evaluated the impact of public transport in Melbourne on alcohol-related harms: Curtis et al 2019 'The impact of twenty-four hour public transport in Melbourne, Australia: An evaluation of alcohol-related harms'[7]
- Recommendations for workplace drug policies: Pidd et al 2019 'Drug use and workplace safety: Issues and good practice responses'[8]

Availability of Alcohol (Area 5)

- Research review on the effects of alcohol trading hours: Nepal et al 2020 'Effects of Extensions and Restrictions in Alcohol Trading Hours on the Incidence of Assault and Unintentional Injury: Systematic Review'[9]
- Research on local alcohol policies in England: Reynolds et al 2019 ''A true partner around the table?' Perceptions of how to strengthen public health's contributions to the alcohol licensing process'[10]
- Research on local alcohol policies in Scotland: Wright 2019 'Local Alcohol Policy Implementation in Scotland: Understanding the Role of Accountability within Licensing'[11]
- Research evaluation NZ's Sale and Supply of Alcohol Act: Randerson et al 2018 'Changes in New Zealand's alcohol environment following implementation of the Sale and Supply of Alcohol Act (2012)'[12]

Marketing of Alcoholic Beverages (Area 6)

- A comprehensive review framed in the context of criteria for causality: Sargent and Babor 2020 'The relationship between exposure to alcohol marketing and underage drinking is causal'[13]
- Research on the rationale for local authorities to take action on restricting alcohol marketing: Swensen 2016 'Public space and alcohol advertising: Exploratory study of the role of local government'[14]
- Case study of community engagement in San Francisco to remove alcohol advertising from bus shelters: Simon 2008 'Reducing youth exposure to alcohol ads: targeting public transit'[15]
- Case study of community engagement in Baltimore to restrict alcohol advertising in the city: Meisel et al 2015 'Baltimore City's landmark alcohol and tobacco billboard ban: an implementation study'[16]

Reducing the Negative Consequences of Drinking and Alcohol Intoxication (Area 8)

- Research-based recommendations on management policies on responsible serving: Stockwell 2001 'Responsible alcohol service: lessons from evaluations of server training and policing initiatives'[17]

Introduction

The association between alcohol consumption and increased risk of injuries is well-established scientifically.[18] There is an extensive body of research on this relationship, as well as examining what interventions are effective at reducing alcohol-related injuries.[19] Numerous systematic reviews have examined how interventions can reduce alcohol-related injuries.[20–24] Research on this topic has also formed the focus of more comprehensive written volumes such as the 2009 *Prevention of alcohol-related injuries in the Americas: from evidence to policy action*, a book by the Pan-American Health Organization (PAHO).[25] Resources such as these have aimed to identify which interventions are most recommended for reducing injuries from alcohol.[25,26]

Reflected within the alcohol and injuries literature is the very wide range of different types of alcohol control interventions. For example, the World Health Organization's (WHO) 2010 Global Strategy on Alcohol Control identifies 67 interventions, each of which may have multiple variations.[27] In 2018, the WHO launched the SAFER Initiative, which identifies five sets of highly effective alcohol control strategies that governments should prioritise for implementation.[28] The strategies are (1) Strengthen restrictions on alcohol availability; (2) Advance and enforce drink driving countermeasures; (3) Facilitate access to screening, brief interventions, and treatment; (4) Enforce bans or comprehensive restrictions on alcohol advertising, sponsorship, and promotion; and (5) Raise prices on alcohol through excise taxes and pricing policies.[28]

While some alcohol control approaches directly reduce harm without affecting levels of alcohol consumption, the vast majority of these interventions reduce consumption and plausibly reduce injuries. Many interventions may be applied or adapted for application at a subnational level, with numerous existing resources providing guidance for local-level action. For instance, health agencies from England, Canada, and Australia have rigorously compiled evidence on local interventions that reduce alcohol-related harms, and strategies that promote the uptake of these interventions.[29–32] Within New Zealand (NZ), there are also evidence reviews and recommendations that examine interventions to reduce alcohol-related injuries in communities.[33–35]

There are several considerations when undertaking a literature review of local interventions to reduce alcohol-related injuries. First, any review of research on this topic must determine how to manage a very broad body of literature. Second, the literature review approach should consider how best to incorporate and build upon foundational research knowledge by drawing upon existing high-quality reviews. Third, the evidence should be scoped based on the NZ local context, including specific considerations toward Māori and health inequalities. Finally, there is added value in incorporating into the review what is known about NZ-specific contextual factors, such as relevant research conducted with NZ and considerations toward NZ's regulatory environment.

Based on the above considerations, we conducted a literature review guided by the following research questions:

1. What do existing literature reviews and select high quality primary research studies report on the effectiveness of local interventions to reduce alcohol consumption, alcohol-related injuries, and other alcohol-related harms?

2. What do existing literature reviews and select high quality primary research studies report on the barriers and facilitators of local interventions to reduce alcohol-related injuries?
3. What does the peer-reviewed literature from NZ suggest on the potential implementation of local interventions to reduce alcohol-related injuries within the NZ local context?

To encourage international comparability, we have organised the review's findings using the 10 recommended target areas presented in the WHO's Global Strategy on Alcohol Control.[27]

Methods

Approach

As outlined in the Introduction, this review's topic is associated with a substantial body of research literature. For this review, the search strategy aimed to identify and review the most relevant sources until a point of saturation is reached—that is, until no new major ideas, results, or conclusions were found. This is different from a comprehensive literature search, which would aim to identify and review every relevant piece of literature, and requires considerable resources.

We used the 10 target areas for alcohol interventions within the WHO's Global Strategy on Alcohol Control as a framework for compiling and presenting our literature review.
Table 2 presents these 10 categories, and identifies which interventions were considered 'local' and hence included in this review, and which interventions were excluded. For three categories, all of the interventions were deemed out of scope as they either could not be implemented through action at the NZ local level (as currently configured with relatively weak powers of local government) or fell within the jurisdiction of entities such as the police or education system. These three excluded categories are Area 7 (Pricing policies), Area 9 (Reducing the public health impact of illicit and informally produced alcohol), and Area 10 (Monitoring and surveillance).

Scope and Definitions

To aid in identifying the project's scope, we used the following terminology definitions. First, 'local' alcohol control interventions were interventions conducted at a subnational level, including actions taken by local government (eg, city councils), local public health bodies, local-level health sector agents, community-based organisations, community members, local-level key population groups, and workplaces. As per ACC specifications for this review, school-based and policing interventions were excluded. Second, 'interventions' was defined broadly to consist of initiatives, policies, and practices. Third, 'alcohol-related injuries' consisted of all types of fatal and non-fatal injuries previously shown to be associated with alcohol use, such as interpersonal violence (including physical assault, sexual assault, intimate partner violence), transport injuries, self-harm (including suicide), and unintentional injuries (including falls, cutting and piercing injuries, fire and burn injuries, poisonings, drownings, sport and recreation injuries, workplace injuries).

Search Strategy

The search strategy focused on English-language literature from high-income countries published from the year 2000 onward, with a strong emphasis on peer reviewed literature rather than grey literature. We used a combination of key word searches, search filters (eg, limiting results to reviews), document tracing (ie, using PubMed's 'Similar articles' search function), citations tracing (ie, using PubMed's and Google Scholar's 'Cited by' search functions to identify additional articles), and reference list review. The key word searches varied depending on the intervention of interest. We primarily used PubMed and Google Scholar search engines as we found that these were sufficiently aligned with the review's scope and objectives.

Table 2. Proposed interventions for inclusion or exclusion in literature review, by target area

INCLUDED INTERVENTIONS	EXCLUDED INTERVENTIONS
Area 1: Leadership, awareness, and commitment	
• Public education and awareness programmes on alcohol's harms and available preventive measures • Raising awareness of harm to others and discouraging discrimination and stigmatisation of affected groups	• Development of national or subnational strategy to reduce alcohol harms • Establish responsible agency • Within and across coordination of government sectors and levels on alcohol strategies
Area 2: Health services' response	
• Screening and brief interventions in primary health care and other settings (including among pregnant women) • Provision of culturally sensitive health and social services	• Increasing capacity of health and social welfare systems for prevention and support • Coordination of treatment and care for alcohol-use disorders and co-morbid conditions • Universal access to health services • Tracking alcohol-attributable morbidity and mortality • Improving capacity for prevention, identification, and interventions related to fetal alcohol syndrome and fetal alcohol spectrum disorder
Area 3: Community action	
• Facilitating recognition of alcohol-related harm and promoting responses at local level • Strengthening capacity and coordination of municipal policies • Providing information about and strengthening capacity for community level interventions • Community-level mobilisation to prevent under-age drinking, and support alcohol-free environments • Providing community care and support for affected individuals and their families • Community programmes and policies for at risk subpopulations, specific issues (eg, illicit or informal alcohol)	• Rapid assessments to identify gaps and priorities for interventions
Area 4: Drink-driving policies and countermeasures	
• Provision of alternative transportation, including public transport, until after closing time for drinking places	• Upper limit for blood alcohol concentration • Suspension of driving licences • Graduated licensing for novice drivers with zero-tolerance for drink-driving • Ignition interlocks (for vehicles) • Mandatory driver-education, counselling, and, as appropriate, treatment programmes • Public awareness and information campaigns about policy • Targeted high-intensity mass media campaigns • Sobriety check points and random breath-testing
Area 5: Availability of alcohol	
• Regulating the number and location of on-premise and off-premise alcohol outlets • Regulating days and hours of retail sales • Regulating modes of retail sales of alcohol • Regulating retail sales in certain places or during special events	• Introducing licensing system on retail sales or government monopoly • Minimum age for purchase or consumption • Policies to prevent sale to intoxicated persons or underage, which liability on sellers and servers • Policies to reduce or eliminate illicit alcohol production and distribution, and regulate informal alcohol

INCLUDED INTERVENTIONS	EXCLUDED INTERVENTIONS
• Policies regarding drinking in public places or at official public agencies' activities and functions	
Area 6: Marketing of alcoholic beverages	
• Restricting or banning promotions in connection with activities targeting young people • Regulating sponsorship activities that promote alcoholic beverages	• Regulating the content and volume of marketing • Regulating direct or indirect marketing in certain or all media • Regulating new forms of alcohol marketing techniques, for instance social media • Public agencies or independent bodies for surveillance of marketing of alcohol products • Setting up administrative and deterrence systems for infringements
Area 7: Pricing policies	
• *None*	• System for specific domestic taxation, with enforcement system, that considers alcoholic content • Reviewing prices in relation to inflation and income • Establishing minimum prices for alcohol • Banning or restricting use of direct or indirect price promotions, discount sales, sales below cost and flat rates for unlimited drinking or other types of volume sales • Providing price incentives for non-alcoholic beverages • Reducing or stopping subsidies to economic operators in the area of alcohol
Area 8: Reducing the negative consequences of drinking and alcohol intoxication	
• Regulating the drinking context to minimise violence and disruptive behaviour • Enforce laws against serving to intoxication and legal liability from serving of alcohol • Management policies on responsible serving of beverage on premises and staff training • Providing care or shelter for severely intoxicated people	• Reducing the alcoholic strength inside different beverage categories • Providing consumer information about, and labelling beverages to indicate, harm related to alcohol
Area 9: Reducing the public health impact of illicit and informally produced alcohol	
• *None*	• Issuing relevant public warnings about contaminants and other health threats from informal or illicit alcohol • Good quality control of production and distribution of alcoholic beverages • Regulating sales of informally produced alcohol and bringing it into the taxation system • An efficient control and enforcement system, including tax stamps • Cooperation and exchange of relevant information on combating illicit alcohol among authorities at national and international levels • Developing or strengthening tracking and tracing systems for illicit alcohol
Area 10: Monitoring and surveillance	
• *None*	• Frameworks for monitoring and surveillance activities, including surveys, with information exchange and dissemination • Institution or entity responsible for data collection and dissemination

INCLUDED INTERVENTIONS	EXCLUDED INTERVENTIONS
	• Defining and tracking a common set of indicators for harmful use of alcohol and policy responses • Repository of data at country level aligned with international indicators and data reporting • Evaluation mechanisms with collected data to determine interventions' impact on harmful use of alcohol

Adapted from WHO (2010) Global strategy to reduce the harmful use of alcohol[27]

We started by identifying literature on the effectiveness of relevant interventions at reducing alcohol consumption, alcohol-related injuries, and other alcohol-related harms. We prioritised finding relevant Cochrane Reviews, systematic reviews, meta-analyses, and narrative reviews, with a further emphasis on the most recent available reviews. We were most interested in studies that reported injury outcomes, with some attention to changes in alcohol consumption and other alcohol-related harms (eg, hospitalisations, police interactions). For interventions where there were either no or few relevant reviews, the reviews were dated, or other apparent gaps remained, we then identified high quality primary literature. The above literature was often informative of the barriers and facilitators toward implementation. However, for some interventions, we conducted additional searches to identify highly-relevant resources.

