Draft literature review: Evidence to delay on-set of drinking with intermediate age children

Background

The legal age of purchase of alcohol in New Zealand is 18 years of age. There is no legal age of first drink. It is estimated that the age of first drink (more than a few sips) is well below the purchase age, ranging from 12.6 years (Campbell, et al, 2019) to around 14.6 years (Kypri et al, 2009). The current advice to parents is not drinking alcohol is the safest option for children and young people under 18 years. Those under 15 years of age are at the greatest risk of harm from drinking alcohol and not drinking in this age group is especially important. For young people aged 15 to 17 years, the safest option is to delay drinking for as long as possible (www.alcohol.org.nz).

In 2010, the Law Commission in its report 'Alcohol in Our Lives: Curbing the Harm' made 153 recommendations to the government aimed at reducing alcohol related harm in New Zealand. Many of the key recommendations of the report, such as raising the legal age of purchase back to 20 years of age, mechanisms for increasing the price for alcohol, restricting or banning alcohol advertising, and other measures aimed at restricting access to alcohol were not actioned. Other recommendations aimed at reducing alcohol harm in youth, such as restricting the alcohol content of drinks considered popular with youth (e.g. ready to drinks (RTDs)) to no more than 1.5 standard drinks has also not been implemented. The report did lead to the development of the Sale of Liquor Act 2012 which, among other measures, gave local councils the mandate to set Local Alcohol Policies (with the input of local communities) and made it illegal to supply alcohol to minors (under 18 years of age) without the permission of their parent or caregivers.

Current situation in New Zealand

Findings from the 2018/19 New Zealand Health Survey show that 58.2% of young adults aged 15-17 years had an alcoholic drink in the past year. In comparison, the 2006/7 New Zealand Health Survey found that 74.5% of young adults aged 15-17 years had an alcoholic drink in the past year (Ministry of Health, 2019).

Findings from the 2012 Youth Survey, conducted with 8,500 secondary school aged students (12-18 years of age) throughout New Zealand (Clarke, et al, 2013), found that 57% of students had ever tried alcohol, with 45% continuing to drink beyond their first experience of alcohol and 8% drinking alcohol weekly or more frequently. Nearly a quarter of secondary students (23%) reported having engaged in binge drinking (five or more alcoholic drinks within four hours) in the last four weeks.

The 2012 Youth Survey concluded that binge drinking is the most common form of problem substance use among New Zealand secondary school students, well ahead of other substance use, such as marijuana (13% current use) and other drug use including party pills (4%), ecstasy (3%), LSD (1%) and methamphetamine or 'P' (1%) (Clarke, et al, 2013). The Youth Insights Survey (Gurram et al, 2020) also found that alcohol was the most frequently used substance by 30% of adolescents aged 14-15 years of age . In comparison, 8% of adolescent aged 14-15 years of age smoked tobacco and a further 8% smoked cannabis. Māori were 1.5 times more likely to have drank alcohol in the past month, than non-Māori. Students with low to moderate self-esteem were 2.3 times more likely to have drank alcohol in the past month compared to those students with high self-esteem.

Students with low social connectedness were 2.2 more likely to have drank alcohol in the past month, than those with high social connectedness.

A recent study conducted with 579 Year 10 (14-15 year old) secondary school students in Southland, Otago and Hawkes Bay found that 54% had consumed alcohol (more than a few sips), with 23% having done so at least once within the last four weeks. Thirteen percent reported regularly binge drinking, i.e. drinking more than five drinks in one session. Regular binge drinking was more common among students in lower socioeconomic schools, with almost a third of students in the lowest socioeconomic group reporting drinking five or more drinks every time they drink. The report concluded that there may be benefits of alcohol education resources for parents and children as young as 12 years of age (Campbell, et al, 2019). It was noted, in this report, that most students (69%) identified their parents as the primary source of advice regarding alcohol use.

Social supply to adolescents in New Zealand

Findings from the 2012 Youth Survey showed that parents (60%) were the most common source of alcohol for current drinkers, followed by friends (44%), getting someone else to buy alcohol for them (30%) and being able to buy it themselves (11%) (Clarke, et al, 2013).

