Māori attitudes and behaviours towards alcohol

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Māori Attitudes and Behaviours Towards Alcohol

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Executive summary

This report presents findings from the analysis of the Attitudes and Behaviour Towards Alcohol Survey (ABAS) which has collected survey sample(s) of approximately 2,000 Māori participants from the 2013/14 (N= 662), 2014/15 (N= 610) and 2015/16 (N= 736) ABAS surveys. The ABAS is a national survey of people aged 15 years and over which looks at alcohol consumption patterns, alcohol-related behaviours, consequences of consuming alcohol, and attitudes. The ABAS focuses on behaviour in the last year, past four weeks and on the last drinking occasion, and includes questions on a range of attitudes and opinions towards alcohol. From these measures, we report on the following drinking statuses: last year drinker, past four weeks drinker and risky drinker[1]. We also focus on whether two or more drinks had been consumed on the last occasion and investigate attitudes towards alcohol and access to alcohol. We use a Māori sample across these timeframes to assess specific patterns in relation to Māori attitudes and behaviour towards alcohol.

Previous reports on Māori alcohol consumption have presented a negative outlook on Māori health. In looking to reduce alcohol's harms, researchers have commonly focused on individual traits within Māori rather than looking towards the environments that Māori live in. In this research, we look to the broader context by acknowledging the role that highest qualification achieved, location in Aotearoa, age, gender and colonial history play in understanding the relationships between Māori and alcohol. We involve the expertise of Māori researchers in the team, to ensure we are presenting research from a perspective that is relevant and appropriate for Māori communities and those working to reduce alcohol harm.

Key findings

Overall findings

- Overall, the analysis showed that Māori who were male and in younger age groups were more likely to be drinkers across a variety of time frames and more likely to be identified as risky drinkers.
- This report suggests that overall most Māori had consumed alcohol in the last year and in the past four weeks. Just under half were identified as risky drinkers – a category mostly comprised of Māori males and those aged between 15 and 34 years.
- 71% of Māori were drinkers in the last year; 59% drank in the past four weeks.
- 49% of Māori were risky drinkers and 57% consumed two or more drinks on the last occasion.
- When looking at the last occasion of drinking, on average, around eight drinks were consumed. However, there were differences in when it happened, the day of week, the kind of occasion and the location of drinking.
- The most common types of last drinking occasions were with family and friends, a special occasion, to relax, as a reward or for no reason.
- The most common beverages consumed on the last drinking occasion were beer, wine, spirits and ready to drinks (RTDs) (in that order).
- The most commonly reported experiences during the last drinking occasion were *"Felt good, happy or relaxed"* (89%) and *"Was able to de-stress, wind down"* (79%).
- Drinking beer, RTDs, spirits or liqueurs was related to higher last occasion consumption.

[1] In this survey, HPA conservatively defined 'risky drinking' as seven or more drinks (10g ethanol) on any one occasion for adults aged 18 years and over[1]. For those 15-17 years, the risky drinking definition was five or more drinks.

- Over half of the total sample agreed with the statement *"There are places I no longer go because of other's behaviour when drinking"*.
- Almost half of the total sample agreed with the statement *"Binge drinking is part of kiwi culture"*.
- 1/5 of the total sample (20%) agreed with the statement "*Drunkenness is acceptable in some situations".*

The impact of location

- Being from the South Island meant an increased likelihood of being a last year and past four weeks drinker and consuming at a level of two or more drinks on the last occasion.
- The most common locations of last drinking occasions were at the drinker's own home or at other people's homes.
- Māori males and Māori living in rural areas consumed more standard drinks on the last occasion.
- Drinking at special occasions, sports events, a marae or out on the street, carpark or drinking spots was associated with drinking more on the last occasion. These locations are context specific and can relate more broadly to cultural contexts and socioeconomic conditions.
- While Maori did not report drinking on the marae in large numbers, those who did report it also reported drinking large amounts of alcohol there. Looking at this from Te Ao Māori, perhaps even in the absence of tikanga, drinking on the marae is most often associated with tangi (funerals), a distressing and sometimes celebratory event where alcohol consumption is likely beyond usual levels.
- People living in Auckland were more likely to report experiences of feeling good, happy or relaxed while drinking.
- People from the South Island were less likely to report at least one negative experience.
- People living in Auckland were more likely to agree with the statement "*In some situations it is hard to say 'I am not drinking'"* and *"Binge drinking is part of kiwi culture"*.
- Overall, most participants agreed it was easy to get to licensed premises from where they lived.

The impact of age

- Young people were more likely to experience at least one negative experience while drinking (44% for young people compared to 18% for people 55 years and over). Young people were also more likely to report getting drunk or intoxicated (57% and 9% respectively).
- Māori 55 years and over were more likely to consume alcohol more frequently in the past four weeks, and were less likely to be last year drinkers, consume two or more drinks on the last drinking occasion and to be risky drinkers relative to younger Māori.
- Young people (ages 15-24, 25-34) were more likely to be risky drinkers relative to all other age groups.
- Māori 55 years and over were also less likely to report most experiences related to drinking including *"Did some interesting things*" and "*Got drunk or intoxicated"*.
- For *"Binge drinking is part of kiwi culture*", around half of respondents agreed. Notably, this was only significant for those aged 25 years and over and those aged 15-24 tended to agree less with this statement
- Older age groups were more likely to disagree with the statements *"It's OK to get drunk as long as it's not every day"* and *"Drunkenness is acceptable in some situations"*.

The impact of highest qualification achieved

- Our findings suggest that Māori with no formal education were less likely to be identified as last year or past four-week drinkers compared to those with formal qualifications.
- However, Māori with no formal education were more likely to be identified as risky drinkers, relative to those in the degree/postgraduate qualification category. This may suggest that having a degree/postgraduate qualification is a protective factor against risky drinking however, it may equally be linked to systemic issues faced uniquely by those in the 'no formal education' category.

- Māori with no formal education were also more likely to consume two or more drinks on the last occasion when compared to those with formal qualifications, despite being less likely to be identified as last year or past four-week drinkers.
- Those with a trade certificate, professional, or undergraduate qualification reported it being easier *"to access licensed premises from where I live"* than those with no formal education.

Wāhine compared to Tāne

- Māori women reported lower percentages for all four drinking measures than Māori men.
- Māori women, as compared to Māori men, were less likely to be drinkers in both the last year and past four weeks. They were less likely to consume two or more drinks on the last occasion and were also less likely to be identified as risky drinkers than Māori men.
- Being both a Māori male and in the younger age categories (ages 15-24, 25-34) increased the likelihood of drinking in the last year and past four weeks.
- Māori men were more likely to consume alcohol on more days in the past four weeks than their female equivalents.

Risky drinkers

- Risky drinkers agreed with the statement *"It's OK to get drunk as long as it's not every day"* and *"Drunkenness is acceptable in some situations"*.
- Being a risky drinker predicted higher consumption on the last drinking occasion.
- For the last occasion, overall, Māori who were risky drinkers were more likely to report *"felt good, happy or relaxed"* as the most common experience, with *"did some interesting things"* the least common.

Research implications

In Aotearoa, New Zealand, the relationship between Māori and alcohol has commonly been analysed against the European/Pākehā population in ways that have been inadequate and alienating. Although there has been decades of dedicated research in this field, reductions in alcohol-related harm for Māori as a consequence of this research appear minimal.

Overall, this analysis showed that Māori who were male and in younger age groups were more likely to be drinkers across a variety of time frames and more likely to be identified as risky drinkers. There was variation in the alcohol consumption profiles, attitudes and experiences that were pronounced among Māori older adults, as well as those of differing qualification categories. We observed location-based variation among Māori residing in the North Island and South Island, as well as repetition of previously known patterns of drinking for Māori living in Auckland. Young people (15-24 years) continue to report different attitudes and behaviours concerning alcohol consumption than older people.