Within PubMed we conducted searches to identify all peer-reviewed literature on alcohol in NZ (note: PubMed includes the New Zealand Medical Journal). We reviewed all titles and abstracts of studies published since 2000 that included the words 'Zealand' and 'alcohol' in the title or abstract. Some additional document tracing and citation tracing was conducted on specific topics. We retained all studies that were directly relevant to the local-level interventions examined within this review.

Literature Synthesis

Using the identified research literature, we undertook a qualitative literature synthesis. For each WHO target area, we first provided an introduction that listed the in-scope interventions. We then identified which (if any) interventions were included within the five high-impact domains for action that form the WHO SAFER Initiative. Next, we briefly described the intervention. In a section on effectiveness, we summarised what is known about the relevant interventions' effectiveness to reduce consumption and injuries, and effects on any notable intermediate outcomes, such as traffic crashes. We identified the interventions that were most strongly associated with measurable changes in injury outcomes. For this subset of interventions, we then described what is known from effectiveness studies about how best to implement the strategies. This often encompassed an examination of facilitators (eg, opportunities) and barriers. Next, we explored what the peer-reviewed literature from NZ suggests on the potential implementation of local interventions to reduce alcohol-related injuries within the NZ local context. For some target areas, we included some additional considerations external to the research literature. Lastly, we provided a list of key points that summarise the findings in each target area, along with a brief list of recommending reading for that domain.

Results

Community Action (Area 3)

Introduction

Community Action is classified as 'Area 3' in the WHO's Global Strategy on Alcohol Control. Given this literature review's focus on local-level alcohol control interventions, it is highly relevant to discuss this set of approaches from the outset. Additionally, the research on *Community Action* aids in providing context for subsequent findings on other interventions, including some of the barriers and facilitators to meaningful alcohol control action at the local level.

Six out of seven *Community Action* interventions are applicable to NZ's current local context. These are: **facilitating recognition of alcohol-related harm and promoting responses at local level**; **strengthening capacity and coordination of municipal policies**; **providing information about and strengthening capacity for community level interventions**; **community-level mobilisation to prevent under-age drinking, and support alcohol-free environments**; **providing community care and support for affected individuals and their families**; and **community programmes and policies for at risk subpopulations**. None of these strategies is explicitly listed among the five high-impact strategies that make up the WHO SAFER Initiative.

There is potential overlap between research on *Community Action* (Area 3) and research on interventions that are categorised under different areas of the WHO's Global Strategy on Alcohol Control. For example, a study may examine the effects of community mobilisation to reduce alcohol-related harms through implementing a night-time street service in the city's night-time entertainment district. Would this be considered a *Community Action* (Area 3) intervention or an intervention in *Reducing the Negative Consequences of Drinking and Alcohol Intoxication* (Area 5)? To reduce this overlap, we consider *Community Action* research as a focus on studies looking at the impact of stimulating, supporting, and undertaking community action. The specific policies and programmes that a community undertakes are examined in subsequent sections. Though the WHO's Global Strategy on Alcohol Control includes within *Community Action* steps to reduce under-age drinking, providing alcohol-free environments, offering community support for those affected, and providing programmes for at-risk individuals, these approaches are covered in other areas.

Within the research literature, there is wide variation in what constitutes *Community Action* on alcohol. Local level action usually targets a defined geographical region, such as a small city or community. Action is led by entities including non-government community organisations or groups, local governments, or national governments, and largely involves at least some degree of community mobilisation. Some action is intended to be 'whole of community' consisting multi-component programmes and multi-setting interventions. Research on *Community Action* on alcohol describes the first steps as being community engagement and mobilisation. Typically a 'taskforce' is formed and consists of community members, leaders, and stakeholders who identify key issues of concern and develop appropriate responses. Partnerships are subsequently established with existing settings and services in the community, such as schools, sporting clubs, health care services, hospitals, police and justice services, local businesses, media promotion, and workplaces. A range of strategies may be used

with the aim to reduce alcohol use and associated harms, such as screening and brief interventions by health care providers, local media campaigns, responsible beverage services, increase police activity, or petitions to restrict alcohol sales outlet licensing. *Community Action* may be focused on achieving a particular type of change, such as reducing alcohol-impairing driving.

Effectiveness

There is some evidence examining the effectiveness of *Community Action* at reducing alcohol use, intermediate harms, and alcohol-related injuries. However, caution is necessary when interpreting the results as the identified studies vary widely in scope. Furthermore, the nature of the types of interventions that are commonly associated with local-level action is an important influence on whether or not *Community Action* appears to reduce alcohol use and harms. The following examined studies help to illustrate this.

Stockings and colleagues conducted a systematic review and meta-analysis of whole-of-community interventions aimed at reducing population-level harms from alcohol and other drug use.[22] 'Whole-of-community' was defined as interventions implemented in two or more community settings. Most of the included studies were focused on youth and scored poorly for quality, but this was in part due to the nature of the interventions. From their meta-analysis and narrative review, the authors concluded that 'Interventions to reduce alcohol and other drug use and harms applied to whole communities have resulted so far in small reductions in risky alcohol consumption, but have had little impact upon past month alcohol use, binge drinking, or 12-month marijuana use and the studies have been subject to high risk of bias' (p1984).[22] The authors also found no clear association between the interventions and delinquency, alcohol-related crime, assaults, arrests, motor vehicle crashes, or hospital admissions.[22]

Anderson and colleagues were particularly interested in the impacts of implementing comprehensive policies and programmes at the community or municipal level to reduce the harmful use of alcohol among adults. They conducted a review of reviews for all years to July 2017.[2] The authors did not provide a definition of what they considered to be 'comprehensive policies and programmes' but noted that such measures are often based on a municipal comprehensive strategy and action plan. Of the five most relevant reviews, no studies in the reviews reported comprehensive community or municipal interventions. The authors identified a community cluster randomised controlled trial (RCT) published after the review that showed no meaningful impact on alcohol-related crime, traffic crashes, hospital inpatient admissions, risky alcohol consumption, and hazardous or harmful alcohol use.[36] However, the study was statistically underpowered to detect significant differences. The trial was conducted in among 20 communities in Australia and involved thirteen interventions.[36] In designing their study, Anderson et al were motivated by what they observed as a mismatch between 'a long history of calls for city-based policies and action plans' (p3) and the insufficient evidence on the impact of community effectiveness to support these calls for action.[2] They point out that when the WHO's Global Strategy on Alcohol Control was under development, there was so little evidence on the cost-effectiveness of community action that this intervention group was excluded.[2] Pertaining to the results of their study, the authors state, 'We have not been able to find evidence for the effective impact of comprehensive municipal action plans in reducing the harmful use of alcohol amongst adults. There is, thus, dissonance between calls for action and evidence.' (p7)[2]

Research on *Community Action* to reduce alcohol use and harms shows little impact on alcohol-related injuries or on preceding measures such as alcohol use. However, there are important research gaps that lead to this finding. First, very little research is conducted to evaluate municipal-level action that is conducted in a comprehensive manner (ie, multiple interventions across a range of settings).[2] Second, few studies use a rigorous study design, such as a community cluster randomised controlled trial.[2] Third, the types of interventions undertaken at the community level frequently exclude the types of alcohol control measures that have been shown to be more impactful on alcohol use and associated harms, such as sales taxes and restrictions on availability.[2,22] Without these strong measures, *Community Action* is unlikely to demonstrate measurable impacts. Studies on *Community Action* report that the most common strategies were community-level engagement (eg, establishing task forces, mass media) and skills-based strategies (eg, education, school curricula) rather than interventions with stronger evidence of effectiveness.[22] These commonly selected strategies are feasible for communities to implement, but may also be selected as they are often less disruptive to social and economic interests in the community.[37] Legislative measures beyond the direct control of communities are likely to be more cost-effective on a wide range of alcohol-related harms.[36] Lastly, it is unclear if interventions are being implemented as intended given that there is very little research to measure intervention fidelity.[2,22]

Implementation

Bearing in mind the research gaps, there is still potential for local-level action aimed at reducing alcohol-related harms to translate into measured changes in alcohol use and harms. Here we identify research-based strategies to enhance the effectiveness of community and municipal efforts, and to overcome key challenges.

As identified earlier, *Community Action* is unlikely to achieve measureable changes in alcohol use, alcohol-related injuries, crimes, hospital admissions, or other similar harm unless the most effective alcohol control policies and programmes are included. In their review of reviews, Anderson and colleagues wrote:

> …the evidence base indicates that municipal action plans need to include, where jurisdictional authority allows, all of: sales taxes to increase the price of alcohol; reductions in the availability of alcohol through restrictions on outlet density and days and hours of sale; intensive implementation of drink drive restrictions through sobriety checkpoints and/or unrestrictive (random) breath testing; and, widespread deployment and scale-up of health care based screening and brief advice and treatment programmes… Municipal action plans should not be based on public education or mass media programmes alone, as these have been found to be ineffective in reducing the harmful use of alcohol. (p7)[2]

In their Table 1, Anderson et al present a useful list of 15 types of adult-oriented policies and programmes implementable at the local level, including evidence of impact and opportunity for local implementation.[2] Anderson and colleagues' findings about the effectiveness of certain interventions are consistent with results reported widely across the alcohol control research literature (eg[1,38]). Research on community partnerships with the alcohol industry reports that these partnerships yield no meaningful improvements on alcohol use and harms. This is because the interventions generated

from such partnerships are typically education and awareness, which are measures shown to be weak alcohol control strategies. The benefits generated from these partnerships largely favour alcohol industry stakeholders who can be seen in a positive light as fulfilling their corporate social responsibility. Community-alcohol partnerships also serve to divert community efforts from implementing more effective measures that impose restrictions on the alcohol industry and reduce profits from alcohol sales.[39]

Research identifies a number of challenges to consider when undertaking *Community Action* on alcohol. Such challenges consist of: the provision of adequate training, resources, and tools for local action; assembling and maintaining local resources and coalitions to sustain expertise; monitoring and evaluating the effects of policies requires sustained long-term commitments; and, vested interests in alcohol policy efforts, especially from the alcohol industry, need to be addressed.[3] Sustainable *Community Action* needs to overcome these challenges, as detailed in Giesbrecht and colleagues' review.[3]

Aotearoa New Zealand Context

An important consideration relevant to the NZ context is that there is very little international research that examines community action among Indigenous communities. Much of the research on strategies to reduce alcohol use and harms has been conducted among the 'general population' of high-income countries. This non-Indigenous research emphasises processes and outcomes that reflect Western values, such as measureable changes in alcohol use, injuries, and health service use. Among research that targets Indigenous populations, the interventions are largely un-adapted or culturally adapted, rather than culture-based interventions that focus on Indigenous ways of knowing and practices.[40]

Much published alcohol harms research within NZ fails to recognise te ao Māori (Māori worldview) and Māori perceptions of health. Māori health frameworks, such as Te Pae Mahutonga[41] helped inform Wright's[42] alcohol framework that reports four domains of alcohol-related harm. These domains are: hauora (wellbeing), te oranga (participation in society), mauriora (cultural identity), and taiao (physical environment).[42] Each domain traverses the individual, whānau, and community. There are a few examples of published research that uses a kaupapa Māori approach to address alcohol-related harms through a community approach, such as work by Brewin and Coggan on a community injury prevention project and Conway's study on alcohol and other drugs intervention.[40,43,44] The use of Pasifika health models is very rare.[45]

There are some other published examples of *Community Action* on alcohol within NZ that target objectives such as reducing the supply of alcohol to teens,[46,47] preventing rural drink driving,[48], and implementing a beach alcohol ban.[49] Other studies report the failure of NZ's new alcohol legislation to engage communities in local alcohol policies.[50,51] In a study of Māori communities, Kypri and colleagues concluded, ''In their response to Māori constituents on proposed alcohol policies, local governments were felt to lack the inclination or capacity to consult meaningfully. By devolving responsibility for alcohol availability while failing to compel and resource local government to give regard to treaty obligations, the new legislation risks widening existing health inequalities between Māori and non-Māori' (p331).[50]

Based on the Western research literature, there is very little convincing evidence that *Community Action* has a significant impact on reducing alcohol-related injuries. This research reflects the weaker interventions that are typically used at the local-level. An additional consideration that is specific to NZ is that all efforts to reduce alcohol-related harm should adhere to Te Tiriti o Waitangi (the Treaty of Waitangi), which will inherently require a strong community-based approach. In recent years, there has been increasing attention given to the need for the NZ Government to fulfil its responsibilities under Te Tiriti o Waitangi with regards to alcohol's impacts. A Waitangi Tribunal claim identifies the Act as failing to reduce the harm of alcohol in Māori communities.[52] The claim is currently being examined within the Tribunal's Health Services and Outcomes Kaupapa Inquiry (Wai 2575).[53] Other alcohol-relevant claims within Wai 2575 are that the Crown has failed to work in partnership with Māori communities to develop policies and services that target the causes of alcohol use and recognise te ao Māori.[54] Te Tiriti endorses Māori tribal self-determination and authority, which is especially important when considering community action.