A qualitative study of 20 high school aged children, conducted in New Zealand in 2017, explored the strategies that adolescents used to obtain alcohol from their parents. The key strategies included a direct request (indicating they felt it was an acceptable request), either by asking for the parent to buy alcohol or getting money from their parents for older friends or siblings to buy alcohol. Adolescents put considerable effort into either demonstrating they were responsible enough to be brought alcohol or intentionally behaving well or 'sucking up' in order to persuade parents to supply alcohol. Parents also played a part in directing the amount and strength of the alcohol provided (e.g. parents would not provide straight spirits but opted to buy lower strength alcohol products) and setting restrictions, such as only consuming the alcohol at home. Parents of females were more likely to impose restrictions in their supply of alcohol than parents of males. Adolescents entered into a bargaining relationship with their parents in order to get alcohol supplied. It was also reported that the majority of participants in the study also stole alcohol from their parents. The adolescents did not see taking alcohol without parental consent as stealing, but referred to it as 'taking' or 'getting' alcohol from home. The study concluded:

> *Health education programmes are needed to provide parents with strategies on how to effectively manage the social pressure to supply alcohol to their children and to take effective steps to restrict alcohol access in the home, including youth taking alcohol without consent. (Dresler, et al, 2017 p576).*

Campbell et al (2019) found about 14% of the Year 10 cohort who drink were potentially doing so without their parents' knowledge and were sourcing alcohol illegally.

Impact of change of law for supplying to minors in New Zealand

In December 2013, under section 241 of the Sale and Supply of Alcohol Act 2012, it became illegal to supply alcohol to minors who were not your own children, unless with the express consent of the parent or guardian of the minor. The law also emphasised the need to provide supervision of drinking to under 18 year olds.

A study of patterns of social supply over time, conducted by Massey University in 2015, showed that the change in legislation had made some impact on patterns of social supply of alcohol to minors in New Zealand. The study found no change in the prevalence of supply or the quantities supplied, but there was a small, and statistically significant, decrease in the frequency of social supply overall.

Fewer people reported supplying friends under 18 years following the law change (30% in 2013 and 22% in 2015) and supplied fewer drinks (13 drinks in 2013 and 11 drinks in 2015). There was also a tendency for greater supervision of social supply to friends (and to other relatives).

Parents were still the most common suppliers to under 18 year olds, followed by other relatives and friends. On average, suppliers who supervised the under 18 year olds provided 6.5 standard drinks compared with 10 standard drinks by those who did not supervise. Beer and RTDs were the most commonly supplied drinks to under 18 year olds. Parents/caregivers supplied lower amounts, usually the equivalent of a six pack of 4% beer, while friends usually supplied about double that amount with the equivalent of almost a dozen 4% beers (Huckle, et al, 2018).

Recent literature, quoted in a statement of alcohol use by youth and adolescents, suggests that:

> *For 9-13 year old children and girls aged 14-17 years, binge-drinking should be defined as 3 or more drinks. For boys, binge-drinking should be defined as 4 drinks or more for those aged 14 or 15 years and 5 or more drinks for those aged 16 or 17 years (American Academy of Pediatrics, 2010, p1080).*

This implies that New Zealand parents and others are potentially enabling risky drinking in young people by supplying more than the recommended number of drinks.

Impact of alcohol use in adolescence – New Zealand and international literature

Overall the literature outlines a number of negative impacts of alcohol use in adolescence. A recent summary of evidence regarding understanding alcohol use and subsequent harms in young people concluded:

> *Young people's alcohol use may affect normal development of brain structure and function, and is associated with injuries, road traffic accidents, unsafe and/or unwanted sex, affected school performance, mental health problems, crime and victimization. (Health Promotion Agency, 2020).*

Data from longitudinal studies, both in New Zealand and overseas, show that the age at which young people start drinking does matter. The American Academy of Pediatrics (2010) states for those aged 12 years or younger at first use, the prevalence of lifetime alcohol dependence was 40.6%, whereas for those who had their first drink at 18 years, it was 16.6% and at 21 years, 10.6%. In the longitudinal study based in Christchurch (where participants were born in 1977), early age of first intoxication was a predictor of future problems, including major depression, anxiety disorder, and nicotine, cannabis and other illicit drug dependence (Newton-Howes, et al, 2018).