Although there are plenty of data about Māori health outcomes, there are few Māori involved in the research process. Using a Kaupapa Māori lens, we are able to identify that many of the factors related to Māori alcohol consumption are symptomatic of broader social issues related to inequity and colonisation. Linking these gives Māori health outcomes context and shifts from a blaming narrative to one of understanding the influence of past and present factors. There must continue to be space provided for critical analyses and incorporation of *matauranga Māori* (Māori knowledge – in its many forms) to frame and interpret these findings and enable better outcomes for our indigenous population.

This research also contributes to the indigenous data sovereignty movement, which has been gaining momentum in Aotearoa in the past few years (Kukutai & Taylor, 2016). Indigenous data sovereignty refers here to the right of Māori and other indigenous people to collect, own and frame data about their peoples' lives and outcomes. As a fully integrated Māori health system and health research program is yet to be recognised, Māori researchers must be pragmatic in their reframing of the 'standardised' measurements of Māori health outcomes. This is relevant with the data provided by the Health Promotion Agency and will be more so relevant as new measures are introduced in future research in the context of an increasingly digitised world. A key 'wero' (challenge) in maintaining data sovereignty and reclaiming information about Māori is making sure to report on measures which are appropriate to Māori. This may mean in future that the report template featured here is changed or even abandoned, which may be a possibility as we onboard new methodological and analytical approaches such as a wairua approach to research (Barnes et. al, 2017). In maintaining the integrity of data collected about Māori, this report has been written to reduce stigma and best represent and respect the participant voices who made this research possible. In going forward, researchers must acknowledge the power and privilege they possess in conducting research with indigenous peoples.

Measurements to be included in future Māori alcohol research should encompass values relevant to Māori. Although many aspects of Te Ao Māori are not quantifiable, there are some measurements related to potential protective factors against alcohol harm for Māori. Some of these may include aspects of cultural engagement (i.e. connection to iwi, hapu, marae, other communities of meaning), connection to whānau (i.e. living with parents/grandparents/extended whānau), and access to or use of mātauranga (i.e. knowledge of iwi/hapu/marae, te reo, tikanga, rongoā). Importantly, measurements relating to external influences such as experiences of racism and discrimination could provide further insight behind the motivations of those identified as 'risky drinkers'. Linking alcohol harm among other health outcomes (i.e. tobacco smoking, cardio-vascular disease, cancer etc.) would be an efficient step forward in considering Māori health outcomes holistically.

Introduction

The importance of understanding the relationships between Māori and alcohol

"Viewed historically, liquor consumption reveals nuances of political, social and cultural resonance by Māori resistant to Pākehā pressures. Alcohol was part of the European onslaught, but its role in the colonisation of New Zealand needs to be understood in its full complexity".
(Hutt et. al., 1999, p. 82)

The colonial history of Aotearoa is intertwined with the health outcomes of our indigenous Māori population. Issues surrounding various measures of 'quality of life' frequently feature Māori facing worse health outcomes than the NZ European/Pākehā population. In public health research, Pākehā standards of living comprise the norms for expected health outcomes across our diverse populations. These standards of living do not take into account the different experiences and levels of privilege that affect health outcomes for different populations. Venturing away from comparing Māori to non-Māori gives us an opportunity to understand the unique health issues Māori face. As an indigenous people, Māori have a unique relationship with alcohol or *waipiro* because it was introduced to Aotearoa during colonisation. Below, we briefly discuss how alcohol came to exist in the country and the legal actions taken to control its use in contact and exchange between Māori and Pākehā. Longstanding issues over heavy consumption, alcohol addiction, alcohol dependence and alcohol related harm can reasonably be linked back to the colonising process (Muriwai et al., submitted).

Alcohol in Aotearoa, the colonising tool

Alcohol was not part of Aotearoa until the arrival of Pākehā and many Māori expressed an aversion to it during its early introduction (Hutt, 1999). Alcohol was known to Māori as *waipiro* which translates as 'foul and stinking water' (Awatere et al., 1984). Alongside muskets and tobacco, alcohol was used in what former politician The Honourable Dame Tariana Turia (2013) has described as 'unethical transactions' by Pākehā attempting to acquire Māori land. Once alcohol's role in the colonising process became more prominent, Māori alcohol consumption rose concurrently alongside loss of land, loss of whānau, and loss of cultural identity (Hutt, 1999). Māori in the 19th century faced both the undermining of *tikanga Māori* and the imposition of Pākehā culture. In order to live in colonial society, many Māori took on board Pākehā values and customs such as alcohol consumption. Excessive and 'problematic' alcohol consumption (Ebbett & Clarke, 2010) characterised early Pākehā settler culture, and it is possible that Māori modelled this drinking behaviour (Mancall et al., 2000).

Although Pākehā brought alcohol and its problems with them, ethnocentric (discriminatory) laws were put in place to restrict Māori alcohol use during the early 19th and 20th centuries (see Appendix 1). Early restrictions on Māori alcohol access were based on Pākehā interpretations of Māori as a 'dying-race' whereby Māori were seen as unable to handle the effects of alcohol (Mancall & et al., 2000). In 1847, shortly after the signing of Te Tiriti o Waitangi, the Sales of Spirits to Natives Ordinance prohibited the sale of spirits and limited other alcohol access for Māori. A number of further laws were imposed on Māori districts, introducing paternalistic systems and rules beyond Māori control. As late as 1895, the Alcoholic Liquors Sales Control Amendment Act prohibited Māori women from buying alcohol unless married to a Pākehā.

Despite the removal of discriminatory alcohol laws from the 1950s onwards, it remains unclear whether current national policies can work effectively to reduce alcohol-related harms for Māori (Brady, 2000; Kypri, Connor, Mclennan & Sellman, 2013). Increasingly, there have been continuing attempts to include Māori perspectives on

reducing alcohol harm. The National Alcohol Action Plan, for example, included advice from a Māori Advisory Group who called for higher quality data collection to investigate Māori alcohol consumption (Ministry of Health, 2008, p. 46-49). The Law Commission of New Zealand also dedicated a section of their report on alcohol and society to Māori, suggesting that alcohol use may be *driving* inequalities between Māori and non-Māori (Law Commission, 2010, p.94-95). Since then, limited policies targeted at the general population have been implemented to reduce alcohol harm nationally (e.g. Sale and Supply of Alcohol Act, 2012). In a recent paper it was suggested that it may be useful to 'reflect on alcohol harms as an echo of the past' (Muriwai et al, submitted). This conversation is continued through a brief discussion of the relevant literature.

Māori and alcohol research

Māori alcohol consumption is a popular topic in New Zealand public health research. The most consistent finding is that Māori are less frequent drinkers compared to non-Māori. However, of those who do frequently drink, Māori are twice as likely as non-Māori to consume large amounts of alcohol at least weekly (Ministry of Health, 2016). Reports also commonly place Māori as more likely to engage in hazardous and binge drinking compared to non-Māori (e.g. Dacey & Moewaka Barnes, 1997; de Bonnaire et al., 2004; Wells et al., 2009; Towers et al., 2011; Clark et al., 2013; Ministry of Health, 2013, 2015, 2016). Research specifically focusing on consumption on a typical occasion found that Māori consume more alcohol than non-Māori (e.g. Bramley et al., 2003; Moewaka Barnes et al., 2003; Connor et al., 2005; Huckle et al., 2008). In a submitted paper, Muriwai and colleagues (submitted) found that high levels of neighbourhood deprivation were linked with heavier but less frequent alcohol consumption for Māori.