Key Points

- Research on *Community Action* aids in providing context for this report's findings on other interventions, including some of the barriers and facilitators to meaningful alcohol control action at the local level.
- *Community Action* research focuses on studies looking at the impact of stimulating, supporting, and undertaking *Community Action*. None of the *Community Action* strategies are explicitly listed within the WHO SAFER Initiative.
- Two recent reviews of reviews reached similar conclusions that whole-of-community interventions or comprehensive policies and programmes at the local level failed to achieve meaningful or significant reductions in alcohol use or alcohol-related harms, including injuries.
- An important limitation of past *Community Action* research is that the types of interventions undertaken at the community level frequently exclude the types of alcohol control measures that have been shown to be more impactful of alcohol use and associated harms, such as sales taxes and restrictions on availability. Without these strong measures, *Community Action* is unlikely to demonstrate measurable impacts.
- There is very little international research that examines community action among Indigenous communities. Non-Indigenous research emphasises processes and outcomes that reflect Western values, such as measureable changes in alcohol use, injuries, and health service use. Much published alcohol harms research within NZ fails to recognise te ao Māori (Māori worldview) and Māori perceptions of health.
- All efforts to reduce alcohol-related harm should adhere to Te Tiriti o Waitangi (the Treaty of Waitangi), which will inherently require a strong community-based approach. Te Tiriti endorses Māori tribal self-determination and authority, which is especially important when considering community action.

Recommended reading:

- Research on the effectiveness and cost-effectiveness of alcohol control interventions: Burton et al 2017 'A rapid evidence review of the effectiveness and cost-effectiveness'[1]
- Research on the impact of alcohol control interventions with relevance to the local level: Anderson et al 2019 'City-based action to reduce harmful alcohol use – review of reviews'[2] (Table 1 provides a good summary)

- Challenges and recommendations for implementing local level action: Giesbrecht et al 2014 'Implementing and sustaining effective alcohol-related policies at the local level'[3]

Awareness (Area 1)

Introduction

Area 1 within the WHO's Global Strategy on Alcohol Control is 'Leadership, Awareness, and Commitment'. We refer to Area 1 as '*Awareness*' since the two in-scope interventions centre around education and awareness, specifically **public education and awareness programmes on alcohol's harms and available preventive measures,** and **raising awareness of harm to others and discouraging discrimination and stigmatisation of affected groups**. Neither of these interventions are included within the WHO SAFER Initiative.

With school-based programmes out of scope for this review, the examined research on *Awareness* largely focuses on the use of mass media to deliver health messages to a wide audience with the intention of motivating behaviour change (ie, public health mass media campaigns). Mass media includes television, radio, print, digital, and in more recent studies, social media. The reach depends on the mode, though national campaigns can have local-level methods for delivering messages throughout the community. The content of this education could be classified into three categories. The first is alcohol's harms to oneself and others, with common topics being drink driving and alcohol in pregnancy. Other types of mass media messaging have been about short-term harms (eg, violence, injuries), long-term harms (eg, cancers), underage drinking, and 'how-to-change' message.[55] We excluded reviews that looked at alcohol in pregnancy. The second content category is discouraging discrimination and stigmatisation of affected groups, for which we identified no relevant research. The last content category pertained to providing awareness of other specific interventions and support for those interventions, such as random breath testing or enforcement of liquor laws.

Effectiveness

The available research on public education and awareness programmes research is primarily about mass media modes of delivery. A few studies have examined the effectiveness of mass media messages on alcohol consumption and intermediate outcomes. The general conclusion from these studies is that there is little evidence that mass media campaigns reduce alcohol consumption.[2] There was some evidence that there were changes in knowledge, attitudes and beliefs.[4,56] For instance, Young and colleagues conducted a recent systematic review on mass media messages to reduce alcohol consumption and related harms, excluding those addressing drink driving interventions and college campus campaigns.[4] A total of 24 studies met the inclusion criteria, of which 13 studies measured consumption and found little evidence of reductions in alcohol consumption as a result of exposure to the campaigns. As for other outcomes, there was some evidence from a very limited number of studies that there were improvements in treatment seeking or information seeking behaviour, intentions/motivation, beliefs, attitudes, knowledge; however, these were also weak quality studies.[4]

When looking specifically at injury-related outcomes, the available evidence shows that alcohol harms public health campaigns produced no reduction on alcohol-related injuries. A systematic review was

conducted by Yadav and Kobayashi on mass media campaigns for reducing alcohol-impaired driving, with a particular focus on the outcomes of alcohol-related injuries and fatalities.[56] After using systematic review and meta-analysis methods, the authors stated 'We could not conclude that media campaigns reduced the risk of alcohol-related injuries…' (pg1) pointing to the very heterogeneous studies. A more recent study that was not included in the review was a study testing for an association between alcohol control public service announcements (PSAs) in various US states and rates of drunk-driving fatal crashes. The authors report finding that higher volumes of anti-drunk driving PSAs were followed by modest reduced rates of drunk-driving fatal crashes.[57] However, this was a single study and does not overturn the heterogeneity seen when examining across multiple studies.

What do researchers attribute to the lack of effectiveness shown in studies of public health information campaigns on alcohol? One important consideration is the poor quality of current studies on this topic, which has been noted by authors of recent reviews.[4,56] Stronger study designs could yield more rigorous results and could strengthen conclusions about the effectiveness or lack of effectiveness. Related to weak study design is that a number of evaluated mass media campaigns are not explicitly aimed at changing alcohol consumption or injuries, and may in fact be ill-suited to change these outcomes.[4] Lastly, is the consideration of the context in which alcohol-related public health education and awareness is delivered. Young and colleagues write, 'The context in which alcohol health promotion campaigns operate is particularly challenging because of the ubiquity and power of alcohol marketing and pro-alcohol cultural norms. This is [a] key difference to tobacco, where health campaigns in recent years have run in a context where most tobacco marketing has been banned or strictly regulated and social norms have become increasingly anti-smoking' (p314).[4]

Implementation

Based on our review of the evidence, public education and awareness education programmes on alcohol, especially mass media campaigns, appear unlikely to result in reductions of alcohol-related injuries. In comparison to interventions that change the alcohol environment rather than attempt to instigate behavioural change through education and awareness, this is a weak policy mechanism. However, despite their minimal effectiveness on downstream outcomes, mass media campaigns are likely to form a component of any jurisdiction's alcohol harm reduction strategy. When designing such campaigns, creators should consult the relatively rich selection of literature that examines what increases the saliency of messages and other facilitators that could marginally increase the impact on outcomes such as consumption.[57–60]

Aotearoa New Zealand Context

Awareness activities show little evidence of reducing alcohol-related injuries, and are not recommended as a primary strategy for NZ. If *Awareness* activities are undertaken regardless of the research evidence, some researchers recommend that such campaigns target areas where knowledge is low (eg, the long term risk of alcohol on cancer risk) and that campaigns can play a supportive role in other strategies that are more like to have an impact on behaviour.[2,4] It is essential to closely engage with key population groups, especially Māori, and it is recommended that priority groups have a lead role in designing and implementing the *Awareness* activities. While the use of awareness and education has been researched quite extensively internationally, the research in NZ is limited to studies such as a community-based intervention to reduce the supply of alcohol to under-age young people.[61]

Key Points

- The in-scope Area 1 activities centre around education and awareness, which are not included within the WHO SAFER Initiative. We refer to this area as '*Awareness*'.
- The examined research on *Awareness* largely focuses on the use of mass media to deliver health messages to a wide audience with the intention of motivating behaviour change (ie, public health mass media campaigns).
- Based on the existing literature, mass media campaigns do not reduce alcohol consumption, injury-related outcomes, nor other types of harms. However, the literature is heterogeneous in terms of the settings, interventions, and whether or not the intervention was effective.
- Weak study designs are one component that contributes to limited demonstrable effectiveness of alcohol awareness efforts. An equally important limitation is the context in which alcohol-related public health education and awareness is delivered. Researchers have noted: 'The context in which alcohol health promotion campaigns operate is particularly challenging because of the ubiquity and power of alcohol marketing and pro-alcohol cultural norms. This is [a] key difference to tobacco, where health campaigns in recent years have run in a context where most tobacco marketing has been banned or strictly regulated and social norms have become increasingly anti-smoking' (p314).[4]
- Despite their minimal effectiveness on downstream outcomes, mass media campaigns are likely to form a component of any jurisdiction's alcohol harm reduction strategy. When designing such campaigns, creators should consult the relatively rich selection of literature that examines what increases the saliency of messages and other facilitators that could marginally increase the impact on outcomes such as consumption.
- If *Awareness* activities are undertaken regardless of the research evidence, some researchers recommend that such campaigns target areas where knowledge is low (eg, the long term risk of alcohol on cancer risk) and that campaigns can play a supportive role in other strategies that are more like to have an impact on behaviour.
- It is essential to closely engage with key population groups, especially Māori, and it is recommended that priority groups have a lead role in designing and implementing the *Awareness* activities.

Recommended reading:

- Research that examines the effectiveness of mass media campaigns: Young et al 2018 'Effectiveness of mass media campaigns to reduce alcohol consumption and harm: a systematic review'[4]

Health Services' Response (Area 2)

Introduction

We identified two categories of *Health Services' Response* (Area 2) that are in-scope: **screening and brief interventions in primary health care and other settings** and **provision of culturally sensitive health and social services.** Both of these intervention categories are within the WHO SAFER's policy domain of 'Facilitate access to screening, brief interventions and treatment.' Interventions that were deemed out of scope for this review were treatment and care strategies and services for alcohol-use

disorders, activities related to fetal alcohol syndrome and fetal alcohol spectrum disorder, and the effectiveness of pharmaceuticals for alcohol use disorders. 'Provision of culturally sensitive health and social services' could be interpreted quite broadly with respect to the setting, type of service, and what 'culturally sensitive' could entail. As a result, this strategy could apply to a very wide range of interventions (eg, child and family services, addictions treatment, prison support, etc). The WHO's Global Strategy on Alcohol Control does not provide any clarification on what this category is intended to include or exclude. Furthermore, other evidence reviews based on the WHO's Global Strategy on Alcohol Control, such as a PAHO report on alcohol and injuries,[25] do not address or elaborate on this intervention. Given the lack of specificity, the possibly very large range of in-scope literature, and that this intervention category is commonly not examined in other alcohol intervention evidence reviews, we did not explore this strategy further within this review.