In the Dunedin Multidisciplinary Health and Development study, which followed people born in 1972, researchers have found that early onset of drinking (before or at the age of 15 years) predicted higher frequency of drinking in males aged 18 – 26 years (Casswell, et al, 2003). In a

survey of 800 older (55 years and over) New Zealanders, initiation of alcohol use during adolescence (from 14 to 18 years of age) was common, more likely in men, and a hallmark of frequent drinking in later life (Tower, et al, 2018).

New developments in research regarding alcohol use in adolescence

New developments in neuroscience have led to a greater understanding of the harm caused by alcohol to the adolescent brain. During adolescence, the frontal cortex/lobes develop, moving from an immature brain into a mature one. These changes are thought to improve cognitive processing in adulthood, with studies showing that the frontal lobes are essential for functions such as response inhibition, emotional regulation, planning and organization (Sowell et al, quoted in the American Academy of Pediatrics, 2010). A systematic review of evidence of the impact on alcohol use of the human adolescent brain concluded:

> *Ultimately, these collective data suggest that there is a different pattern of brain structure and function for AU [Alcohol Use] versus non-AU [Alcohol Use] youth. Concretely, these brain-based differences are relevant because they had been found to place youth at greater risk for future binge drinking and sustained AUDs [Alcohol Use Disorders] long into adulthood. (Feldstein Ewing et al, 2014, p433).*

The review also indicated that there were gender differences in the effect of alcohol on the developing adolescent brain with a more deleterious effect of alcohol on young female brain development.

Research has also shown that patients with adolescent-onset alcohol-use disorders have reduced hippocampal volumes and subtle white-matter abnormalities, resulting in difficulties in learning new information and reduced memory skills (American Academy of Pediatrics, 2010). Wallis (2019) states that adolescents who drink more than one standard drink an hour can cause irreversible shrinkage to the hippocampus, with the younger the age they starting drinking, the greater the shrinkage.

The literature also indicates that the effects of drugs and alcohol on an immature prefrontal cortex may increase the incentive to abuse substances, especially to decrease the effects that are felt during withdrawal, making the teenage brain more vulnerable to the addictive actions of drugs and alcohol (American Academy of Pediatrics, 2010). Adolescent drinking is associated with increased mental health difficulties, such as depression, self-harm and alcohol abuse or dependence in adulthood. Due to a reduction in teenager drinkers' ability to judge risks, one key risk is also criminal behaviour, with research showing that those who drink as teens are more likely to be involved in stealing (O'Neill, 2019).

Secondary school students in the Youth 2012 survey who were current drinkers reported a range of problems that had occurred after drinking alcohol, including unsafe sex (12%), unwanted sex (5%) or injuries (15%). Eleven percent of current drinkers had been told by friends and family that they needed to cut down on their drinking (Clarke, et al, 2013).

In summary, the developing adolescent brain is more vulnerable and can be more severely affected by alcohol than a developed adult brain.

> *Individuals, who start using substances at an early age are more likely to become poly-substance users, suffer from addiction and health and psychological problems in later life (Arnarsson, et al, 2018, pS49).*

Risk factors for early drinking

A literature review conducted for the Health Promotion Agency (Carter, et al, 2017) on Alcohol and Young People (aged 12 to 24 years) identified the factors that influence young people's drinking. These included:

- Parental supply of alcohol is a risk factor for young people to engage in risky drinking.
- Family connectivity and parental disapproval of drinking appear to mitigate the risk for alcohol misuse.
- Overall, lower levels of formal education are a risk factor for engaging in risky drinking, although a deviation from this can be seen in the drinking behaviours of some university students.
- Socio-economic factors can play a role in risky drinking behaviours. There is a tendency for young people from areas of high socio-economic deprivation to drink less frequently, but to be more likely to engage in risky drinking with a greater burden of alcohol-associated harm. However, the relationship is not always clear.