Recent research has sought to illuminate alcohol's effect on Māori experiencing different life stages, particularly drawing on insights from *kaumātua* (older Māori). Recently, Towers, Sheridan and Newcombe (2017) reported that older Māori are more likely to abstain from alcohol than non-Māori of the same age. They also reported that self-reported Māori ethnicity had no relationship with a hazardous drinking score (i.e. 'being Māori' was not linked with being a risky drinker; Towers et. al., 2017). Herbert and Stephens have a dedicated focus in the area of older Māori, noting in a 2015 paper that just under half of an older Māori sample reported engaging in hazardous drinking and close to twenty percent of older Māori engaged in binge drinking. Herbert and colleagues also identified that sporting, working, family (whānau) and cultural social contexts provide spaces where alcohol consumption is maintained (Herbert et al., 2017). Herbert, Stephens and Forster's (2018) qualitative study focused on older Māori perspectives on alcohol. One finding reported that older Māori view alcohol misuse as simultaneously a problem from the past and that young Māori account for much of the problematic and harmful drinking. This study also affirmed that older Māori hold a view that alcohol is not *the* problem, but instead it is connected to several disadvantages Māori face.

The impacts of alcohol consumption continue to impact on a range of health outcomes for Māori. The most recent analyses of alcohol mortality found that Māori rates of alcohol-related death are 2.5 times higher than non-Māori (Connor et al., 2013). Alcohol is a leading cause of first admissions to hospital for Māori adults, especially those seeking mental health support (Kingi, 2002); there is also evidence that Māori experience poorer access to treatment and support for alcohol harm (Huriwai, 2002). Māori have been reported to be at greater risk of alcohol harms when living in highly dense areas of off-licence alcohol outlets – a whole literature is dedicated to the troubles associated with outlet density in Aotearoa (e.g. Huckle et al., 2008; Kypri et al., 2008; Connor et al., 2010; Vinther-Larsen et al., 2013).

Several factors contribute to the health outcomes for Māori who consume alcohol. Some of these include hazardous alcohol use, mental health issues and compounded issues stemming from poverty and deprivation

(Durie, 1999). Research has found that Māori living in cities (Moewaka Barnes, McPherson & Bhatta, 2003) and those who are unemployed (Saggers & Gray, 1998) are more likely to drink. Harris and colleagues (2012) found significant associations between racism and hazardous alcohol consumption among Māori. As reported, there is a myriad of evidence that sociodemographic factors feature in alcohol harms among Māori. However much of the research thus far has lacked a critical framework, or perhaps has simply lacked the bravery to address the systemic and colonial contributions to alcohol harm for Māori.

In 2018 there are many relevant factors which continue to contribute (and in some cases exacerbate) Māori alcohol consumption. Recent qualitative investigation indicates that pre-loading (consuming large amounts of alcohol before going out) is common amongst young people of legal drinking age (18-25 years) in Aotearoa and largely influenced by feelings of social solidarity among peers (McCreanor et al., 2015). This research highlighted that New Zealanders belonging to different ethnic groups partake in similar drinking cultures, however Māori and Pasifika participants expressed more constraint, anxiety and self-monitoring than their Pākehā counterparts. This anxiety was correlated with an awareness of risk associated with whānau, employers, teachers, siblings and social services monitoring young people's alcohol use (McCreanor et al, 2016). This literature reiterates the 'excess burden' (Alcohol Healthwatch, 2012, p.6) that some Māori experience when navigating alcohol use in today's context.

Māori perspectives and alcohol research

There is a danger in excluding Māori perspectives and Kaupapa Māori approaches from research concerning Māori health outcomes. Although there is increasing involvement of Māori academics in publications on Māori and alcohol, more often than not Te Ao Māori or Māori processes are not included in the analysis and/or interpretation of findings. Moewaka Barnes (2009, p.2) suggests this is linked to a lack of legitimacy given to indigenous knowledge in science – and when it is included, there is a risk of cultural deficit theorising. Overstated claims have problematically linked Māori culture with alcohol consumption, for example: "For some Māori youth, alcohol is increasingly being linked to their identity and what it means to be Māori" (BPACNZ, 2010, p.21). Researchers acknowledge that further tools are required to assess the links (or lack thereof) between Māori culture and alcohol harm (Herbert & Stephens, 2015). If Māori identity and culture are targeted as the reason for alcohol misuse, the opportunity for Māori to use identity and culture to promote healing from alcohol harms is minimised (Sellman et. al., 1997). Māori identity and culture are heterogeneous and influenced by the experience of colonial exchange. To insist alcohol misuse is part of 'who' Māori are is not only problematic but incomplete; Māori would not have adapted tikanga or assimilated to using (and misusing) alcohol were it not for the negative impacts of colonisation.

Although cross-cultural research has played an important role in identifying those most adversely affected by issues such as alcohol use (e.g. Kypri, 2003), it has also contributed to the maintenance of negative stereotypes of Māori who drink (Hutt, 1999; Maynard, Wright & Brown, 2013). Māori have long been the subject of scientific research; worked *on* instead of *with*, and thus some research has played a role in propagating inequity (Moewaka Barnes, 2009. Maynard and colleagues (2013) warned about comparative alcohol research and its potential to be used against Māori who drink through victim-blaming and stereotyping. In the recent decades of research addressing Māori alcohol consumption, few studies have explicitly presented a Kaupapa Māori analysis. Bramley and colleagues (2003) were among the first to do so, stating that the involvement and leadership of a Māori academic defined the Kauapapa Māori aspect of their research. Innovations in Kaupapa Māori approaches have since occurred, ensuring that Māori are recognised as 'ordinary' or the 'default' reference point in such research (Moewaka Barnes, 2000). Ultimately, as in other research involving Māori, comparisons with other ethnic groups can conceal the complexities of Māori realities – losing some detail that may explain the unique adversities Māori

face. For this reason, Māori research involving harms and health outcomes must respect and represent Māori alcohol consumption in ways which will be helpful and applicable to Māori communities.

Public health research is making a turn towards studying Māori samples in a Māori context. We extend this approach by looking into both the consumption profiles generally of Māori who consume alcohol, as well as matters concerning Māori attitudes and accessibility to alcohol over recent years.

The current study

Coming from a strengths-based and Kaupapa Māori analytic approach, we examined the consumption profiles of Māori who consume alcohol as well as their alcohol-related attitudes, behaviours and experiences. Survey data from the Health Promotion Agency's (HPA) Attitudes and Behaviour Towards Alcohol Survey (ABAS) was analysed to provide up-to-date information on Māori attitudes, behaviours and experiences surrounding alcohol. Crucially, we report on our findings from a Māori perspective, reducing the potential for further harm and deficit descriptions of the relationships between Māori and alcohol. This research offers important insights, which we hope will assist key stakeholders and community groups (NGOs) to reduce alcohol harms among Māori. The combined dataset of 2000 participants has provided a wide-reaching perspective of key demographic features that may be related to Māori attitudes towards alcohol and drinking behaviours. Further, the bicultural research team ensured adequate Māori involvement and advice in interpreting findings in ways that are productive and useful for reducing alcohol harms among Māori.

Through this research, we aimed to describe the demographic composition of the ABAS samples of Māori participants and analyse their consumption profiles. This includes reporting on the prevalence, frequency and quantity of alcohol consumed by Māori in Aotearoa, New Zealand including last year and past four weeks drinking, and last drinking occasion (by age, sex, attitudes, location, highest qualification achieved and risky drinking where appropriate). We also report on attitudes towards alcohol and access to alcohol compared by age, sex, and risky drinking status among Māori. These findings are discussed in context, with suggestions for future research.

Our aim has been to respond to relevant research questions around alcohol consumption using a Māori lens and interpret findings within a Māori context, to improve our understanding of how Māori are drinking to inform activities of the HPA, as well as NGOs and advocates working in communities to reduce alcohol harm among Māori. By providing a more holistic and Māori-focused account of Māori attitudes, behaviours and experiences with alcohol, we hope to better inform the development of a new HPA alcohol monitor and support the growth and utility of Māori research expertise.