The aim of screening and brief intervention is the identification and management of hazardous and harmful drinking among individuals who are not actively seeking help for alcohol problems. This can include referral to treatment. Research on this type of intervention focuses on primary care settings and emergency care settings. There is also some work looking at general hospital wards and other settings, such as pharmacies. Workplace-based screening and brief intervention has been shown to be largely ineffective;[2] we exclude this setting from this review. The target groups are typically alcohol consumers who are at early-stage and less severe alcohol dependence. The intervention usually involves using one of a number of available screening assessment tools available.[62] The brief intervention typically consists of feedback on the person's alcohol use, information about potential harms and benefits from reducing intake, and advice on how to reduce consumption. There may be the development of a personal plan to help reduce consumption. This type of approach uses a behaviour change approach and may be motivationally-focused counselling. Historically, screening and brief interventions were delivered in-person, but there is now a growing number of versions that are technically-supported, e-based interventions. Pregnant woman and women of reproductive age may be the focus of screening and brief intervention, but were deemed out of scope by ACC for this review.

Effectiveness

Based on a large body of research, screening and brief interventions are considered effective at reducing alcohol consumption. This intervention is one of the most researched alcohol reduction strategies. There is a very large and varied body of literature on the topic, with some remaining gaps among certain populations or types of interventions. Here we focus on the most recent and relevant reviews and studies. Given that this type of intervention lends itself well to being conducted within a randomised controlled trial setting, the studies that examine consumption as an outcome are generally considered to be at least moderate quality. The most recent identified large-scale review was a Cochrane Review by Kaner and colleagues' 2018.[63] The authors examined the effectiveness of brief alcohol interventions in general practice or emergency care settings. Based on 69 studies, the authors concluded that 'brief interventions can reduce alcohol consumption in hazardous and harmful drinkers compared to minimal or no intervention. Longer counselling duration probably has little additional effect' (pg2).[63] The reduction was seen among both males and females.[63] Schmidt et al's systematic review and meta-analysis of brief interventions specifically conducted in emergency care settings found similar conclusions to Kaner and colleagues. They found that there were reductions, albeit it small, in alcohol consumption, with no additional benefit from more intensive interventions

(33 publications from 28 individual studies). The authors reported that non-face-to-face interventions were equally effective as in-person interventions, but this finding is based on a very small number of studies.[5] Reductions in alcohol consumption were also seen in a slightly different setting: McQueen and colleagues in their 2011 Cochrane Review looked at alcohol users admitted to general hospital wards.[64]

As for injuries, the relationship between screening and brief interventions and injuries has been examined in research literature, though not as widely as alcohol consumption. Given the more limited literature available, the results are more varied and less certain. However, there is sufficient literature available to conclude that screening and brief interventions are associated with reductions in injuries. There are a handful of systematic reviews that have examined this relationship. In a 2008 meta-analysis, the authors reported that an emergency department-based intervention was associated with approximately half the odds of experiencing an alcohol-related injury.[20] An older review by Nilsen et al on emergency care settings used a systematic review design, which provides less direct results than a meta-analysis and is more open to the authors' interpretation. The authors looked at outcomes including injury frequency and other alcohol-related negative consequences (eg, getting into a physical fight), with the included studies largely suggestive of a reduction in injury rates compared to control groups.[65] In a more recent 2016 review with a similar population and intervention, the authors reached similar conclusions that brief interventions reduce injury rates, and may reduce risky driving and motor vehicle crashes due to alcohol use.[66]

A limitation of the studies conducted in the emergency department is that the screened populations frequently appeared in the emergency department due to some type of injury. Some authors have hypothesised that the occurrence of an injury helped to stimulate behaviour change around alcohol use, so the apparent effectiveness of the brief intervention may be enhanced by the injury event.[66,67] Other authors have suggested that the reduction in future injuries may not be due to changes in alcohol consumption, and may instead be related to behaviour changes due to the experience of an emergency medical event.[20,66] The cause of the injury (eg, motor vehicle or other cause) may provide reason to modify alcohol use.[65] There are other studies that have come out more recently or address settings and populations that have not yet been explored in systematic reviews, with mixed results.[68–71] However, given how much studies can vary in the intervention, population, setting, and other design considerations, it is difficult to draw conclusions based on a single or small number of studies. Based on the existing published reviews, brief interventions appear to be associated with reductions in injuries.

Implementation

Given that screening and brief interventions are effective at reducing alcohol consumption and injuries, what can be done to enhance their effectiveness? That is, what are the barriers to be overcome and the strategies that can lead to better outcomes? There is quite a bit of research examining these types of questions, and we examined only a few key resources.

Researchers have taken a few different approaches to understand what motivates people to change and what is associated with better outcomes from this intervention. Some researchers have explored this quantitatively by using regression modelling that examines whether or not various characteristics are associated with improved outcomes such as greater reductions in alcohol consumption. An

especially useful study is by Platt et al (2016), who set out to examine whether the effect of alcohol brief interventions on consumption differs by setting, practitioner group, and content of the intervention. The authors concluded: 'Findings show the positive role of nurses in delivering interventions' (p1).[6] The authors also wrote: 'We found that neither setting nor the content appeared to significantly moderate intervention effectiveness: we found little evidence on the effectiveness of brief interventions in community settings or [Accident & Emergency]; brief advice was the most effective content in reducing the quantity of alcohol consumed but not the frequency of drinking and there seemed to be little difference in the effect of [motivational interviewing] or [motivational interviewing] plus on either the quantity or frequency outcomes' (p15). Inconclusive results have been reported in studies that examined what motivates behaviour change and who is most likely to benefit.[5,72,73]

Researchers on this topic acknowledge that different settings attract different types of patients, requiring different variations of screening and brief intervention.[74] There is also much scope for work in non-clinical settings.[75] Furthermore, consideration should be given to who might not end up being screened even within an emergency department setting. A recent study showed that patients with any of these risk factors, or a combination of these risk factors, were less likely to be screened: male sex, alcohol-related visit, any intoxication, head injury, any kind of wound, major trauma, at least one risk factor for hazardous alcohol use, and being unable or unwilling to cooperate.[76]

From a qualitative research approach, there are quite a number of studies that have attempted to distil a very large body of research to identify what works best, with some notable examples.[77,78] This is a very specific area of evaluation, requires quite a degree of technical expertise, and is highly specific to the context. There are sets of guidance that are specific to different populations. For example, in Patton's article entitled 'Alcohol screening and brief intervention for adolescents: the how, what and where of reducing alcohol consumption and related harm among young people', the authors provide specific recommendations on the types of tools, content, number of sessions, and settings for this population.[79] Furthermore, as far as evaluative research, there are some excellent studies on what enhances the successful implementation of this strategy. For example, in an evaluation of the Colorado state-wide screening and brief intervention for substance use programme, the authors found that successful implementation requires: '(1) strong clinical and management advocates; (2) full integration of services into practices' workflow utilising technology where possible' (3) interprofessional team approaches; (4) appropriate options for the small proportion of patients screening positive for possible substance use disorders; (5) cannabis screening that accounts for legalisation, and interventions that acknowledge differences between alcohol and cannabis use; (6) incorporate screening, brief intervention, and referral to treatment into standard health care professionals' training; and (7) addressing the significant issues regarding reimbursement through private and public payers for services.'[80] A final consideration is the need for developing culturally informed and appropriate services. While this is examined in literature that is specific to different populations,[81] we highlight some relevant studies in the following section.

Aotearoa New Zealand Context

Similar to the international research, *Health Services' Response* is the most widely researched alcohol control intervention for the NZ context, yet very little research is specific to Māori. We identify the relevant NZ research, but do not describe existing clinical guidelines for NZ on screening and brief

interventions. Existing research has examined views toward providing alcohol screening and brief intervention by emergency department physicians,[82] by pharmacists,[83–86] by maxillofacial surgeons,[87] or via text messages.[88] There has been some testing of different screening tools among university students[89] and potential detection rates of hazardous drinking have been quantified for general practice settings.[90] Studies have examined the feasibility and challenges of undertaking screening and brief intervention for alcohol and other drugs in the emergency department by nurses,[91,92] and in general practice settings.[93–95] There has been a trial of a text message-based brief intervention among injured patients discharged from a trauma ward which showed a reduction in hazardous drinking, with a similar effect for Māori and non-Māori.[96,97] Also, another trial of a web-based alcohol screening and briefing intervention for university students showed no change, except for a possible small reduction in the amount of alcohol consumed per drinking occasions.[98]

Key Points

- We identified two categories of *Health Services' Response* (Area 2) that are in-scope: screening and brief interventions in primary health care and other settings and provision of culturally sensitive health and social services. Both of these intervention categories are within the WHO SAFER's policy domain of 'Facilitate access to screening, brief interventions and treatment.' The latter intervention was not defined within the WHO's Global Strategy on Alcohol Control and was not examined further within this review due to this lack of specificity.
- The aim of screening and brief intervention is the identification and management of hazardous and harmful drinking among individuals who are not actively seeking help for alcohol use problems. This can include referral to treatment.
- Based on a large body of research, screening and brief interventions are considered effective at reducing alcohol consumption. This intervention is one of the most researched alcohol reduction strategies. There is a very large and varied body of literature on the topic, with some remaining gaps among certain populations or types of interventions.
- There is sufficient literature available to conclude that screening and brief interventions are associated with reductions in injuries.
- Platt and colleagues used quantitative approaches to examine whether or not various characteristics are associated with improved outcomes of screening and brief interventions. This study provides useful recommendations on what enhances implementation.
- There are numerous qualitative studies that have attempted to distil a very large body of research to identify what works best.
- Similar to the international research, *Health Services' Response* is the most widely researched alcohol control intervention for the NZ context, yet very little research is specific to Māori.

Recommended reading:

- Research on the impact of brief interventions, with an examination of potential barriers and facilitators: Schmidt et al 2016 'Meta-analysis on the effectiveness of alcohol screening with brief interventions for patients in emergency care settings'[5]
- Quantitative approach to identifying what moderates the effectiveness of screening and brief intervention: Platt et al 2016 'How effective are brief interventions in reducing consumption: Do the setting, practitioner group and content matter? Findings from a systematic review and meta-regression analysis'[6]

Drink-Driving Policies and Countermeasures (Area 4)

Introduction

We identified two main types of interventions related to *Drink-Driving Policies and Countermeasures* (Area 4) that could be implemented at a local level. The first is the **provision of alternative transportation, including public transport, until after closing time for drinking places**. This intervention is listed among the WHO SAFER policies in the 'Advance and enforce drink driving counter measures' domain. The second, which was not explicitly included in the WHO's Global Strategy on Alcohol Control but fits in this domain, was **workplace alcohol testing for occupational drivers**. Both of these interventions are aimed at reducing harm due to driving while intoxicated and could be implemented at the local level. A limitation of interventions in the *Drink-Driving Policies and Countermeasures* is that focusing on drinking and driving only impacts a specific type of alcohol-related harm and does not target other adverse consequences such as assault, e-scooter injuries, or pedestrian injuries.

Alternative transport aims to reduce the harms of drink driving by providing safe transport after drinking. Alternative transportation programmes include the (enhanced) provision of public transport, use of taxis or ride-share apps, and designated driver programmes. Designated driver programmes could be population-based campaigns that encourage designated driver use (eg, mass media campaigns) or programmes in drinking establishments to incentive people to use designated driver programmes. A combination of methods may be used.

The second type of intervention was workplace alcohol testing for occupational drivers. This type of intervention is typically set by the employer and is aimed at improving workplace safety and productivity. Employees are tested for the use of alcohol and other drugs. Testing may be random, pre-employment, for reasonable cause post-incident, reasonable suspicion, prior to return-to-work, follow-up, or post-rehabilitation monitoring. The type of companies that engage in this testing are typically occupational drivers (vehicles that carry passengers, transport goods or services, or other, such as people who might operate vehicles as part of their work). Testing may be a stand-alone intervention or combined with other workplace measures to reduce the use of alcohol and other drugs.

Effectiveness

There is scant research on the effectiveness of the provision of alternative transport on alcohol consumption and any intermediate outcomes. Altogether the literature that there is suggests that alternative transport programmes have little or no effect on reducing alcohol consumption among drivers. Ditter et al's systematic review from 2005 found that population-based programmes did not change self-report alcohol-impaired driving or riding with an alcohol-impaired driver, while incentive programmes produced a modest increase in the number of designated drivers.[99] Another review reached a similar conclusion.[100] Additional evaluations have been conducted for designated driver programmes in Australia, Italy, and the US. In Australia, the designated driver programme had no effect on designated drivers' alcohol consumption, nor on alcohol-related crashes in the area.[101] In the Italy and US studies, designated drivers' consumption was slightly lower due to the interventions.[102,103]

The US authors report that passenger Breath Alcohol Concentration did not increase, which was suggestive of no beneficial impact.

