

# **An Alcohol-Free Start to Twenty Twenty-Three:**

**A Brief Internet-Delivered Intervention Targeting Individuals with Mild to Moderate Alcohol Use Disorder (AUD), Assisted by Goal Coaches.**

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## I. Abstract

**Background:** Alcohol use disorder (AUD) is a psychiatric condition that impairs control, has social repercussions, and causes dependency. AUD is a relapsing disorder that affects 5.1% of the global population. Furthermore, just 9% of New Zealanders seek professional treatment. Brief internet-delivered therapies for mild to moderate AUD have been successful in recent years, and are more convenient, removing barriers like accessibility. Nonetheless, while internet-delivered AUD therapies are effective, they garner poor engagement and are highly attritional. The inclusion of social support has the potential to address these difficulties but is yet to be fully explored.

**Aim:** This study investigates how a brief, lived experience-based intervention affects alcohol use and related issues in mild to moderate AUD. This study also evaluates goal coach social support for study engagement and retention.

**Methods:** This study uses a pre-post exploratory design. Data was collected on Day 0 and Day 28 using Qualtrics. Questionnaires measured the intervention's impact on alcohol reduction by assessing participants' alcohol use, severity, drinking motives, volitional state, and self-efficacy. During the intervention, goal setting, plan formulation, feedback response, and note-taking were measured for participant engagement, whilst post-intervention assessments measured retention. The Alcohol Habit Hacker PALS (HHPALS) intervention is part of a series of self-help programmes for addictive behaviours. This study extends previous work by exploring engagement methods, such as incorporating goal coaches and hosting the challenge as a New Year's Resolution challenge, leveraging intrinsic motivation. HHPALS uses the Health Action Process Approach (HAPA) and Self-Determination Theory (SDT) as underpinning theories, and Behavioural Change Technique (BCT) components such as goal setting, action and coping planning, and self-monitoring. Participants established their own alcohol intake and frequency goals for the challenge. Additionally, they were instructed to design a plan using a strategy from those provided and to create a coping plan for obstacles.

**Results:** This research recruited 86 volunteers using Facebook advertising and word-of-mouth, with 48 participants completing the post-intervention assessment. Participants reported improvements in post-intervention measures, including a significant decrease in alcohol consumption. Consistent with participant evaluation, the New Year's timing contributed to the success of the intervention for approximately half of the participants. In contrast, others struggled to meet their goals due to social engagements and temptations that complement the season.

**Conclusion:** HHPALS is a successful and beneficial therapy endorsed by significant decreases in AUDIT-C scores, alcohol intake frequency, and large improvement in self-efficacy in resisting alcohol urges. Goal coaches played a crucial role in enhancing the intervention's effectiveness and fostering participant engagement; however, it is recommended that HHPALS sees advancements in technology, social support systems, and content customisation to increase user experience and engagement. HHPALS has made progress in supporting AUD patients, but external social and legislative adjustments are needed.

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## IV. Abbreviations

<b>AUD</b>	Alcohol Use Disorder
<b>AUDIT</b>	Alcohol Use Disorder Identification Test
<b>ASSIST</b>	Alcohol, Smoking, and Substance Involvement Screening
<b>DSM</b>	Diagnostic and Statistical Manual of Mental Disorders
<b>SBRIT</b>	Screening, Brief Intervention, and Referral to Treatment
<b>HHPALS</b>	Alcohol Habit Hacker PALS
<b>PALS</b>	Peer-Assisted Learning Strategies
<b>SUD</b>	Substance Use Disorder
<b>OECD</b>	Organisation for Economic Cooperation and Development <i>A unique intergovernmental forum consisting of approximately 38 member countries, founded in 1961 to stimulate economic progress and world trade.</i>
<b>ADHD</b>	Attention Deficit Hyperactivity Disorder
<b>CBT</b>	Cognitive Behavioural Therapy
<b>ICBT</b>	Internet-based Cognitive Behavioural Therapy
<b>MET</b>	Motivational Enhancement Therapy
<b>CRAFT</b>	Community Reinforcement and Family Training
<b>AA</b>	Alcoholics Anonymous
<b>NA</b>	Narcotics Anonymous
<b>SMART</b>	Self-Management and Recovery Training
<b>ED</b>	Emergency Department
<b>NIAAA</b>	National Institute on Alcohol Abuse and Alcoholism
<b>PAT</b>	Paddington Alcohol Test
<b>CAGE</b>	Cutting Down, Annoyance by Criticism, Guilty Feeling, Eye-openers