Methods

Data

Data are from the Attitudes and Behaviour Towards Alcohol Survey (ABAS) which collected survey sample(s) of approximately 2,000 Māori participants from the 2013/14 (*N*= 662), 2014/15 (*N*= 610) and 2015/16 (*N*= 736) surveys. The ABAS is a national survey of people aged 15 years and over which looks at alcohol consumption patterns, alcohol-related behaviours, consequences of consuming alcohol, and attitudes. The ABAS focuses on behaviour in the past four weeks, the last year and on the last drinking occasion, and includes questions on a range of attitudes and opinions towards alcohol.

Measures

Measures used in our descriptive analysis of participants included gender (male, female), age (15-24 years, 25-34 years, 35-44 years, 45-54 years, and 55 years and over), highest qualification achieved (no formal education, secondary school, trades/professional/undergraduate, graduate), and location (four categories: Upper North Island, Auckland, Lower North Island and South Island as well as an urban/rural category).

Using these measures we also looked into consumption profiles, identifying drinkers and non-drinkers and their drinking patterns over the last year and past four weeks, as well as features of their last drinking occasion and risky drinking status. In this survey, HPA conservatively defined 'risky drinking' as seven or more drinks (10g ethanol) on any one occasion for adults aged 18 years and over[2]. For those 15-17 years, the risky drinking definition was five or more drinks.

Measures for regression analyses included experiences related to past four weeks drinking (positive/not negative, negative, neutral), details of last drinking occasion (quantity, kind of occasion, location of drinking, day of the week and type of alcohol), attitudes towards alcohol, and access to alcohol in the community.

Analysis

SAS 9.4 software was used both to compute information about who comprised the sample (descriptive statistics) and to fit models analysing the different outcomes (Generalised Linear Models) using the ABAS Māori data. Data were weighted against 2013 Census measurements for each year according to the benchmark groups, and the weighted survey data matched the Māori population relatively well. Comparisons over the three survey years were also conducted for all the outcomes (variable = Year).

The analyses were undertaken in separate sections: drinking pattern profiles, last drinking occasion, experiences with alcohol on the last occasion and attitudes, each of which are described below (please find further details of how the analysis was done in Appendix 2).

[2] This definition of risky drinking is higher than HPA's low-risk alcohol drinking advice for an occasion. See https://www.alcohol.org.nz/help-advice/advice-on-alcohol/low-risk-alcohol-drinking-advice.

Results

Weighted results providing information on the demographic profile of the survey participants feature in Table 1. Consistently across the survey years, there was a larger ratio of female to male participants. The largest age group were those in the 15-24 year age bracket, who comprised 27% of the sample across all survey years.

The majority of the sample reported a highest qualification achieved category of 'secondary school', comprising between 46-48% of participants across the sample period.

The bulk of the sample across all survey years lived in the North Island, with the biggest sample coming from the Upper North Island (32%), closely followed by Auckland (26%). South Island Māori made up a small portion of the sample (16%). Between 59-65% of the sample were identified as living in urban areas as opposed to rural areas.

Table 1: Demographic profile of survey participants in each survey year (weighted)

Demographic (%)	**2013/2014**	**2014/2015**	**2015/2016**	**Total**
Gender				
Female	59.7	54.4	53.1	53.3
Male	40.3	45.6	46.9	46.7
Age				
15-24 years	27.0	27.0	27.0	27.0
25-34 years	18.0	18.0	18.0	18.0
35-44 years	18.6	18.6	18.6	18.6
44-54 years	17.1	17.1	17.1	17.1
55+ years	19.3	19.3	19.3	19.3
Highest Qualification Achieved				
Secondary school	46.1	48.5	46.5	47.0
Degree/postgraduate	17.4	22.5	21.5	20.5
Trade cert/professional/undergraduate	15.9	19.5	16.4	17.2
No formal qualification	16.6	9.5	12.0	12.7
NZ Location				
Upper North Island	35.2	28.5	34.0	32.4
Auckland	26.3	29.8	22.3	26.4
Lower North Island	23.7	25.3	25.1	24.4
South Island	14.5	16.4	17.4	16.3
Rural or Urban				
Urban	64.7	62.3	58.6	61.3
Rural	33.7	36.9	40.0	37.3

A growing number of participants reported not living with their own children, from 57% in 2013/14, 59% in 2014/15 and 62% in 2015/16.

Overview of consumption profiles

Overall, our descriptive findings indicate that 71% of Māori were drinkers in the last year, 59% drank in the past four weeks, 49% were risky drinkers and 57% had consumed two or more drinks on the last occasion (Table 2). Māori women reported lower percentages for all four drinking measures than Māori men. Higher percentages of younger age groups had a risky drinking status relative to the older age groups. Over the survey years, slight differences in drinking behaviour were observed.

Table 2: Drinking patterns by demographics

Demographic (%)	Drinker last year	Drank in past four weeks	Risky drinker [a]	Last occasion[b]
Total sample[c]	70.6	59.0	49.2	56.5
Gender				
Female	68.0	55.7	41.7	52.0
Male	73.7**	62.7*	56.9**	61.6**
Age				
15-24 years	70.6	55.4	72.1	60.2
25-34 years	78.9	65.6	58.2	63.9
35-44 years	75.6	67.4	42.9**	62.6
44-54 years	74.5	64.1	38.1**	60.2
55+ years	55.1**	45.1**	20.8**	35.3**
Year surveyed				
2013/14	73.5	59.9	49.6	57.7
2014/15	68.6	58.3	52.2	54.9
2015/16	69.8	58.7	46.0	55.9
Location				
Upper North	66.8	54.1	53.6	51.4
Auckland	71.5	61.5	47.2	59.4
Lower North	70.9	58.0	45.5	56.5
South Island	76.9*	66.4**	49.7	62.7*
Highest qualification achieved				
No formal education	61.3	46.1	59.6	45.0
Secondary school	71.8*	58.9**	55.5	58.1**
Trade cert/ professional/ undergraduate	71.6*	63.9**	47.4	57.8**
Degree/postgraduate	76.7**	66.8**	34.0**	63.7**

[a] 7+ drinks on any one occasion in the past four weeks for those 18+ years, 5+ drinks for those 15-17 years
[b] 2+ drinks on last occasion[c] The denominator for each measure was all respondents (drinkers and non-drinkers) with the exception of "Risky drinker" where the denominator was respondents who had consumed alcohol in the last 4 weeks.

* *p = <.05, ** p = <.005*

Models predicting consumption profiles

Statistical models were computed to understand the consumption profiles of Māori for four drinking patterns: drinker in the last year, drank in past four weeks, consumed two or more drinks on the last occasion, and risky drinker (seven or more drinks at least once in the past four weeks, or five or more for 15-17 year olds). The models use several explanatory variables so that comparisons reported below (i.e. by location or education) are not confounded by differences in sample composition (i.e. by gender or age group).

Drinker in the last year

We found that Māori males were more likely to be drinkers in the last year (Appendix 2, Model 1).

Age was a factor in likelihood of being a drinker; Māori who were 55 years and over were significantly less likely to be drinkers relative to those 15-24 years of age (Appendix 2, Model 1).

Being from the South Island meant a high likelihood of being a drinker (relative to Māori in the rest of the upper North Island) (Appendix 2, Model 1).

Māori with no formal education were less likely to be last year drinkers relative to all other qualification categories (i.e. degree/postgraduate qualification, secondary school or trade certificate/professional or undergraduate education status) (Appendix 2, Model 1). These results were found over and above the effects of gender and age group in the model.

Drinker in the past four weeks

When looking at past four weeks of drinking, Māori males were more likely to drink than Māori females (Appendix 2, Model 2).