For the provision of public transport after hours, Australian studies conducted in Melbourne examined the effects of implementing 24-hour public transport, and with the authors of one study concluding: 'The current findings do not suggest that increasing public transport will reduce alcohol-related harm associated with late-night entertainment precincts' (p317).[7] There was no change in police-recorded assaults, ambulance attendances, or crashes for the entirety of the night. However, between 1-2am on Sunday morning there was a significant reduction in road crashes. After the introduction of 24-hour public transport, there was a significant *increase* in patron intoxication, spending more time, and spending more money in the night entertainment district. These outcomes were of benefit to the alcohol providers. The authors identify some limitations, including potential confounding factors and that the study may not have had enough data points to detect small differences.[104] Not driving (ie, using other modes of transport) was associated with higher blood alcohol concentration.[105]

We could not identify any literature that specifically examined the impact of alternative transport on alcohol-related injuries specifically. The most relevant studies are those described above that looked at intermediate outcomes, such as assaults, ambulance attendances, and traffic crashes.

While in theory, alternative transport programmes are intended to reduce harms,[106,107] researchers point to possible adverse effects. For example, the provision of late night affordable public transport may provide an incentive to stay out later, drink more (because of not driving), and spend more money on alcohol or other drugs. Designated driver programmes may send an indirect message that excessive drinking is acceptable if one is not driving. Additionally, alternative transport measures are a weaker intervention than other options available at the local level. Curtis and colleagues write 'There is a strong body of evidence from around the world regarding effective interventions for reducing alcohol-related harm in nightlife…The strongest is for the restriction of very late-night trading hours…and limiting the density of outlets selling alcohol… Such measures are unpopular with the alcohol industry, which uses an array of strategies to avoid such restrictions. One of its most common claims is that alcohol is not the cause of violence, and, for that reason, if the government provided adequate public transport, the patrons that the industry just profited from would not then fight on the street' (p317).[7] The authors found that the provision of public transport did not reduce assaults and violence, contrary to claims from the alcohol industry that this measure would be sufficient to improve alcohol-related harms.[7]

A challenge when determining whether workplace drug testing contributes to changes in alcohol consumption or any intermediate outcomes is that experts on this topic report that the available evidence is generally poor quality. In their 2014 systematic review of studies, Pidd and Roche report that not all survey measures of included studies differentiate between alcohol and other drugs. There were 6 studies on lowering employee substance use and 17 studies on crash or injury rates. However, the authors concluded that, 'much of the evidence concerning the efficacy of workplace testing is poor quality.'[108] The study that the authors considered to have a strong methodology is by Brady et al.[109] More recent evidence from Australia suggest that alcohol and/or drug testing in isolation does not lead to reduced employee substance use. Testing is more effective when combined with

comprehensive policies that include a workplace alcohol/drug policy, plus information, education, and assistance.[110]

When examining the effectiveness of workplace testing for alcohol on alcohol-related injuries, there are a few reviews that are useful for understanding the topic.[111] The most recent review is the Pidd and Roche review from 2014 that flagged concerns about the quality of included studies. The authors conclude: 'Despite these qualifications, the results of the current review indicate that random alcohol testing may have potential to reduce occupational injury rates, at least in the case of the transport industry.'[108] The highest quality study within their review was by Brady et al that looked at mandatory alcohol testing programmes for motor carrier drivers in the USA. After adjusting for potential confounders, mandatory alcohol testing programmes were associated with a 23% reduced risk of alcohol involvement in fatal crashes by operators of large commercial motor vehicles. Mandatory testing included pre-employment testing, random testing, reasonable suspicion testing, and post-crash testing. The authors did not examine nonfatal crashes.[109] A 2009 Cochrane Review that used data from a single study on alcohol testing, reported that the tests were followed by fewer crashes in the short-term, but had no effect on the long-term trend.[112] A protocol for a Cochrane Review on random drug and alcohol testing for preventing injury in workers was published in early 2018, suggesting that an updated systematic review may be forthcoming.[113]

Implementation

There is not sufficient evidence on the effectiveness of alternative transportation on alcohol-related injuries; therefore the implementation of this intervention will not be discussed here. However, the evidence on workplace alcohol testing merits an examination of implementation. An important first consideration before implementing workplace drug testing is to compare the potential benefits to potential harms. Such harms include the fallibility of testing and how false positive or false negatives may impact outcomes, the risk of legal proceedings against employers, damaged employer-employee relations, and potential underreporting of minor injuries or 'near misses' to avoid potential testing. Additional issues on ethics, racial bias, time and resource costs, and productivity have been raised.[112] A survey among Australian workplaces reported that testing is not a popular measure for reducing alcohol-related harms.[110]

We identified two useful resources for informing workplace alcohol interventions in general. First, Cameron and colleagues conducted a process evaluation of a workplace alcohol intervention in Australia.[114] They found that uptake and sustainability was enhanced by taking a 'whole-of-workplace' plus a 'co-production' approach during intervention development and implementation. Seven potential barriers or facilitators were identified: (1) attitudes toward alcohol in the workplace; (2) policy development and awareness; (3) referral pathways and access to support; (4) participation and equity: production pressure; (5) participation and equity: language barriers; (6) communication, and (7) sustainability of the intervention. Of the two sites, one included alcohol and drug testing.[114] Members of this research group contributed to the second recommended resource: a 2019 book chapter entitled 'Drug use and workplace safety: issues and good practice responses.'[8] In addition to reviewing the effectiveness of interventions, the authors describe good practice strategies.

Aotearoa New Zealand Context

When considering what *Drink-Driving Policies and Countermeasures* to implement within NZ, roadside testing is probably a more urgent and effective strategy than the provision of alternative transportation and workplace alcohol testing. Local communities may choose to examine how to increase the availability and use of alternative transport if local government is willing to take on the cost of such measures despite the relatively little success shown toward reducing consumption and alcohol-related injuries. The Sale and Supply of Alcohol Act 2012 (s54) specifies host responsibilities – a condition of licences is that the licensee provides assistance with, or information about, alternative forms of transport. However, enforcement of alcohol service policies requires resources and has shown little change in licensee practices (see 'Reducing the negative consequences of drinking and alcohol intoxication') or drinking outcomes. Regarding workplace testing, Employment New Zealand states that alcohol or drug tests can only be required of employees and other workers if it is a condition of their appointment and recorded in the employment agreement or other document. For such a condition to be included, the employee must work in a safety sensitive area.[115] The very limited literature available suggests that this intervention can be effective, but unfortunately reaches only a very small proportion of the drinking and/or driving population.

Key Points

- We identified two main types of interventions related to *Drink-Driving Policies and Countermeasures* (Area 4) that could be implemented at a local level. The first is the provision of alternative transportation, including public transport, until after closing time for drinking places. This intervention is listed among the WHO SAFER policies in the 'Advance and enforce drink driving counter measures' domain. The second, which was not explicitly included in the WHO's Global Strategy on Alcohol Control but fits in this domain, was workplace alcohol testing for occupational drivers.
- There is very little research on the effectiveness of the provision of alternative transport. Altogether the literature suggests that alternative transport programmes have little or no effect on reducing alcohol consumption among drivers.
- We could not identify any literature that specifically examined the impact of alternative transport on alcohol-related injuries. The most relevant studies are those that looked at intermediate outcomes, such as assaults, ambulance attendances, and traffic crashes.
- Researchers point to possible adverse effects of alternative transport programmes. For example, the provision of late night affordable public transport may provide an incentive to stay out later, drink more (because of not driving), and spend more money on alcohol or other drugs. Designated driver programmes may send a message that excessive drinking is acceptable if one is not driving.
- The evidence on workplace testing for alcohol has a number of quality concerns but indicates that workplace alcohol testing may reduce occupational injury rates among the transport industry.
- There are potential harms from implementing workplace alcohol testing (eg, fallibility of testing, damage to employer-employee relationships, ethical concerns). We identified two useful resources for informing workplace alcohol interventions in general.

- When considering what *Drink-Driving Policies and Countermeasures* to implement within NZ, roadside testing is probably a more urgent and effective strategy than the provision of alternative transportation and workplace alcohol testing.

Recommended reading:

- Research that evaluated the impact of public transport in Melbourne on alcohol-related harms: Curtis et al 2019 'The impact of twenty-four hour public transport in Melbourne, Australia: An evaluation of alcohol-related harms'[7]
- Recommendations for workplace drug policies: Pidd et al 2019 'Drug use and workplace safety: Issues and good practice responses'[8]

Availability of Alcohol (Area 5)

Introduction

The *Availability of Alcohol* is an important domain for local level action. There are multiple strategies in the WHO's Global Strategy on Alcohol Control that are applicable within the current NZ local context: **regulating the number and location of on-premise and off-premise alcohol outlets**; **regulating days and hours of retail sales; regulating modes of retail sales of alcohol**; **regulating retail sales in certain places or during special events**; and **policies regarding drinking in public places or at official public agencies' activities and functions**. These strategies are part of the WHO SAFER Initiative in the domain 'Strength restrictions on alcohol availability'. In addition to alcohol outlets such as bars, supermarkets, restaurants, and clubs, many of these policies can be applied to special settings such as sports clubs, festivals, and government buildings.

Based on the published research literature, this review focuses on the first two types of *Availability of Alcohol* interventions. The number and location of alcohol outlets is often measured using 'outlet density'. Taylor et al define outlet density as the 'the concentration of liquor serving venues per kilometre of road way or by the number of venues per persons in a defined area' (p3).[116] Regulating days and hours of retail sales is based on the hours that a licensed venue can serve alcohol drinks, with restrictions focused on how late the venue can sell alcohol.[116] An additional strategy is the use of drinks restrictions, which 'restrict patrons access to certain types of drinks that are designed to rapidly intoxicate patrons (eg shots). This physically restricts access to types of alcoholic beverages after a given time at night' (p4).[116] Given the very limited literature, we provide only brief comments on modes of retails sales, control in certain places or special events, and drinking in public places or public facilities (eg, public drinking bans).

Effectiveness

There are numerous studies looking at the effectiveness of restrictions on the *Availability of Alcohol*, many of which examine outcomes such as injuries, assaults, crimes, and other measures of harm. Here we focus on the studies that examine injuries and injury-related outcomes (eg, assaults, hospitalizations, etc).

The number and location of on-premise and off-premise alcohol outlets is associated with increased alcohol consumption and is strongly associated with more immediate harms such as alcohol-related

injuries and social disorder.[1,2,117–119] Based on emerging evidence, restrictions on alcohol outlet densities are effective at reducing hospitalisations attributable to alcohol-related conditions and other harms.[120,121] Historically, studies on the effectiveness of outlet density restrictions on alcohol-related harms have been considered low or moderate quality, with the majority of the research based in Australia or North America.[1] Recently there has been rapid growth in this area of research due to progress on local alcohol policies within the UK and robust evaluative studies of these changes. An updated review of this policy measure is not available. Instead, we identify key primary studies. In their evaluation of English local authority alcohol licensing, de Vocht and colleagues observed an exposure-response association between more intense alcohol licensing policies and stronger reductions in alcohol-related admission rates. Compared to local areas with no active licensing policy in place, local areas with the most intensive licensing policies saw a further 5% reduction in admission rates.[122] Reductions in violent crimes, sexual crimes, and public order offences have also been reported.[123]

Evidence on the effectiveness of reducing outlet days and hours of retail sales indicates that this is an effective intervention for reducing alcohol-related harm. Nepal and colleagues conducted a very recent systematic review (2020) looking at the effects of extending trading hours (primarily on-licence premises) or restricting trading hours (both on- and off-licence premises).[9] By examining 22 included studies with various outcomes, the authors concluded, 'extending trading hours at on-licence premises was typically followed by increases in the incidence of assault, unintentional injury, or drink-driving offenses. Conversely, restricting trading hours at on- and off-licence premises was typically followed by decreases in the incidence of assault and hospitalization' (p5).[9] These results are largely consistent with previous published reviews on trading hours.[117,124–128] In an earlier review published within the Lancet, the authors rated the quality of research evidence on hours and days of sale as 'moderate', and reached similar conclusions on the effectiveness, emphasizing the importance of availability during late night hours in the on-licence premise outlets (bars, etc).[1] In their systematic review of alcohol consumption and physical availability of take-away alcohol, Sherk et al estimated that adding one additional day of sale was associated with a per capita consumption increase of 3.4% for total alcohol. Differences specific to beer, wine, and spirits were also reported.[119]