The literature highlights the significant role parents play in whether or not young people drink, with many studies showing parent approval of any level of drinking and parents supplying alcohol is linked to worse, not better outcomes.

> *'Many parents wanting to support their teens think that they can teach them to drink safely by giving them alcohol and watching over them. Although this is well-intended and commonly believed, many studies now show that parent approval of any level of drinking and parents supplying alcohol is linked to worse, not better outcomes'* (O'Neill, 2019).

It is also noted that children don't need to have a whole drink to be affected. Children who had sipped alcohol before they were 10 years old were found in one study to be almost twice as likely to be drinking by 15 years of age (Donovan and Molina, 2011, cited by O'Neill, 2019). The Dunedin Multidisciplinary Health and Development study found that ease of access to alcohol at age 15 was predictive of both men and women consuming higher typical quantities at ages 18-26 years (Casswell, et al, 2003). A report on New Zealanders' alcohol consumption across their lifespan found that, for men, the presence of parents that were heavy drinkers was linked to a high frequency and high quantity of drinking pattern in later life (Towers, et al, 2018).

A longitudinal study conducted among Finnish boys and girls concluded that the more parents know about their adolescent's whereabouts and activities at age 13, the less likely they are to consume alcohol at age 16 years (Lindfors, et al, 2018). A study in Iceland (Arnarsson, et al, 2017) also found that prevention policies aimed at reducing alcohol use in adolescents were successful, not due to a change in attitude, but by having increased parental monitoring and reduced availability of alcohol in the community. Having friends that were drinkers, and living in communities where alcohol was easily accessible, were also risk factors highlighted by the American Academy of Pediatrics (American Academy of Pediatrics, 2010).

Findings from a UK Millennium Cohort Study on 10,498 11 year olds found that, while only a very small proportion (13.6%) reported having drunk alcohol, there were a number of risk factors for early drinking. These included parental drinking, having friends that drank, having positive expectancies towards alcohol, not being supervised, frequent battle of will, and not being happy with family. Those who did not drink had a heightened perception of alcohol-related harm and negative expectancies around alcohol (Kelly et al, 2016). This latter finding is supported by Campbell et al's 2019 study of Year 10 students in New Zealand, where students who did not drink used words like 'dangerous', 'bad' and 'addictive' more frequently to describe why they did not drink. Those who did drink were more likely the use the words 'fun', 'drunk', 'yum', 'good', 'social'.

Findings from the Youth 2012 survey also found that those students who used substances (mainly binge drinking) at levels that are most likely to cause them harm, are more likely to have challenging family and school lives than other students. That study concluded that problem substance users are more likely to have experienced violence and face multiple health risks and challenges (Fleming et al, 2014).

Positive Parental factors

A summary of evidence regarding understanding alcohol use and subsequent harms in young people (HPA, 2020)found the following parental factors were reported to be protective against adolescent drinking and experiences of alcohol related harm:

- Parental monitoring
- Parental alcohol-specific rules
- Parental religiosity
- Parent-child relationship quality
- Parental support
- Parental involvement.

Key messages for delaying on-set of drinking

- *That people under 15 years should not drink any alcohol, and that those under 18 years delay drinking for as long as possible* (O'Neill, 2019). It is noted that the majority (55%) of secondary students (13 to 18 years) in the Youth 2012 study were not current drinkers (Clark, et al, 2013). *It is a myth that all young people are drinkers.*

- *The developing adolescent brain is more vulnerable and can be more severely affected by alcohol than a developed adult brain. The earlier the on-set of drinking the greater the damage to the brain* (Sowell et al, quoted in the American Academy of Pediatrics, 2010; Wallis, 2019).

- *Early age of first intoxication is linked to more problems in later life* including major depression, anxiety disorder, and nicotine, cannabis, and other illicit drug dependence (Newton-Howes, et al, 2018).