The age-related patterns of drinking reflected again that Māori 55 years and over were less likely to be drinkers in the past four weeks compared to younger age groups.

Māori living in the South Island were once again more likely to drink (relative to Māori in the rest of the upper North Island) (Appendix 2, Model 2).

Again, Māori with no formal education were less likely to be drinkers in the past four weeks (Appendix 2, Model 2).

Last drinking occasion, two or more drinks

Last drinking occasion revealed many of the same patterns observed in last year drinking and past four weeks drinking. Once again, Māori males were more likely to consume two or more drinks on the last occasion relative to females (Appendix 2, Model 3).

Māori aged 55 and over were less likely to consume two or more drinks than other age groups.

Māori living in the South Island were more likely to consume two or more drinks (relative to Māori in the rest of the upper North Island) (Appendix 2, Model 3).

Māori with no formal education were more likely to consume two or more drinks on the last occasion (than other educational groups) (Appendix 2, Model 3).

Risky drinker

Māori males were more likely to be risky drinkers than Māori females. Māori in older age groups (from 35 years onwards) were less likely to be risky drinkers (Appendix 2, Model 4).

Māori with no formal education were more likely to be risky drinkers relative to Māori in the degree/postgraduate qualification category (Appendix 2, Model 4).

Frequency of consumption

Older people (notably those 45-54 years and 55 years and over) appeared to consume alcohol more frequently in the past four weeks than the youngest people in the sample (15-24 years) (Table 3).

Males drank on average more frequently than females; around two additional occasions in the past four weeks (Table 3).

Over the sample period (2013/14-2015/16), there was a relatively stable mean number of days alcohol was consumed, around 6-7 times in the past four weeks (Table 3).

Table 3: Number of days an alcoholic drink was consumed in past four weeks

	Number of Days		95% CI
	Mean[α]	SD	
Gender			
Female	5.6	5.2	5.2-6.1
Male	7.4	7.0	6.7-8.0
Age			
15-24 years	4.5	5.7	3.8-5.3
25-34 years	6.0	6.5	5.0-7.0
35-44 years	6.7	4.9	6.0-7.4
44-54 years	7.2	6.5	6.2-8.2
55+ years	9.3	6.9	8.0-10.5
Year surveyed			
2013/14	6.3	6.1	5.6-7.0
2014/15	7.1	6.8	6.3-7.9
2015/16	6.1	5.5	5.5-6.8

[α] Only drinkers in the past four weeks were included. The mean does not include 0's. The range is 1-28.

Detailed analysis of last drinking occasion

This section focuses in more detail on the last drinking occasion where respondents had two or more drinks (a drink was defined as 10g ethanol). Mean number of drinks is reported on looking at details including time and day (Table 4) and kind of occasion/location (Table 5). Frequencies for kind of occasion (Table 6), location (Table 7) and type of alcohol consumed (Table 8) are also reported.

When looking at the last occasion of drinking, on average, around eight drinks were consumed. However, there were differences in when it happened, the day of week, the kind of occasion and the location of drinking.

Table 4 shows that the number of drinks consumed on the last occasion (when the respondent had two or more drinks) was approximately eight drinks regardless of how long ago it had occurred. The number of drinks was at its highest on a Sunday at an average of nine drinks, with all other days (except Monday/Tuesday) averaging around eight drinks.

Table 4: Length of time ago and day with number of drinks on the last occasion (when respondent had two or more drinks)

	Mean number of drinks	SD	95% CI
How long ago did you have two or more drinks of alcohol on any one occasion?			
Within the last week	8.0	6.5	7.5-8.6
+1 week/less 2 weeks ago	7.9	5.6	6.9-8.9
+2 weeks/less 1 month ago	8.5	6.7	7.2-9.7
+1 months/less 3 months ago	7.9	5.8	6.9-8.9
What day of the week did that drinking occasion start, you may have finished drinking the following day?			
Monday/Tuesday	6.2	4.9	5.1-7.3
Wednesday	8.6	6.9	6.8-10.3
Thursday	8.6	7.2	7.2-10.0
Friday	7.6	5.9	6.9-8.4
Saturday	8.6	5.9	7.9-9.3
Sunday	9.2	8.8	6.7-11.8

Table 5 shows that the kind of occasion/location where participants reported drinking a high number of drinks were special occasions, sports or other occasions, and to get drunk. On these occasions approximately nine drinks were consumed on the last occasion.

The highest number of drinks consumed on average on the last occasion was 15 out on the street, in a carpark or at drinking spots (Table 5). This was followed by drinking on the marae with nearly 13 drinks on the last occasion (Table 5), however, this finding must be considered in the context of a low base rate (see Table 7).

Table 5: Kind of occasion and location of drinking with number of drinks on the last occasion (when respondent had 2 or more drinks)

	Mean number of drinks	SD	95% CI
What kind of occasion was it?			
Special occasion	9.7	7.2	8.9-10.6
Sports/other	9.2	8.1	6.9-11.5
Get drunk	8.6	5.9	7.1-10.1
Friends/family	7.0	5.1	6.4-7.7
Work	6.8	6.2	5.3-8.4
Relax/reward/no reason	6.0	4.8	5.1-6.8
Where were you drinking?			
Out on street/carpark/drinking spots	15.3	10.1	9.3-21.3
Marae	12.7	9.5	3.5-22.0
Dance/nightclub	11.4	6.6	7.4-15.3
Other/driving vehicle/function centre	9.3	7.8	7.3-11.4
Other's home	8.8	6.0	8.0-9.5
Pub/bar/hotel	8.5	6.6	7.0-9.9
Own home	7.2	5.9	6.6-7.9
Sport club/venue	7.0	6.6	3.9-10.0
At work	6.2	5.2	3.8-8.6
Café/restaurant	4.3	2.2	3.6-5.1

Table 6 shows that most participants drank on a special occasion or with friends and family. The least common kind of occasions were to get drunk, at work or sports/other with less than 100 people reporting in these respective categories.

Table 6: Frequency for kind of occasion on the last drinking occasion

	N	%
Friends/family	322	30.2
Special occasion	374	34.0
Relax/reward/no reason	167	15.2
Get drunk	90	8.2
Work	85	7.7
Sports/other	63	5.7

Table 7 shows that most participants drank at their own home, at other's homes or at pubs, bars or hotels. The least common responses were drinking at the marae; a dance or nightclub; and out on the street, in a carpark or at drinking spots where less than 20 participants drank.

Table 7: Frequency for location of drinking on the last occasion

	N	%
Own home	458	41.4
Other's home	321	29.0
Pub/bar/hotel	102	9.2
Other/driving vehicle/function centre	81	7.3
Café/restaurant	46	4.2
Sport club/venue	29	2.6
At work	27	2.6
Out on street/carpark/drinking spots	18	1.6
Dance/nightclub	14	1.3
Marae	9	0.8

Table 8 shows that the most common beverages consumed on the last occasion were beer followed by wine, spirits and RTDs (in that order).

Table 8: Frequency for type of alcohol consumed on the last occasion

	N	%
Beer	546	32.4
Wine or sparkling wine	369	21.9
Spirits, whether mixed or straight	338	20.1
Ready to drinks (RTDs)	237	14.1
Cider	102	6.1
Liqueurs	72	4.3
Port or sherry	21	1.2

Model predicting number of drinks consumed on the last occasion

There were many factors predictive of drinking more on the last occasion; these included being a Māori male, living in rural areas and having no formal education.

Certain locations and occasions were also associated with drinking more such as special occasions, sports events, marae, or out on the street, carpark or drinking spots.