The remaining *Availability of Alcohol* intervention categories are modes of retails sales, control in certain places or special events, and drinking in public places or public facilities. The relationship between different modes of retail sales (eg, online sales) and alcohol consumption is an emerging research topic. While we could not identify any studies specific to this topic, the findings related to other alcohol availability interventions apply – greater access to alcohol is associated with higher consumption and greater harms; restrictions on alcohol access serve to reduce these harms. Drinks restrictions, such as limiting when liquor ('shots') can be sold, have been examined in several studies and found to be an ineffective measure for reducing alcohol consumption or alcohol-related harm.[129,130] Preventing the consumption of alcohol within public facilities (eg, buildings owned by the local government) is an achievable step toward de-normalising alcohol use. As for public drinking bans, the limited evidence shows that these have no impact on consumption, but are associated with increases in the perception of public safety.[1] This measure is implemented to reduce crime and disorder, but not to reduce alcohol consumption. Public drinking bans have been shown to have a harmful impact on marginalised groups.[1]

Implementation

Given the strong evidence of the effectiveness of regulating the number and location of on-premise and off-premise alcohol outlets, as well as regulating days and hours of retail sales, we highlight the research evidence on barriers and facilitators toward the adoption of these policies. There is a sizable body of research examining the use of local alcohol policies within the United Kingdom and Scotland. In England, discretionary Cumulative Policy Impacts have been used in efforts to restrict alcohol outlet density in areas deemed already saturated, with varying experiences and outcomes.[131] Using an ethnographic approach, researchers have examined the decision-making processes. They found that the objectives and framings varied on a case-by-case basis, with public health priorities and evidence at times intersecting or lying outside the interests of local authority stakeholders, residents, and commercial interests. The licensing process focused on social disorder more than health harms.[132]

Based on England's local alcohol policies, authors recommend that public health goals should be prioritised within local alcohol strategies.[132,133] However, research from Scotland shows that even when 'protecting and improving public health' is included as a licensing objective, it cannot overcome inherent limitations and public health disadvantages of the local alcohol licensing system.[134] In the Scottish experience, some licensing actors did not accept public health as a legitimate goal, or economic interests were prioritised.[135] Researchers identified a lack of accountability to ensure the inclusion of public health goals.[11]

In the absence of national policy change that elevates the status of public health goals, Reynolds and colleagues recommend that 'pragmatic approaches for strengthening public health influence over alcohol licensing are required, including promoting relationships between stakeholders and offering opportunities for [public health practitioners] to share best practice about making effective contributions to licensing' (p1).[10] Case studies have explored the characteristics and drivers of differences between two local authority areas that produced very different policy outcomes. Four factors contributed to differences: (1) the importance and profile of night-time economies were viewed differently; (2) organisational and structural components such as proximity to addictions treatment; (3) the availability of additional dedicated resources; and (4) availability of specialist advice or clinical champions.[136] Public health practitioners report limitations due to resource challenges, as well as feeling that their efforts were achieving little impact.[137]

Many of the above barriers and facilitators pertain to reducing the number and location of alcohol outlets, as well as reducing the days and hours of retail sales. A common argument in opposition to restricting days and hours of operation is the potential economic impact.[138] To counter these arguments, Middleton et al recommend that 'Additional research is also needed to more fully assess the costs and benefits of restricting the number of days of sale. From a societal perspective, these should include intervention costs; loss of sales and tax revenues and employment; reductions in fatal and nonfatal injuries, crime, and violence; gains in safety and public order; and averted loss of household and workplace productivity' (p587).[138]

Aotearoa New Zealand Context

Interventions to reduce the *Availability of Alcohol* are highly applicable to the NZ local context. The Sale and Supply of Alcohol Act 2012 permits the development of Local Alcohol Policies that can potentially restrict the availability of alcohol within a community.

There is substantial NZ-specific research confirming the association between outlet density/access to alcohol outlets and higher/more harmful alcohol consumption, as well as a number of other harms. There is greater access to alcohol outlets in more deprived urban areas.[139] Among adults and adolescents, high outlet density and high levels of deprivation are associated with riskier alcohol consumption and alcohol-related harms[140,141] The availability of alcohol retailers is associated with excessive drinking among particular groups, including younger Māori and Pacific peoples males; younger European females; middle-aged European men; and older men.[142] Greater geographic access to alcohol outlets is associated with increased levels of serious violent offending.[143] Higher consumption of alcohol is associated with purchasing alcohol late at night.[144,145]

Given these documented harms, it is unsurprising that NZ shows a history of strong support for local government policies that restrict alcohol's availability (including restrictions on the hours of operation of on-licensed premises) and promotion.[146] In specific settings, such as universities, that limited new alcohol outlet licences on campus and banned alcohol advertising, there have been significant reductions in alcohol-related harms.[147]

Despite support and demonstrated effectiveness, it is consistently challenging to implement restrictions on alcohol availability among NZ communities.[148] NZ has 19 active alcohol licensing trusts, which are community entities that are democratically-managed. They operate retail outlets in their district and distribute profits from sales to the local community. While this model appears to offer benefits, sufficient evaluation of possible benefits and harms is lacking.[149] There is an ongoing challenge of balancing commercial and social objectives while maintaining a good public image.[150] The enactment of the Sales and Supply of Alcohol Act 2012 Act appeared to provide a new opportunities for local level action on alcohol control. However, evaluations of this policy between 2013 and 2015 report that it was largely ineffective at reducing alcohol availability or even providing local alcohol control in communities.[12] Very few outlets were affected by the mandatory 4am limit on very late night availability in urban centres for licensed premises trading; however, this small change in trading hours was associated with a reduction in night time violence.[151] In 2015, only five Local Alcohol Policies were implemented. Stakeholders viewed the new legislation as causing a slight increase in the perceived difficulty of obtaining licence. Proposed Local Alcohol Policy limits on trading hours and premise locations were delayed and weakened by extensive legal appeals from alcohol retailers.[12] There is a need for measures to protect the Local Alcohol Policy development process from alcohol industry influence.[12] In its current form, Local Alcohol Policy mechanisms are poorly designed to equip communities with the means to restrict alcohol availability at the local level.

Key Points

- The *Availability of Alcohol* is an important domain for local level action.
- There are multiple strategies in the WHO's Global Strategy on Alcohol Control that are applicable within the NZ local context: regulating the number and location of on-premise and off-premise alcohol outlets; regulating days and hours of retail sales; regulating modes of retail sales of alcohol; regulating retail sales in certain places or during special events; and policies regarding drinking in public places or at official public agencies' activities and functions. These strategies are part of the WHO SAFER Initiative in the domain 'Strength

restrictions on alcohol availability'. There is very little research published on the last three interventions and we do not examine these in-depth within this review.

- The number and location of on-premise and off-premise alcohol outlets is associated with increased alcohol consumption and is strongly associated with more immediate harms such as alcohol-related injuries and social disorder.
- Based on emerging evidence, restrictions on alcohol outlet densities are effective at reducing hospitalisations due to alcohol-related conditions and other harms. Recently there has been rapid growth in this area of research due to progress on local alcohol policies within the UK and robust evaluative studies of these changes.
- Evidence on the effectiveness of reducing outlet days and hours of retail sales indicates that this is an effective intervention for reducing alcohol-related harm.
- We highlight the research evidence on barriers and facilitators toward the adoption of policies that restrict the number of outlets and hours of operation. There is a sizable body of research examining the use of local alcohol policies within the United Kingdom and Scotland.
- There is substantial NZ-specific research confirming the association between outlet density and access to alcohol outlets with higher and more harmful alcohol consumption, as well as a number of other harms.
- Given these documented harms, it is unsurprising that NZ shows a history of strong support for local government policies that restrict alcohol's availability (including restrictions on the hours of operation of on-licensed premises) and promotion.
- It is consistently challenging to implement restrictions on alcohol availability among NZ communities. There is a need for measures to protect the Local Alcohol Policy development process from alcohol industry influence. In its current form, the Local Alcohol Policy mechanism is poorly designed to equip communities with the means to restrict alcohol availability at the local level.

Recommended reading:

- Research review on the effects of alcohol trading hours: Nepal et al 2020 'Effects of Extensions and Restrictions in Alcohol Trading Hours on the Incidence of Assault and Unintentional Injury: Systematic Review'[9]
- Research on local alcohol policies in England: Reynolds et al 2019 ''A true partner around the table?' Perceptions of how to strengthen public health's contributions to the alcohol licensing process'[10]
- Research on local alcohol policies in Scotland: Wright 2019 'Local Alcohol Policy Implementation in Scotland: Understanding the Role of Accountability within Licensing'[11]
- Research evaluation NZ's Sale and Supply of Alcohol Act: Randerson et al 2018 'Changes in New Zealand's alcohol environment following implementation of the Sale and Supply of Alcohol Act (2012)'[12]

Marketing of Alcoholic Beverages (Area 6)

Introduction

There are some important aspects of *Marketing of Alcoholic Beverages* that can be addressed at the local level. We identified two specific policies on *Marketing of Alcoholic Beverages* (Area 6): **restricting or banning promotions in connection with activities targeting young people** and **regulating sponsorship activities that promote alcoholic beverages**. Both of these interventions are in the WHO SAFER Initiative in the domain 'Enforce bans or comprehensive restrictions on alcohol advertising, sponsorship, and promotion'. Interventions that target online marketing or material are not included in our review since the mechanisms to modify such environments are unlikely to rest with local authorities.

Children and youth are exposed to alcohol marketing, branding, promotions, and sponsorship. There are numerous modes of exposure, including supermarkets and other alcohol retail outlets, billboards, public transit, and storefront posters and promotions. Sponsorship activities pertains to when the alcohol industry provides funding or in-kind support for things such as sporting events, festivals, music events, TV/film, fundraisers, sporting teams, sporting clubs, individual athletes, equipment, clothing, and community facilities. In return, the alcohol industry stakeholder's branding or name is promoted. There is a degree of overlap between the two categories of *Marketing of Alcoholic Beverages* interventions as alcohol industry sponsorship often exposes young people to alcohol branding. Thus, in this domain we have integrated the discussion of these intervention categories.

There is substantial potential for local level action to lead to interventions that reduce alcohol marketing exposure, shape the outdoor environment at a local level, aid in de-normalising alcohol use, and discourage vulnerable populations from harmful alcohol use. Room's review entitled 'Prevention of Alcohol-Related Problems in the Community Context' emphasises this potential: 'One sector where local governments usually do have substantial control powers over the local alcohol market is the fact that there is usually a substantial amount of land, roadways and municipal facilities under their control. They are likely to have power, for instance, to control advertising on municipal land, facilities and public transport' (p4).[152] In his research on Western Australia local government, Swensen argues, 'that local government bodies in Western Australia, which have a long-standing key role in overseeing public health standards and regulating business activities, potentially have a major, but under-recognised, capability to regulate the promotion and advertising of alcohol in public places overseen by them' (p117).[14] NZ local governments offer the same potential.

Effectiveness

Exposure to alcohol marketing contributes to the onset of drinking during adolescence and contributes to binge drinking. The evidence of this is 'persuasive' (p120).[13] Indeed, numerous other reviews have arrived at similar findings. Jernigan and colleagues conducted a systematic review of longitudinal studies on alcohol marketing. They found that as marketing exposure increased, so too did youth alcohol consumption. The level of marketing exposure was also associated with initiating alcohol use, and binge and hazardous drinking. This pattern was seen across younger adolescents, older adolescents, and young adults.[153] Among adolescents and young adults, relationships with alcohol promotion (eg, alcohol-sponsored events) and owning alcohol-related merchandise were even more consistently associated with alcohol use behaviours than exposure to alcohol marketing.[154] Sports

sponsorship is an important contributor to alcohol marketing. A systematic review reports that there is an association between exposure to alcohol sports sponsorship and hazardous alcohol consumption among adults, as well as the level of alcohol consumption among school children.[155]

Despite the known causal effect of alcohol marketing on the initiation of alcohol use among youth, and the association with hazardous drinking among adults, there is very little research that evaluates the impact of implementing alcohol marketing restrictions on alcohol consumption and alcohol-related harms, such as injuries. Despite the paucity of research, there is sufficient evidence compiled in systematic reviews to support the use of such interventions. For example, Anderson finds advertising policies that reduced the volume of advertising to be effective.[2] Burton and colleagues found that the evidence was of 'moderate' quality and recommends that complete advertising bans rather than partial bans be implemented. Similarly for children, they found that 'watershed' bans decrease exposure of young children, with an additional positive impact on the adult population. Piecemeal efforts to protect children from exposure to alcohol marketing show very little evidence of effectiveness to-date.[1] It is recommended that local level action occur to restrict or ban promotions connected to activities targeting young people and to regulate sponsorship activities that promote alcoholic beverages.