*A 4-question alcoholism screening tool.*

<b>COVID-19</b>	Coronavirus Disease
<b>FRAMES</b>	Feedback, Responsibility, Advice, Menu of strategies, Empathy, and Self-efficacy <i>An approach used in brief interventions for alcohol abuse.</i>
<b>TAI</b>	Temporary Abstinence Initiative <i>Initiatives such as Febfast and Dry July</i>
<b>TLFB</b>	Timeline Follow-Back
<b>TLFF</b>	Timeline Follow-Forward
<b>PACS</b>	Penn Alcohol Craving Scale
<b>TIPI</b>	Ten-Item Personality Inventory
<b>BSCQ</b>	Brief Situational Confidence Questionnaire
<b>SCQ</b>	Situational Confidence Questionnaire
<b>PWI</b>	Personal Wellbeing Index
<b>HAPA</b>	Health Action Process Approach
<b>SDT</b>	Self-Determination Theory
<b>MI</b>	Motivational Interviewing
<b>SPSS</b>	Statistical Package for the Social Sciences <i>A statistical software program developed by IBM for data management, advanced analytics, and multivariate analysis.</i>
<b>PTSD</b>	Post-Traumatic Stress Disorder
<b>SD</b>	Standard Deviation
<b>CI</b>	Confidence Interval
<b>RDS</b>	Respondent-Driven Sampling
<b>PNF</b>	Personalised Normative Feedback

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# **Chapter 1. Background and Literature Review**

## **Introduction to Alcohol and Alcohol-Related Harms in New Zealand**

Alcohol is a widely available product associated with significant harm. Repeated alcohol consumption has the potential to develop a variety of adverse outcomes, including alcohol use disorder (AUD). The negative consequences of alcohol use are well established and are known to impact the individual and others and is consistently associated with a range of short- and long-term harms (Rehm et al., 2003; World Health Organization, 2014).

Excessive alcohol consumption is associated with an increased risk of illness and death and has an evident causal relationship with over 60 other medical conditions, most of which are damaging (Carvalho et al., 2019; Grant et al., 2015; Meiklejohn et al., 2012; Rehm et al., 2003; Room et al., 2005). Alcohol-related harms and mortality occur on a socioeconomic gradient, disproportionately affecting low-socioeconomic communities. Individuals within low-socioeconomic groups are twice as likely to suffer from alcohol-related disorders and harms than their high-socioeconomic counterparts (Carvalho et al., 2019; Meiklejohn et al., 2012).

Globally, 3.8% of deaths across all age groups can be attributed to alcohol (Parry et al., 2011; Rehm et al., 2009). Within the United States, 31% of driving fatalities were caused by alcohol impairment (Barata et al., 2017). Autopsy reports state that 56% of suicide victims in the United States suffer from excessive alcohol use. The most significant determinant of suicide among these individuals is having a diagnosis of major depression (Conner et al., 2003; Conwell et al., 1996). Suicide attempts are generally most prevalent following recent intoxication, with a 10-fold increase in standardised mortality rates for suicides among individuals with AUD (Yuodelis-Flores & Ries, 2015).

Alcohol-related harm can be categorised into three broad types: toxicity, intoxication, and dependence (Meiklejohn et al., 2012). There is also a wide variety of social harm, including legal problems, harm to employment, finances, relationships, and violence. Alcohol consumption is a significant cause of non-fatal injuries such as traffic accidents, falls, poisoning, and self-inflicted injuries such as cuts, burns or broken bones caused by impaired judgement (Carvalho et al., 2019; Grant et al., 2015; Meiklejohn et al., 2012; Rehm et al., 2003; Rehm et al., 2003; Room et al., 2005; World Health Organization, 2014).

According to the 2020/21 New Zealand Health Survey, four out of every five adults consumed alcohol, and one in five New Zealand adults is a hazardous drinker (Ministry-of-Health, 2022). Hazardous drinkers are individuals whose drinking patterns increase the risk of harm and consequences for themselves and others (Babor et al., 1992). Whereas harmful drinkers are individuals who are already experiencing such problems. The Ministry of Health New Zealand defines hazardous drinkers using the Alcohol Use Disorder Identification Test (AUDIT), in which individuals must score eight or above to be considered a hazardous drinker. A score of eight can be acquired simply by having six or more standard drinks, defined by the Ministry of Health as 10 grams of pure alcohol, on one occasion, twice a week. (Ministry-of-Health, 2016).

Approximately 18% of New Zealanders report harmful or hazardous drinking (Foulds et al., 2012; Ministry-of-Health; Wells et al., 2006). While only 9% of individuals who report hazardous or harmful drinking habits recall speaking to their primary health provider regarding their alcohol use and related harms (Foulds et al., 2012; Ministry-of-Health; Wells et al., 2006). Hazardous drinking is most prevalent in Māori populations (33%), followed by Pacific (26.5%), European/other (21%), and Asian (6%), and is also more common among men, who are 1.1 times more likely than women to consume alcohol (Ministry-of-Health,

2022). The age groups most affected by hazardous drinking are 18-24-year-olds (35%), followed by 25-34-year-olds (24%) (Ministry-of-Health, 2022).