The more hours spent drinking on the last occasion, the higher the alcohol consumed. Type of alcohol was also predictive; drinking beer, RTDs, or spirits or liqueurs was related to higher last occasion consumption. On the other hand, drinking wine, cider, port or sherry was related to lower last occasion consumption. As expected, being a risky drinker predicted higher consumption on the last occasion.

Factors associated with consuming fewer drinks on the last occasion included living in the South Island, and consuming alcohol early in the week (Monday/Tuesday).

Drinking at restaurants was associated with drinking less on the last occasion, as was drinking at pubs, bars or hotels.

Experiences during last drinking occasion described by age, sex and risky drinking status

Many people were likely to report that alcohol left them feeling good, happy or relaxed, able to de-stress and wind down (Table 9).

Young people were more likely to experience at least one negative experience while drinking (44% for young people 15-24 years compared to 18% for people 55 years and over). Young people were also more likely to report getting drunk or intoxicated (57% and 9% respectively) (Table 9).

Risky drinking status was associated with reporting more frequently across all experiences, with the biggest differences between risky drinkers and non-risky drinkers being 'had too much to drink' (44% of risky drinkers compared to 5% of non-risky drinkers) and 'got drunk or intoxicated' (61% and 7% respectively). Note in Table 9, only 'Yes' responses are reported.

People living in Auckland were more likely to report experiences of feeling good, happy or relaxed whereas people from the South Island were less likely to report doing some interesting things. South Islanders were also less likely to report at least one negative experience (Table 9).

The oldest age group in the sample (55 years and over) were less likely to report on most experiences relating to drinking including doing some interesting things, getting drunk, feeling more confident and meeting new friends (Table 9).

Having secondary school qualifications or living in the Lower North Island did not significantly predict any experiences (Table 9).

Table 9: Experiences by demographic group (among respondents who had consumed alcohol in the past four weeks)

Demographic (%)	**Felt good, happy or relaxed**	**Was able to de-stress, wind down**	**Felt more confident**	**Met new friends or people**	**Got drunk or intoxicated**	**At least one negative experience**	**Had too much to drink**	**Did some interesting things**
Total sample	88.8	78.8	35.6	35.1	34.0	29.8	24.1	16.1
Gender								
Female	87.1	78.8	32.0	29.3	29.7	24.5	22.9	12.8
Male	90.5	78.8	39.3	40.9*	34.8	35.2	25.4	19.4
Age								
15-24 years	92.3	83.9	60.7	57.0	56.8	44.2	35.4	30.2
25-34 years	91.8	84.0	42.5**	39.3*	38.9	34.8	27.8	18.1
35-44 years	89.9	83.3	26.4**	26.8**	30.8	24.9	21.9	9.0**
44-54 years	87.1	77.1	23.5**	21.2**	20.9**	19.4*	20.0	10.3***
55+ years	78.9	58.9	11.9**	21.1**	9.2**	18.3	9.8	6.4**
Risky drinker								
Risky drinker	96.6**	87.2**	53.4**	49.5**	61.3**	52.9**	43.6**	25.2**
Not a risky drinker	81.3	70.6	18.1	21.1	7.0	87.1	5.0	7.3

Demographic (%)	Felt good, happy or relaxed	Was able to de-stress, wind down	Felt more confident	Met new friends or people	Got drunk or intoxicated	At least one negative experience	Had too much to drink	Did some interesting things
Location								
Upper North	85.6	80.6	36.2	37.4	36.4	34.3	25.1	17.7
Auckland	90.8*	76.8	35.4	31.5	33.6	30.0	24.3	16.1
Lower North	88.5	77.9	35.2	35.9	29.5	27.3	24.9	12.2
South Island	90.9	79.8	35.3	35.4	35.9	24.9*	21.1	18.4
Highest qualification achieved								
No formal education	85.5	73.9	37.5	42.0	43.0	45.5	29.6	21.5
Secondary school	89.2	79.4	41.2	43.3	39.3	34.0	28.0	19.3
Trade/ professional/ undergraduate	89.0	75.6	31.0	27.7	29.0	26.3*	20.3	14.2
Degree/post graduate	89.7	82.6*	26.3	21.4	25.4	18.1**	18.5	8.4

Note: only 'Yes' responses are reported

** p = <.05, ** p = <.005*

Attitudes towards alcohol described by age, sex and risky drinking status

Participants were asked to respond to five statements assessing their attitudes towards alcohol. Note in Table 10 only those who responded 'agree' are reported.

- For *"There are places I no longer go because of other's behaviour when drinking",* most people agreed with the statement, however there were no significant differences between different groups of Māori in the sample (Table 10).
- For *"Binge drinking is part of kiwi culture*", around half of respondents agreed. Notably, this was only significant for those aged 25 years and over and those aged 15-24 tended to agree less with this statement (Table 10).
- For *"In some situations it is hard to say 'I am not drinking'",* those aged 25 years and over significantly disagreed with the statement whereas those aged 15-24 years tended to agree more with this statement. Aucklanders were more likely than participants in other locations to report finding it hard to say they were not drinking (Table 10).
- For "*It's OK to get drunk as long as it's not every day",* agreement decreased as age increased. Those who were risky drinkers were more likely to agree with the statement (Table 10).
- For *"Drunkenness is acceptable in some situations",* less people across the board agreed with this statement. The highest level of agreement with this statement was 33% from risky drinkers (Table 10).

Table 10: Attitudes by demographic group (% of those who agreed)

Demographic (%)	There are places I no longer go because of other's behaviour when drinking	Binge drinking is part of kiwi culture	In some situations it is hard to say 'I am not drinking'	It's OK to get drunk as long as it's not every day	Drunkenness is acceptable in some situations
Total sample	54.4	47.9	35.9	26.6	19.9
Gender					
Female	53.5	47.8	33.6	22.8	18.0
Male	55.4	48.1	38.6	31.0*	22.2
Age					
15-24 years	51.0	32.9	44.0	39.3	30.4
25-34 years	54.9	48.4**	31.9**	35.5	26.0
35-44 years	57.0	58.8**	34.6**	21.6**	17.8**
44-54 years	56.9	55.4**	33.1**	21.0**	12.7**
55+ years	53.8	51.0**	32.2**	10.4**	8.0**
Risky drinker					
Risky drinker	51.0	49.2	41.9	42.5**	32.9**
Not a risky drinker	54.4	54.1	35.5	22.2	14.6
Location					
Upper North	55.5	40.6	32.2	25.9	17.5
Auckland	53.8	54.3**	38.2	26.8	20.2
Lower North	57.3	47.5	37.2	26.1	19.2
South Island	48.7	52.5	37.9	28.0	24.9
Highest qualification achieved					
No formal education	54.9	42.1	31.1	28.1	19.9
Secondary school	52.8	45.3	38.9	27.3	20.4
Trade/professional/undergraduate	58.6	53.7	31.1	26.5	19.2
Degree/Graduate	53.3	53.3	37.7	24.4	21.1

Access to alcohol

Participants were asked to respond to the statement *"It is easy to get to licensed premises from where I live"*.

Most participants agreed it was easy to get to licensed premises from where they lived. People aged 25 years and above were more likely to agree with the statement. There were also differences in agreement between risky drinkers and non-risky drinkers, with non-risky drinkers more likely to agree that it was easy to get to licensed premises from where they live (71%) than risky drinkers (61%; Table 11; Appendix 2: Model 5).

Those with a trade certificate, professional, or undergraduate qualification reported it was easier to licensed premises from where they lived than those with no formal education (Table 11; Appendix 2: Model 5).