Implementation

Given that interventions to restrict marketing of alcohol beverages are not extensively researched at the local level, there is limited evidence on addressing barriers and facilitators to intervention implementation. However, there are some useful examples and case studies of relevance. A hurdle to local authorities prohibiting alcohol advertising is the possible loss of revenue. Swensen provides a rationale for local government to undertake alcohol advertisement regulation:

> One [rationale] is that regulating alcohol advertising in public places can draw on public health concerns, as advertising encourages greater use of alcohol through normalization, with attendance increases in public [dis]order and health-related harms. Another is that, because there is substantial community concern about the content of advertisements, there is strong support at the local level for local government to adopt a strong regulatory framework. Finally, as local authorities possess substantial statutory powers under local government and town planning laws, these should be regarded as potent instruments to develop policies and establish a framework to regulate the sale and advertising of alcohol. (p121)[14]

A relevant case study is the experience of strong community engagement in San Francisco that successfully led to the removal of alcohol ads in the city's bus shelters.[15] Lessons are provided, along with a call to action that, 'Communities should demand their local transit agencies take these simple steps to protect our youth from harmful advertising by the alcohol industry' (p515).[15] A second case study from the US reviews the history of outdoor alcohol advertising regulation in Baltimore City, which banned alcohol advertising in 1994.[16] The authors provided a detailed description of the challenges encountered along the path to policy implementation and adherence; they also describe the strategies that contributed to their success.[16]

Aotearoa New Zealand Context

There is strong evidence from the NZ context to support action on restricting the marketing of alcoholic beverages at the local level. Peer-reviewed literature has reported that alcohol advertising is prevalent among NZ urban settings, including walkable areas frequented by youth.[156] Children have high exposure to alcohol marketing in supermarkets, even though these environments are adherent with current legislation.[157] Among New Zealanders, individuals with a higher consumption of alcohol have an affinity for alcohol advertisements.[145] New Zealanders have demonstrated a good measure of support for removing alcohol sponsorship, marketing, and branding from government buildings, sports clubs, and community clubs.[158]

Key Points

- There are some important aspects of marketing of alcoholic beverages that can be addressed at the local level.
- We identified two specific policies on *Marketing of Alcoholic Beverages* (Area 6): restricting or banning promotions in connection with activities targeting young people and regulating sponsorship activities that promote alcoholic beverages. Both of these interventions are in the WHO SAFER Initiative.
- There is tremendous potential for local level action to result in interventions that reduce alcohol marketing exposure, shape the outdoor environment at a local level, aid in de-normalising alcohol use, and discourage vulnerable populations from harmful alcohol use.
- Exposure to alcohol marketing contributes to the onset of drinking during adolescence and contributes to binge drinking. The evidence of this is 'persuasive'.
- Despite the known causal effect of alcohol marketing on the initiation of alcohol use among youth, and the association with hazardous drinking among adults, there is very little research that evaluates the impact of implementing alcohol marketing restrictions on alcohol consumption and alcohol-related harms, such as injuries. Despite the paucity of research, there is sufficient evidence compiled in systematic reviews to support the use of such interventions.
- There are useful case studies that provide insights into the barriers and facilitators to implementing restrictions on the marketing of alcoholic beverages at the local level.
- There is strong evidence from the NZ context to support action on restricting the marketing of alcoholic beverages at the local level.

Recommended reading:

- A comprehensive review framed in the context of criteria for causality: Sargent and Babor 2020 'The relationship between exposure to alcohol marketing and underage drinking is causal'[13]
- Research on the rationale for local authorities to take action on restricting alcohol marketing: Swensen 2016 'Public space and alcohol advertising: Exploratory study of the role of local government'[14]
- Case study of community engagement in San Francisco to remove alcohol advertising from bus shelters: Simon 2008 'Reducing youth exposure to alcohol ads: targeting public transit'[15]

- Case study of community engagement in Baltimore to restrict alcohol advertising in the city: Meisel et al 2015 'Baltimore City's landmark alcohol and tobacco billboard ban: an implementation study'[16]

Reducing the Negative Consequences of Drinking and Alcohol Intoxication (Area 8)

Introduction

Reducing the Negative Consequences of Drinking and Alcohol Intoxication consists of interventions that are aimed at reducing the harmful consequences from drinking and alcohol intoxication, without necessarily changing the underlying alcohol consumption.[27] Four types of interventions were in-scope: **regulating the drinking context** to minimise violence and disruptive behaviour, **enforcing serving laws** against serving to intoxication and legal liability from serving of alcohol, **providing care or shelter** for severely intoxicated people, and **management policies on responsible serving** of beverage on premises and staff training. None of these interventions are directly mentioned within the WHO SAFER Initiative. However, policies to prevent sale to intoxicated persons or underage person, with liability on sellers and servers, is listed in the SAFER domain of 'Strengthen restrictions on alcohol availability'[28] and the above interventions of **enforce serving laws** and **management policies on responsible serving** aim to enhance the effectiveness of this SAFER domain.

Interventions on regulating the drinking context include a wide range of strategies that consist of environmental changes within on-premises venues with the goal of reducing harm, discouraging violent or disruptive behaviour by patrons, or minimising practices that appear to be associated with increased risk of harm. Such measures include serving alcohol in plastic containers or shatterproof glasses, the use of closed camera television (CCTV) cameras, applying lockouts (a time after which patrons can no longer be admitted to licensed premises, also known as 'one-way door' or 'last entry'), and strategies to handle alcohol-related behaviour at large-scale public events. Another strategy is 'risk-based licensing' whereby an outlet's annual licence fees are supposed to be levied in accordance to the risk of harm associated with the venue, such as the outlet's size, trading hours, previous violations, location, volume of liquor available for sale, or number of licences owned by the licensee. The theory is that licensees will be motivated to adopt practices that reduce their level of risk to thereby reduce their fees.

The second group of interventions centres on the enforcement of serving laws that prevent the sale of alcohol to people who are intoxicated or to underage persons. This set of laws may also include legal liability from serving of alcohol to these groups. Enforcement is carried out by police or other authorities. In order for enforcement of these laws to happen, a jurisdiction must have already put these laws in place. The enactment of these laws is outside of the scope of local interventions examined within this review.

Providing care or shelter for severely intoxicated people is another diverse set of interventions aimed at providing a safe space, deescalating conflict, providing first aid, health promotion, aiding intoxicated persons, or distributing water. The provision of these services may be through street service care that

could consist of mobile vans to provide care, public shelters for rest and recovery, sober-up centres, and drunk tanks. Services and care may be provided by patrols or street chaplains who are often volunteers but may sometimes be paid, such as security.

Management policies on responsible serving of beverage on premises consist of interventions to develop necessary policies, as well as training undertaken among operators, managers, and staff to implement these policies. Responsible serving policies are typically focused on preventing over-serving (ie, service to individuals who are already intoxicated) and service to underage patrons. Literature on these interventions has looked at the effectiveness of these interventions versus no interventions, and also sought to identify what characteristics could enhance effectiveness, such as comprehensive, intensive, or mandatory training of server staff.

Effectiveness

Given the diverse range of specific interventions on regulating the drinking context, there is not a substantial literature examining each specific type of intervention. Overall, there is little evidence to support that this group of interventions is effective at reducing alcohol consumption or improving other intermediate outcomes. In recent studies, lockout legislation that was introduced in Australia reduced the number of violent incidents inside of licensed premises, but had no impact on violence outside of licensed premises, which is where the majority of violence occurs.[159] In a Welsh RCT, local authorities conducted a risk audit of premises, identified areas of operation associated with potential violence, and provided feedback on how to improve operations to address these risks.[160] The intervention was associated with a sustained increase in police-recorded violence.[160] The authors reported that there was a lack of implementation of operations to reduce violence and concluded that enforcement of measures was required, rather than voluntary agreements.[160,161] Lastly, an evaluation of risk-based licensing in five Australian jurisdictions found a small decrease in all assaults, but no change in assaults attributed to drinking in a licensed premises, leading to the conclusion that risk-based licensing is not effective at preventing harm on licensed premises.[162]

The association between injuries and interventions to regulate the drinking context have been examined a number of systematic reviews, with evidence suggesting no meaningful change in injuries. Ker and Chinnock's 2008 Cochrane Review on interventions implemented in server settings to reduce injuries reported that an RCT found toughened glassware contributed to more injuries.[24] This same study was identified in Jones and colleagues' 2011 systematic review.[163] More recently, a systematic review focused on lockouts examined eight studies using this type of intervention with outcomes including assault, emergency department attendances, alcohol-related disorders, or drink-driving offences. The authors concluded that, 'There is not good evidence that lockouts prevent alcohol-related harm, in contrast to what is known about stopping the sale of alcohol earlier, for which there is evidence of effectiveness' (p527).[164] When a lockout policy was combined with a last drinks policy (due to changes in business hours) in 14 pubs Newcastle, Australia, significant reductions in assault occasioning facial injury were reported.[165] It is unclear which policy was most impactful on this reduction. Risk-based licensing in Queensland and Victoria, Australia was associated with no overall reduction in injury incidence rates in emergency departments during high-alcohol hours, with the exception of young adult males in Victoria.[166]

Interventions to regulate the drinking context encompass a wide range of interventions aimed at modifications to the drinking environment that appear largely ineffective at significantly reducing injury rates. These types of interventions are generally voluntary, which means that there is low uptake and little or no enforcement, and the interventions are generally only applicable to on-premise liquor outlets. These interventions also do not affect the proprietor's profits as they are focused on reducing violence and crime rather than consumption, and thus do not reduce overall alcohol intake. Some interventions also only serve to shift the setting from within the establishment to outside on the street, where injuries are still possible.

There is minimal literature published since the year 2000 that has examined the association between enforcement of serving laws and alcohol consumption and intermediate outcomes. This measure is rarely examined as a stand-alone policy and is most often reported as an intervention within multi-component strategies. A 2011 systematic review found eight studies on policing and enforcement approaches within drinking environments, reporting that there was inconclusive evidence that policing and increased enforcement efforts had an impact of sales to intoxicated or underage drinkers.[163]

There is no evidence to support that enforcement of serving laws as a stand-alone policy leads to a reduction in injuries.[167] The ineffectiveness of enforcement has been noted by other researchers.[24,163] Authors have commented on what may be contributing to the ineffectiveness of this intervention. They note that the threshold of evidence for penalty on alcohol outlets is so high that very few penalties are enacted. It is difficult to prove that a venue has served an intoxicated person. When penalties are applied, they are often very minor and thus provide little incentive for venues to improve practices. Furthermore, overservice laws have minimal impact on heavy alcohol consumption as the intervention is only implemented after the person is intoxicated.

Providing care or shelter have not been linked to any changes in alcohol consumption. The association with changes in assaults has been tested and the results suggest that there is no or minimal impact of this intervention category. Specifically, of two recent studies on street service care in Australia, one reported a decrease in police-recorded serious assaults but pointed out that there may be due to changes in police practices.[168] The second study found no change in the proportion of police incidence reports.[169]

Two recent studies have reported the relationship between providing care or shelter and injuries and showed no reductions in injuries as a result of providing care or shelter. Both studies were set in Australia. The first was a street service care in Cairns within the night-time entertainment precincts. Emergency department injury presentations or ambulance attendances did not change.[169] The second study was a secure shelter (supervised by security guards) and volunteer-staffed van within a regional city in Australia. There was no change in the proportion of alcohol-related hospital emergency department presentations.[168]

Providing care or shelter is largely ineffective at reducing alcohol-related injuries. Implementing this type of intervention requires substantial effort from the community and stakeholders. There are also very real concerns about the occupational health and safety risks to volunteers.