Despite a legal drinking age of 18 in New Zealand, alcohol was consumed by 57% of 15-17-year-olds, a rate that has remained relatively unchanged since 2012 (59%) (Ministry-of-Health, 2022). Within New Zealand hospitals, 18-29-year-olds have the greatest incidence of alcohol-related injuries and fatalities, while also having the most frequent episodes of weekly binge drinking, consuming at least six drinks on a single occasion (Ministry-of-Health, 2016). Furthermore, people aged 16 to 25 have the greatest rates of alcohol-related offences and are more likely to be involved in violent altercations or sexual assaults (Ministry-of-Health, 2016; Wells et al., 2004). Based on findings from the 2014 New Zealand Crime and Safety Survey, it was determined that in 39% of violent interpersonal offences, alcohol use was a factor, either by the perpetrator, the victim, or both parties involved (Ministry-of-Justice, 2015).

Because of the interaction between alcohol and the body's central nervous system, alcohol has the potential to be addictive. Alcohol at different doses can be both a stimulant (low amounts) and a depressant (high amounts) - lowered blood pressure and heart rate are examples of the depressing effects of alcohol. Alcohol increases activity levels in opioid and dopaminergic neurons, stimulating the brain's reward system and releasing endorphins. Simultaneously, alcohol inhibits neurotransmitter glutamate and enhances gamma-aminobutyric acid, resulting in relaxed, stress-free feelings (Koob, 2006; Koob & Volkow, 2016).

Across New Zealand, there is a highly competitive alcohol market resulting from increased accessibility and availability (Connor et al., 2011; Hill & Stewart, 1996). The minimum purchasing age for alcohol in New Zealand was reduced from 20 to 18 in 1999, influencing a number of alcohol trends across the country (Conover & Scrimgeour, 2013;

Gruenewald et al., 2015; Health-Promotion-Agency, 2018). There was an increase in the prevalence of alcohol consumption, the quantity of alcohol consumed, and the frequency of alcohol use, primarily among 18 to 19-year-olds. Alcohol use increased considerably in commercial settings such as bars and clubs, with an average increase of 15 visits per year. Similarly, alcohol consumption and frequency of consumption in non-commercial settings, such as private homes and house parties, increased among individuals aged 16-17 (Conover & Scrimgeour, 2013; Gruenewald et al., 2015). Alarming, the lowered purchasing age was associated with a noteworthy rise in hospitalisation rates, namely a 24.6% and 22% increase among 18- to 19-year-old males and females respectively (Conover & Scrimgeour, 2013). The ease of access and lack of alcohol taxation push down prices, especially in neighbourhoods with a high density of alcohol outlets, where some vendors stay open until the early hours of the morning (Connor et al., 2011; Kypri et al., 2009). This is especially concerning as two studies conducted by Dr. S. Casswell revealed that heavy drinkers were more likely to consume cheaper alcohol and to acquire it later in the day than the average consumer (Casswell et al., 2016; Casswell et al., 2014). Heavy drinkers aged 16 to 19 regularly consume ready-to-drink alcohol products (RTDs) that contain a high alcohol concentration relative to their low cost (Health-Promotion-Agency, 2018; Wall et al., 2017). Interestingly, Stockwell and Chikritzhs (2009) found that 11 out of 14 studies completed in New Zealand, Australia, the United Kingdom, and North America suggest that the hours of operation of pubs, bars, and nightclubs are directly related to an increase in hospital admissions and violent assaults (Stockwell & Chikritzhs, 2009).

### **The Diagnostic and Statistical Manual of Mental Disorders and the Classification and Characterisation of Alcohol Use Disorder**

The Diagnostic and Statistical Manual of Mental Disorders (DSM) is a comprehensive clinical guide used to diagnose a variety of mental disorders, including gender

dysphoria, schizophrenia, eating, personality, neurocognitive, anxiety, neurodevelopmental, bipolar, and substance-related addictive disorders (American-Psychiatric-Association, 2013).

The DSM-5, the fifth and most recent release of the DSM, is well-known for its dependability, validity, consistency, and impartiality.