Table 11: Access to alcohol by gender, age, survey year and risky drinking status

Demographic (%)	Disagree	Neutral	Agree
Gender			
Female	19.9	13.3	66.9
Male	21.8	12.5	65.7
Age			
15-24 years	27.4	21.2	51.4
25-34 years	20.1	13.1	66.8
35-44 years	18.9	10.2	70.9
44-54 years	16.4	9.1	74.5
55+ years	17.9	7.2	74.9
Year surveyed			
2013	21.2	12.5	66.3
2014	19.2	14.1	66.7
2015	21.9	12.3	65.9
Risky drinker			
Not a risky drinker	19.1	10.0	70.9
Risky drinker	22.7	16.0	61.3
Location			
Upper North	25.3	11.0	63.7
Auckland	14.7	16.2	69.1
Lower North	19.4	12.1	68.5
South Island	23.9	12.5	63.6
Highest qualification achieved			
No formal education	26.0	13.9	60.1
Secondary school	23.3	15.3	61.4
Trade/professional/undergraduate	16.0	9.2	75.8*
Degree/Post Graduate	15.5	10.0	74.5

Discussion

Alcohol use among Māori is intertwined with Aotearoa's history and the demographic features most closely related to alcohol consumption are often symptomatic of life in a colonised society. This report suggests that overall most Māori had consumed alcohol in the last year and in the past four weeks. Just under half were identified as risky drinkers – a category mostly comprised of Māori males and those aged between 15 and 34 years.

Understanding the role of measurements and Māori as subjects of this research is crucial in interpreting the results from this ABAS sample. An analysis devoid of context will do little to give insight beyond what has already been reported on Māori alcohol consumption in recent decades. In our models we controlled for a number of related explanatory variables (as far as the sample permitted) to give us more clarity with the findings. Although the sample only compares Māori against themselves, years of 'objective' (colonising) research narratives have ensured that studies concerning Māori place blame on the individual rather than collective determinants of health (Moewaka Barnes 2008). For this reason, it was important for us to include frequency tables in the analysis in order to show the breadth and scope of some of the findings. For example, the measurement predicting number of drinks consumed across locations indicated that drinking on the marae featured the second highest number of drinks consumed, at nearly 13 drinks on the last occasion. When looking across the two-thousand strong sample, only nine participants reported drinking on the marae. Looking at this from Te Ao Māori, perhaps even in the absence of tikanga, drinking on the marae is most often associated with tangi (funerals), a distressing and sometimes celebratory event where alcohol consumption is likely beyond usual levels across cultures.

The highest qualification paradox

There are many demographic factors that are used against Māori in public health research and highest qualification achieved is one of these. Highest qualification achieved revealed some interesting patterns in the ways in which Māori of differing qualification categories consumed alcohol. It must be noted that the concept of highest qualification achieved is relevant to a Pākehā/Western education system which has not always supported the learning needs of Māori. For our analyses, the reference group was Māori with no formal education.

Knowing highest qualification achieved plays a role in frequency and amount of alcohol consumed still leaves some unanswered questions. Our findings suggest that Māori with no formal education were less likely to be identified as last year or past four week drinkers, but more likely to be identified as risky drinkers. Specifically, Māori with no formal education were more likely to be identified as risky drinkers, relative to those in the degree/postgraduate qualification category. This may suggest that having a degree/postgraduate qualification is a protective factor against risky drinking however, it may equally be linked to systemic issues faced uniquely by those in the 'no formal education' category. These results highlight the need for further research into how qualification categories affect the quality of life for Māori more broadly. There appears a need for investigation into how and why qualification categories relate to potential alcohol harm, or whether qualification categories are related to protective factors for alcohol harm in Māori. There is limited research on the links between socioeconomic status (e.g. household income, level of deprivation) and qualifications across Aotearoa. It is possible that the findings of this study echo previous findings that Māori living in deprived areas drink less frequently but are more likely to be hazardous drinkers when they do drink (Muriwai et al., submitted; Ministry of Health, 2017).

Looking at this differently, Māori with secondary school, trades, professional, undergraduate or graduate educational status appear less likely to be risky drinkers. Understanding that demographic features such as highest

qualification achieved are ultimately issues of opportunity and equity, it is reasonable to see 'no formal education' as symptomatic of broader social issues which disadvantage Māori. Possessing a formal qualification could be a protective mechanism against the harms associated with risky drinking; however, it is likely that education status is linked to greater systemic inequities and privileges that we could not capture in this dataset. In future, it would be relevant to look at *mātauranga Māori* (Māori knowledge) as a protective factor for Māori when navigating alcohol consumption.

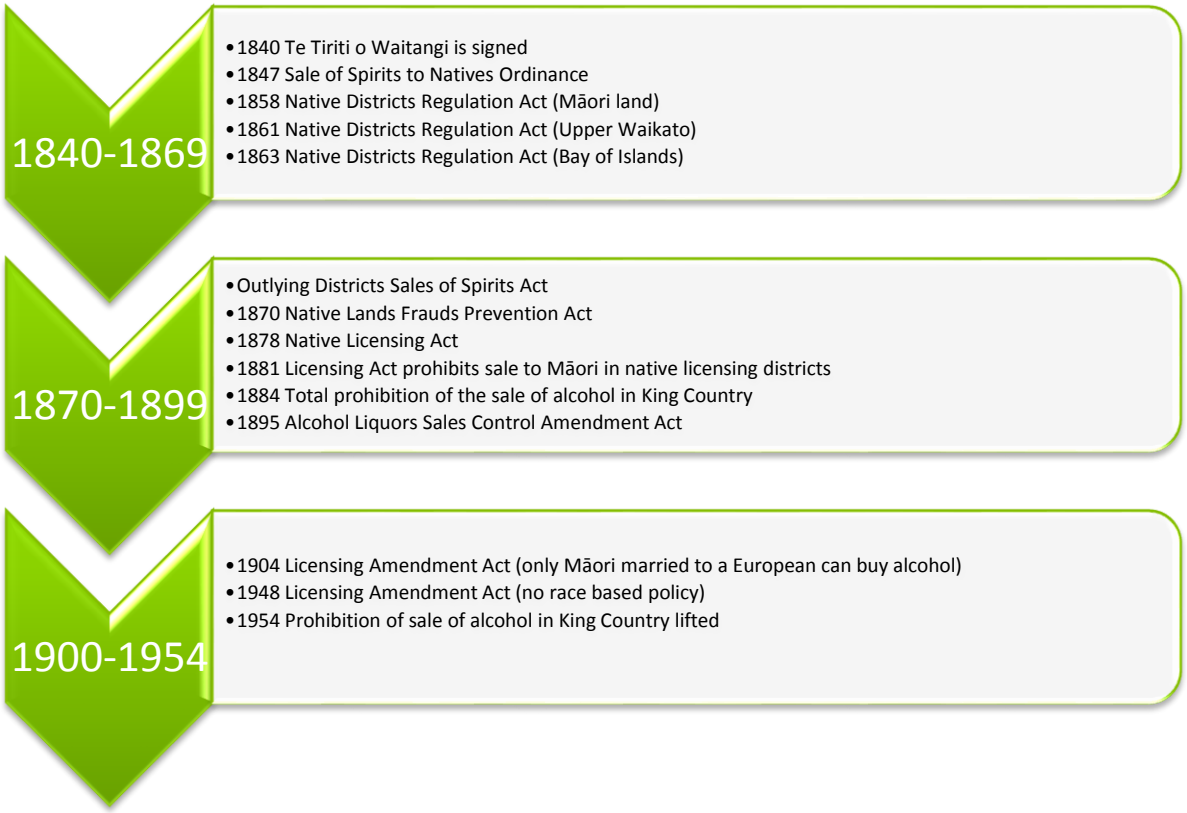
Location, place and Māori alcohol consumption

Little research has focused on the realities and experiences of Māori in the South Island of Aotearoa. The current understandings of 'problematic' alcohol consumption rely on deficit theorising of (mostly) urban communities, particularly in Auckland. While some research has focused on rural Māori of the upper North Island, and notably the North Island's East Coast, little has been reported regarding alcohol experiences, behaviours and attitudes of South Island Māori. We found that Māori in the South Island were more likely to be drinkers in the last year and past four weeks, and were more likely to consume more than two drinks on the last occasion than Māori in the North Island. Despite this, there were no significant associations between being from the North or South Island and being a risky drinker – other explanatory variables such as gender and age were more closely related to risky drinking status. There is a need for a greater understanding of the influence of location on drinking status.