- *Binge drinking is the most common form of problem substance use among New Zealand secondary school students*, well ahead of other substance use (Clarke, et al, 2013).

- *Parental approval and supply of alcohol is a risk factor for risky/binge drinking in young people* (Carter, et al, 2017).

- *For men, having parents who are heavy drinkers is a risk factor for the development of a hazardous drinking pattern in later life* (Tower, et al, 2018).

- *Parents need to be supported to plan how to address the pressure to supply alcohol to adolescents*, including when adolescents take alcohol from home without parental consent (Dresler, et al, 2017; Campbell, et al, 2019).

- *Parents need to be aware of where their children are, and who they are friends with*. (Lindfors, et al, 2018; Arnarsson, et al, 2017).

Best ways of delivering messages for delaying on-set of drinking

The literature highlights the need for active parent involvement in drug and alcohol education. A recent study of alcohol use in Year 10 students in New Zealand (Campbell, et al, 2019) found that most students (69%) identified their parents as the primary source of advice regarding alcohol use. Parents are in a prime position to be involved in educating their children about alcohol.

Intermediate aged children are also a priority age group, as studies have shown that alcohol-harm reduction education is more beneficial before adolescents establish a drinking pattern (Campbell, et al, 2019). Tower et al (2018), in a report on New Zealanders' alcohol consumption patterns across the lifespan, found that once established, drinking patterns (being hazardous or non-hazardous) are largely stable across the lifespan. Only a small minority of participants (aged 55 years and older) showed movements between hazardous and non-hazardous drinking patterns.

Although there have been considerable resources put into alcohol and drug education at school, evaluation shows that these programmes, although increasing knowledge around substances, do not generally reduce substance use or addiction. Mass media campaigns have also proved to be ineffective against existing pro-alcohol advertising. A study of 11-13 year olds using wearable cameras found that they were exposed to alcohol advertising 4.5 times per day. One of the key ways they were exposed to alcohol advertising was through alcohol sports sponsorship. Other ways included shop front signage (more common in higher deprivation areas were there was greater density of off-licences) and merchandise (often sporting related). Children who were Māori, Pasifika and boys had higher levels of exposure (Chambers, et al, 2018). Labels on alcohol warning consumers about the risks of excessive use of alcohol are also mostly ignored and are not effective in reducing alcohol consumption or alcohol-related harms (Fergussion, et al,2020).

Dresler et al (2017) also suggest that parents need strategies on how to effectively manage the social pressure to supply alcohol to their children and to take effective steps to restrict alcohol access in the home, including youth taking alcohol without consent.

References

American Academy of Pediatrics (2010). Policy Statement – Alcohol Use by Youth and Adolescents: A Pediatric Concern. Pediatrics Vol 125, Number 5, May 2010, pp 1078-1087.

Arnarsson, A, Kristofersson, G & Bjarnason T (2018). Adolescent alcohol and cannabis use in Iceland 1995-2015, Drug and Alcohol Review (April 2018), 37 (Suppl. 1), S49-S57.

Campbell, S, Jasoni,C & Longnecker , N (2019) Drinking patterns and attitudes about alcohol among New Zealand adolescents, Kotuitui: New Zealand Journal of Social Sciences Online, 14.2, 276-289.

Carter, K., & Filoche, S., & McKenzie, S. (2017). Alcohol and young people: A review of New Zealand and other international literature. Report commissioned by the Health Promotion Agency. Wellington: Health Promotion Agency.

Cassell S, Pledger M, Hooper R. 2003 Socioeconomic status and drinking patterns in young adults. Addiction.98 (5):601-610.

Chambers T, Stanley J, Signal L, Pearson A, Smith M, Barr M &Ni Mhurchu C (2018). Quantifying the Nature and Extent of Children's Real-time Exposure to Alcohol Marketing in Their Everyday Lives Using Wearable Cameras: Children's Exposure via a Range of Media in a Range of Key Places. Alcohol and Alcoholism, 2018, 53(5) 626-633.