A number of studies have examined management policies on responsible serving, with most of them reporting that while servers' knowledge improves, there is no significant impact on alcohol consumption and alcohol-related harms. In their 2011 systematic review, Jones and colleagues examined 12 studies on server training interventions and found that there was a mixed impact on patrons' alcohol consumption, servers rarely intervened on patron drinking behaviour, and there was a reduction in traffic crashes.[163] A 2011 review of experimental studies examined a wide range of interventions aimed at preventing harmful alcohol and drug use in nightlife settings. For alcohol server interventions, the results were mixed. There were improvements in servers' knowledge, but few impacts on downstream outcomes were observed.[170] Similarly, efforts to develop and implement responsible alcohol service policies and disseminate these policies led to improvements in service practices but little change in other outcomes. These studies were considered of mixed quality.[170] Similar results were found in Brennan et al's 2011 systematic review, which concluded: 'Server training courses that are designed to reduce disorder have some potential, although there is a lack of evidence to support their use to reduce intoxication and the evidence base is weak' (p706).[167] More recent studies further demonstrate limited benefit to this intervention approach. In the USA, there was no associated between the strength of responsible beverage service laws and self-reported binge drink or alcohol-impaired driving.[171] Another USA study found that mandatory responsible beverage service programmes were actually associated with *increases* in beer consumption compared to voluntary training.[172] The strategies implemented within community sports clubs settings or among community festivals are generally some form of management policies on responsible serving (and education and awareness). Studies on these settings similarly show no meaningful change on alcohol consumption.[173,174]

In an effort to understand what might increase the effectiveness of responsible beverage service training programmes, Woodall and colleagues compared an online training programme to a live responsible beverages service training. The primary outcome was whether servers refused to serve intoxicated patrons (as measured by 'refusal to serve rates'). In the short term, the online programme was more effective than usual training at increasing refusal to serve rates.[175] However, one of the conclusions by Toomey and colleagues, who also examined online versus in-person programmes, well summarises what literature on management policies of responsible serving shows: 'The observed effect of this enhanced training programme are consistent with prior research showing modest initial effects followed by a decay within 6 months of the core training. Unless better training methods are identified, training programmes are inadequate as the sole approach to reduce overservice of alcohol' (p268). [176]

When examining the effectiveness of management policies on responsible serving on reducing injuries, there were few studies reporting this relationship. The limited research on this topic has been reported in multiple systematic reviews. Server training reduced night-time crashes.[24,163] In the USA, responsible beverage service programmes were associated with a decrease in alcohol-related fatal crashes among underage drinkers.[172]

Among the research literature, interventions on *Reducing the Negative Consequences of Drinking and Alcohol Intoxication* (Area 8) were often a part of multi-component programmes to reduce alcohol consumption and alcohol-related harms. Combination approaches appear more effective than stand-alone Area 8 interventions at reducing alcohol consumption and intermediate impacts.[163,170] This is

not surprising given that as stand-alone policies, this set of interventions have rarely showed a significant reduction in alcohol-related harms.

Implementation

Research on regulating the drinking context, enforcing serving laws, and provision of care or shelter has shown little impact on improving injury rates and on intermediate outcomes such as alcohol consumption. For this reason, these interventions do not warrant further consideration within this review.

Management policies on responsible serving is a more specific set of interventions and has been examined in research comparatively more than the other three categories of interventions. While the effectiveness is mixed, there is some indication that this intervention improves proximal outcomes (eg, server compliance), as well as injury outcomes. The implementation of this type of intervention incurs numerous challenges. It entails training a highly mobile workforce engaged in low paid work within a stressful environment. There is no particular incentive for implementing the training.[24] Furthermore, training requires an investment of time that may decrease the motivation of managers to implement this policy.[176] Mandated training that must be completed before employment is likely to increase uptake of this intervention.[24] Stockwell provides further research-based observations and recommendations on server training and policing initiatives.[17] In addition to these important considerations, it is recommended that best practice resources are consulted and adhered to before undertaking efforts to promote management policies on responsible serving.

Aotearoa New Zealand Context

Policy and research efforts in NZ have undertaken some of the interventions in this domain, such as risk-based licensing, the use of lockouts, and community action to improve age checks for young people purchasing alcohol.[47,162,164] Given the similarity between the NZ context and the primarily high-income country research, it is expected that interventions aimed at reducing the negative consequences of drinking will be minimally effective within NZ.

Key Points

- *Reducing the Negative Consequences of Drinking and Alcohol Intoxication* consists of interventions that are aimed at reducing the harmful consequences from drinking and alcohol intoxication, without necessarily changing the underlying alcohol consumption.
- Four types of interventions were in-scope: regulating the drinking context to minimise violence and disruptive behaviour, enforcing serving laws against serving to intoxication and legal liability from serving of alcohol, providing care or shelter for severely intoxicated people, and management policies on responsible serving of beverage on premises and staff training. None of these interventions are directly mentioned within the WHO SAFER Initiative.
- Regulating the drinking context: There is little evidence to support that these interventions are effective at reducing alcohol consumption, other intermediate outcomes, or injuries. These interventions are generally voluntary, which means that there is low uptake and little or no enforcement, and the interventions are generally only applicable to on-premise liquor outlets. Some interventions also only serve to shift the setting from within the establishment to outside on the street, where injuries are still possible.

- Enforcement of serving laws: There is little evidence to support that these interventions are effective at reducing alcohol consumption, other intermediate outcomes, or injuries. Researchers note that the threshold of evidence for penalty on alcohol outlets is so high that very few penalties are put in place. When penalties are applied, they are often very minor and thus provide little incentive for venues to improve practices. Furthermore, overservice laws have minimal impact on heavy alcohol consumption as the intervention is only implemented after the person is intoxicated.
- Providing care or shelter: There is little evidence to support that these interventions are effective at reducing alcohol consumption, other intermediate outcomes, or injuries. Implementing this type of intervention requires substantial effort from the community and stakeholders. There are also very real concerns about the occupational health and safety risks to volunteers.
- Management policies on responsible serving: There is evidence that these interventions improve servers' knowledge, but there is no significant impact on alcohol consumption or alcohol-related harms. The implementation of this type of intervention incurs numerous challenges.

Recommended reading:

- Research-based recommendations on management policies on responsible serving: Stockwell 2001 'Responsible alcohol service: lessons from evaluations of server training and policing initiatives'[17]

Conclusions

Using the WHO's Global Strategy on Alcohol Control as a framework, we reviewed the research literature to identify interventions that are effective at reducing alcohol-related injuries and alcohol consumption at the local level, with consideration for the Aotearoa New Zealand context. In considering the results of this review, it is important to remember that this review relies on research that emphasises processes and outcomes that reflect Western values, such as measurable changes in alcohol use, injuries, and health service use. Such research has not been conducted in a manner that recognises a Māori worldview and Māori perceptions of health. There is a dearth of research literature on Indigenous-led strategies to address alcohol-related harms.

In Table 3 we summarise the findings from our review, as well as identify which interventions were included within the WHO SAFER Initiative. Across the research literature, mandatory approaches to alcohol control were predominantly reported as more effective than voluntary approaches. Additionally, voluntary measures required significant community resources. Mandatory approaches shifted the implementation costs to alcohol sales outlets, thereby allowing community and police resources to be directed elsewhere.[177]

Table 3. Interventions of relevance to the local context and their effectiveness at reducing alcohol-related injuries and alcohol consumption

INTERVENTION	EFFECTIVENESS	WHO SAFER INITIATIVE	NOTES
Community Action (Area 3)			
Facilitating recognition of alcohol-related harm and promoting responses at local level	Not effective	No	The most effective alcohol control policies are commonly excluded from *Community Action*, contributing to the ineffectiveness of efforts in this domain.
Strengthening capacity and coordination of municipal policies	Not effective	No	
Providing information about and strengthening capacity for community level interventions	Not effective	No	
Awareness (Area 1)			
Public education and awareness programmes on alcohol's harms and available preventive measures	Not effective	No	The majority of the research was on mass media campaigns, many of which were not explicitly aimed at changing alcohol consumption or injuries.
Raising awareness of harm to others and discouraging discrimination and stigmatisation of affected groups	Not effective	No	
Health Services' Response (Area 2)			
Screening and brief interventions in primary health care and other settings	Effective	Yes	Effective in primary care, emergency care, and other health settings; ineffective in workplace settings.
Drink-Driving Policies and Countermeasures (Area 4)			
Provision of alternative transportation, including public transport, until after closing time for drinking places	Not effective	Yes	The possible adverse effects of this intervention could contribute to its ineffectiveness

Workplace alcohol testing for occupational drivers	Effective	No	Effective based on a very limited body of literature
Availability of Alcohol (Area 5)			
Regulating the number and location of on-premise and off-premise alcohol outlets	Effective	Yes	Important policy domain for the NZ local context
Regulating days and hours of retail sales	Effective	Yes	
Marketing of Alcoholic Beverages (Area 6)			
Restricting or banning promotions in connection with activities targeting young people	Plausibly effective	Yes	There is very little evaluative research on these interventions but very strong evidence on the causal effects of alcohol marketing on alcohol consumption
Regulating sponsorship activities that promote alcoholic beverages	Plausibly effective	Yes	
Reducing the Negative Consequences of Drinking and Alcohol Intoxication (Area 8)			
Regulating the drinking context to minimise violence and disruptive behaviour	Not effective	No	This set of interventions is aimed at reducing the harmful consequences from drinking and intoxication, but without necessarily changing the underlying levels of alcohol consumption
Enforce laws against serving to intoxication and legal liability from serving of alcohol	Not effective	No	
Providing care or shelter for severely intoxicated people	Not effective	No	
Management policies on responsible serving of beverage on premises and staff training	Effective	No	A small number of studies show some improvement in injury rates; reduced alcohol consumption was rarely demonstrated

In conducting this review we encountered a number of studies and reviews that examined the potential impacts of multi-component alcohol control interventions.[170,170,177–180] A combination of approaches seems to increase the effectiveness of reducing alcohol-related harms.[170] The increased benefit of multi-component strategies is that stronger policy measures may be included. For example, Miller and colleagues reported that restrictions on trading hours were the most important part of their intervention.[177] A combined set of weak alcohol control strategies is unlikely to produce meaningful improvements in outcomes no matter how many interventions are included.

Our review has a number of notable limitations. While we searched and reviewed research literature to a point of saturation, we did not use a systematic review methodology. Given the central interest in identifying effective and ineffective alcohol control interventions, we prioritised English-language literature that was published in academic journals, and therefore subjected to the quality control process of peer review. Grey literature is an extensive body of research and we expect that there are numerous grey literature studies that would be relevant to this review. However, we do not expect that the inclusion of such studies would be likely to change the conclusions from this review. Subsequent work could examine a set of research questions specific to Māori and use corresponding search strategies. While we did review all studies published on alcohol in New Zealand found within PubMed, further work could be done to review grey literature sources, published academic theses and dissertations, other journal databases especially those focused on the humanities, and non-indexed journals. Finally, this review does not include a detailed focus on cost-effectiveness: an effective intervention that is very costly may not be as cost-effective as a less effective intervention that is low cost. Therefore policy-makers need to consider these other such factors when prioritising interventions.

This review identifies a number of interventions that have been shown to successfully reduce alcohol-related injuries in local settings. However, the findings in *Community Action*, as well as other sections, point to a number of inherent challenges in undertaking community-driven efforts to reduce the alcohol-related harms. Action at the community level is essential for addressing the adverse effects of alcohol consumption in NZ, but it is likely to be far from sufficient. If NZ society wishes to reduce alcohol-related injury and harm, continued efforts will need to be made to stimulate the NZ Government to take action and utilise the powerful alcohol control policies available to them. These include increasing the price of alcohol (eg, taxes[181]); stronger restrictions on alcohol packaging, advertising, and promotions; and expanded enforcement of drink driving legislation. Alternatively (or in addition), central government could empower local government to enact local bylaws and other local level policies to reduce alcohol-related harm to their communities. Lastly, all national and local efforts to reduce alcohol-related harm should adhere to Te Tiriti o Waitangi and aim to support Māori tribal self-determination and authority while reducing health inequities for Māori.

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