History illuminates the relationship between place and alcohol consumption for Māori and other indigenous peoples. This dataset could not capture the geographical movement or displacement of Māori and its relationship to alcohol consumption. The centrality of whenua (land) to many Māori, and the colonial processes which have alienated Māori from our places, cannot be ignored when considering why there are location-based differences in the ways in which Māori experience and behave around alcohol. This directly applies to our findings that Māori drink the most out on the street, in a carpark or at drinking spots, and at a marae. It may be the case that Māori more frequently drink at higher volumes in these spaces as they are more important, familiar or inclusive of Māori. From a Kaupapa Māori perspective, place is also suitably applied to the place of alcohol in different social and cultural structures and practices, as well as the 'place' of Māori perspectives in the very research which reports on public health outcomes. Echoing the findings of Herbert and colleagues (2018), this report also suggests that the place of alcohol for Māori is among an array of issues to address, which require holistic and systems-based action to prevent harm and promote positive public health outcomes for Māori.

Appendix 1: Legislature concerning Māori and alcohol

Figure 1: A timeline of ethnocentric legislature concerning Māori and alcohol (adapted from Te Ara, 2016)



Appendix 2: Analysis

Drinking pattern profiles

Drinking pattern profiles were analysed using logistic regression models. The outcomes analysed were (i) drinker in last year, (ii) drank in past four weeks, (iii) two or more drinks on last occasion, (iv) risky drinker (v), and access to alcohol. The explanatory variables fitted were age, gender, location and highest qualification achieved. We also tested the explanatory variables rural/urban, survey year and the interaction between location and rural/urban, but these were not significant and so were not included in the final 'best fit' models.

Model 1: Drinker in the last year

	Estimate	**Standard Error**	**p-value**
Intercept	0.3	0.2	0.2
25-34 years	0.3	0.2	0.1
35-44 years	0.1	0.2	0.7
45-54 years	0.1	0.2	0.6
55+ years	-0.7	0.2	<.0001**
Male	0.3	0.1	0.0*
Auckland	0.2	0.2	0.3
Lower North Island	0.1	0.2	0.6
South Island	0.4	0.2	0.0*
Degree/postgraduate	0.7	0.2	0.0*
Secondary school	0.4	0.2	0.0*
Trade Certificate/professional/undergraduate	0.5	0.2	0.0*

Model 2: Drinker in the last four weeks

	Estimate	**Standard Error**	**p-value**
Intercept	-0.5	0.2	0.0*
25-34 years	0.3	0.2	0.1
35-44 years	0.3	0.2	0.1
45-54 years	0.2	0.2	0.2
55+ years	-0.5	0.2	0.0*
Male	0.3	0.1	0.0*
Auckland	0.3	0.1	0.1
Lower North Island	0.0	0.1	0.8
South Island	0.5	0.2	0.0*

Degree/postgraduate	0.8	0.2	<.0001**
Secondary school	0.5	0.2	0.0*
Trade Certificate/professional/ undergraduate	0.7	0.2	0.0*

Model 3: Two or more drinks on the last occasion

	Estimate	Standard Error	p-value
Intercept	-0.3	0.2	0.1
25-34 years	0.1	0.2	0.7
35-44 years	-0.1	0.2	0.5
45-54 years	-0.1	0.2	0.6
55+ years	-1.1	0.2	<.0001**
Male	0.4	0.1	0.0*
Auckland	0.3	0.1	0.1
Lower North Island	0.1	0.1	0.5
South Island	0.4	0.2	0.0*
Degree/postgraduate	0.8	0.2	<.0001**
Secondary school	0.5	0.2	0.0*
Trade Certificate/professional/ undergraduate	0.6	0.2	0.0*

Model 4: Risky drinker

	Estimate	Standard Error	p-value
Intercept	1.1	0.3	0.0*
25-34 years	-0.4	0.2	0.1
35-44 years	-1.0	0.2	<.0001**
45-54 years	-1.2	0.2	<.0001**
55+ years	-2.3	0.3	<.0001**
Male	0.6	0.2	<.0001**
Auckland	-0.2	0.2	0.4
Lower North Island	-0.3	0.2	0.1
South Island	-0.2	0.2	0.4
Degree/postgraduate	-0.9	0.3	0.0*
Secondary school	-0.3	0.3	0.2
Trade certificate/professional/ undergraduate	-0.4	0.3	0.1

Model 5: Access to alcohol			
	Estimate	**Standard Error**	**p-value**
Intercept	0.5	0.3	0.1
25-34 years	0.1	0.2	0.5
35-44 years	0.2	0.2	0.4
45-54 years	0.4	0.2	0.1
55+ years	0.3	0.3	0.2
Male	0.0	0.2	0.9
Auckland	-0.6	0.2	0.0**
Lower North Island	0.2	0.2	0.4
South Island	0.0	0.2	0.9
Degree/postgraduate	0.0	0.2	0.9
Secondary school	-0.3	0.2	0.1
Trade certificate/professional/ undergraduate	0.4	0.3	0.2

Last drinking occasion

The model fitted was a Poisson regression with outliers removed. The explanatory variables fitted were age, gender, location, highest qualification achieved, rural/urban, day of the week, kind of occasion, location of drinking, type of alcohol beverage, number of hours drinking and risky drinker (yes/no). We also tested the explanatory variables, survey year and "How long ago did you have two or more drinks of alcohol on any one occasion?", but these were not significant.

Experiences with alcohol on the last occasion

These variables were analysed using logistic regression models. The outcomes analysed were: (i) At least one negative (yes vs no), (ii) Felt good, happy or relaxed, (iii) Did some interesting things you might not normally have done, (iv) Had too much to drink on an occasion, (v) Was able to de-stress, wind down, (vi) Got drunk or intoxicated, (vii) Met new friends or people, (viii) Felt more confident and (ix) At least one negative experience for Māori 18 years and over. This last model included Māori 18 years and over who were asked about an additional negative experience (Got into a regrettable sexual encounter). Thus, the age categorisation used in this last model was different. The explanatory variables fitted were age, gender, location, highest qualification achieved and risky drinker (yes/no). We also tested the explanatory variables rural/urban, survey year and the interaction between location and rural/urban, but these were not significant.

Attitudes

The outcomes analysed were: (i) It's OK to get drunk as long as it's not every day, (ii) Drunkenness is acceptable in some situations, (iii) Binge drinking is part of kiwi culture, (iv) In some situations it is hard to say I am not drinking and (v) There are places I no longer go to because of others' behaviour when drinking.

These outcomes were analysed using logistic regression models in which we modelled the probability of "Agree" (vs "Neutral/Disagree"). The category "Agree" merged the categories "strongly agree" and "agree". The category "Neutral/Disagree" merged the categories "neutral", "disagree" and "strongly disagree". The explanatory variables fitted were age, gender, location, survey year and risky drinker (yes/no).We also tested the explanatory variables rural/urban, highest qualification achieved, and the interaction between location and rural/urban, but these were not significant.

Access to alcohol

The outcome analysed using logistic regression was "It is easy to get to licensed premises from where I live". We modelled the probability of "Agree" (vs "Neutral/Disagree") as above. The explanatory variables fitted were age, gender, location, rural/urban, highest qualification achieved and risky drinker (yes/no).We also tested the explanatory variables survey year and the interaction between location and rural/urban, but these were not significant.

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