Clark, T. C., Fleming, T., Bullen, P., Denny, S., Crengle, S., Dyson, B., Fortune, S., Lucassen, M., Peiris-John, R., Robinson, E., Rossen,F., Sheridan, J., Teevale, T., Utter, J. (2013). Youth'12 Overview: The health and wellbeing of New Zealand secondary school students in 2012. Auckland, New Zealand: The University of Auckland

Dresler, E, Whitehead, D, & Weaver, K (2017). Exploring adolescent-parent interaction strategies for accessing alcohol at home. Health Education Vol 117 No 6, 2017 pp 556-580.

Feldstein Ewing, S, Sakhardande, A, Blakemore, S (2014). The effect of alcohol consumption on the adolescent brain: A systematic review of MRI and fMRI studies of alcohol-using youth. NeuroImage:Clinical (2014) pp 420-437.

Fergusson, D & Boden, J, (2020) Alcohol Use in adolescence, downloaded at a PDF on 10/02/20 from: https://www.otago.ac.nz/christchurch/otago018747.pdf

Fleming, T. Lee, A.C., Moselen, E., Clark, T.C., Dixon, R. & The Adolescent Health Research Group (2014). Problem substance use among New Zealand secondary school students: Findings from the Youth'12 national youth health and wellbeing survey. Auckland, New Zealand: The University of Auckland.

Gurram, N., & Brown, L. (2020). *Substance use behaviour among 14 and 15-year olds: Results form a nationally representative survey.* Wellington, New Zealand: Health Promotion Agency/Te Hiringa Hauora (HPA).

Health Promotion Agency. (2020), *Understanding alcohol use and subsequent harms in young people. An evidence summary.* Wellington: Health Promotion Agency.

Huckle, T., & Romeo, P. (2018). *Patterns of social supply of alcohol over time in New Zealand.* Wellington: Health Promotion Agency.

Kelly, Y, Goisis, A, Sacker, A, Cable, N, Watt, R & Britton, A (2016). What influences 11 year olds to drink? Findings from the Millennium Cohort Study. BMC Public Health (2016) 16:169.

Kypri K, Paschall M, Langley J, Baxter J, Cashell-Smith M, Bourdean B. 2009. Drinking and alcohol-related harm among New Zealand university students: findings from a national web-based survey. Alcoholism: Clinical and Experimental Research. 33(2):307-314.

Linfors, P, Minkkinen, j, Katainen, A, Rimpela (2019). Do maternal knowledge and parental knowledge of children's whereabouts buffer differently against alcohol use? A longitudinal study among Finnish boys and girls. Drug and Alcohol Dependence 194 (2019) 351-357.

Ministry of Health (2019) NZ Health Survey 2018-19. Data retrieved on 6/1/20 from https://minhealthnz.shinyapps.io/nz-health-survey-2018-19-annual-data-explorer/_w_0976bc1f/#!/explore-indicators

Newton-Howes, G., Cook, S., Martin, G., Foulds, J. A., & Boden, J. M. (2018). Comparison of age of first drink and age of first intoxication as predictors of substance use and mental health problems in adulthood. *Drug & Alcohol Dependence*. Advance online publication. doi: 10.1016/j.drugalcdep.2018.10.012,

O'Neill, K (2019). Rethinking Teen Drinking, Brainwave Trust Aotearoa, paper downloaded from website: http://www.brainwave.org.nz/wp-content/uploads/Rethinking-teen-drinking.pdf

Towers, A., Sheridan, J., Newcombe, D., & Szabó, Á. (2018). *New Zealanders' alcohol consumption patterns across the lifespan.* Wellington: Health Promotion Agency.

Wallis Nathan (2019) Over the limit: Are young people really drinking less, Stuff, December 19, 2019, article downloaded on https://www.stuff.co.nz/life-style/well-good/118230286/over-the-limit-are-young-people-really-drinking-less.

https://www.alcohol.org.nz/help-advice/advice-on-alcohol/low-risk-alcohol-drinking-advice