Substance-related disorders are divided into two categories in the DSM-5: substance-induced disorders and substance use disorders (SUDs). Intoxication, withdrawal, and other substance-induced mental disorders (depressive disorder, anxiety, sleep disorder, obsessive-compulsive disorders, delirium, psychosis, bipolar disorder, and others) are examples of substance-induced disorders (American-Psychiatric-Association, 2013). Whereas, SUDs are characterised by a collection of cognitive, behavioural, and physiological symptoms, such as poor control and increased social implications, withdrawal, and tolerance. Additionally, SUDs are further distinguished by alterations in the brain's circuitry that may persist beyond detoxification, especially amongst users with severe disorders, resulting in intense cravings and relapse (American-Psychiatric-Association, 2013, 2022; Kranzler, 2023). SUDs encompass a variety of substances, such as alcohol, cannabis, caffeine, tobacco, opioids, hallucinogens, and others. When taken in excess, these substances can directly and intensely activate the brain's reward system, the neuronal system involved in the reinforcement of behaviours. Persistent activation of this system results in reinforcement of drug-taking behaviours, eventually causing intense cravings and addiction (Koob, 2006). Individuals with lower levels of self-control lack vital inhibitory mechanisms within the brain and are, therefore, more likely to develop SUDs (American-Psychiatric-Association, 2013; Koob, 2006).

Alcohol use disorder (AUD) is a psychiatric condition classified in the DSM-5 as a SUD (American-Psychiatric-Association, 2013, 2022; Kranzler, 2023). Individuals with AUD experience unpleasant withdrawal symptoms as their brain circuitry becomes increasingly dependent on alcohol, raising cravings and increasing the probability of

relapse. These cravings and dependency increase the difficulty of achieving abstinence or reducing their, intake despite negative social, emotional, and physical repercussions that interfere with their education or employment (Rehm et al., 2016; Tuithof et al., 2014).

The DSM-5 contains 11 criteria to establish a definite diagnosis of AUD and severity. Four key categories within the DSM-5 are: impaired control, social impairment, hazardous use, and physiological criteria. An individual is diagnosed with AUD if they fulfil at least 2 of the 11 criteria within the same 12-month period (American-Psychiatric-Association, 2013, 2022). The degree of AUD ranges from mild to severe, determined by the number of criteria satisfied: mild AUD indicated by 2-3 criteria, moderate AUD by 4-5, and severe AUD indicated by 6 or more (American-Psychiatric-Association, 2013; National-Institute-of-Health, 2021a).

### **AUD and Common Screening Tools**

There are various screening tools used to identify individuals at risk of developing AUD. Two screening tools discussed in this thesis are the Alcohol Use Identification Test (AUDIT) and the Alcohol, Smoking and Substance Involvement Screening Test (ASSIST).

#### ***The Alcohol Use Identification Test (AUDIT)***

The AUDIT, a brief screening tool, is used to identify individuals with alcohol problems, including individuals who are in the early stages of AUD. The AUDIT consists of a 10-item scale distinguishing between hazardous and harmful drinking (Babor et al., 1992). The AUDIT is scored from 0 to 40 and is determined by calculating an individual's total score based on the value given for each item. When using the AUDIT, a score of 1-7 suggests a low risk of alcohol consumption, 8-14 suggests hazardous or harmful consumption, and a



score of 15 or more indicates the likelihood of alcohol dependence or moderate-severe AUD (Babor et al., 1992; Saunders, 2015; Saunders et al., 1993).

The Alcohol Use Disorders Identification Test-Consumption (AUDIT-C) is a streamlined version of the AUDIT consisting of 3 of the 10 AUD screening questions. These 3 items pertain to consumption: alcohol intake, dependence, and adverse consequences (Babor et al., 1992; Dawson et al., 2012; Rubinsky et al., 2013; Saunders et al., 1993). The AUDIT-C is a validated tool for detecting the misuse of alcohol and a range of alcohol-related issues, including alcohol dependence, the severity of problem drinking, hospitalisations, and death. The validity of the AUDIT-C has been demonstrated in primary (Bradley et al., 2007; Gordon et al., 2001; Gual et al., 2002) and emergency care settings (Kelly et al., 2009), as well as among the general population (Dawson et al., 2005) and Veterans Affairs patients (Bradley et al., 2003; Bradley et al., 2016).

Given the effectiveness and brevity, the AUDIT-C is currently more widely utilised for regular screening in primary care settings when compared to the full AUDIT (Bradley et al., 2016; Rubinsky et al., 2013; Uljas et al., 2020).

### ***The Alcohol, Smoking and Substance Involvement Screening Test (ASSIST)***

The Alcohol, Smoking and Substance Involvement Screening Test (ASSIST) was developed for The World Health Organization by a group of addiction researchers (Humenuik et al., 2010). ASSIST is a reliable screening tool primarily used in primary healthcare settings and administered by healthcare workers. ASSIST has proven to be a highly valid screening tool for measuring substance use, abuse, and dependence with varying degrees of substance involvement (Humenuik et al., 2008; Newcombe et al., 2005). The ASSIST screens for several substances: tobacco, alcohol, cannabis, cocaine, amphetamines, hallucinogens, opioids, and more (Humenuik et al., 2012; Humenuik et al., 2008; Humenuik

et al., 2010). ASSIST is an 8-item questionnaire that takes approximately 5 to 10 minutes to complete.

ASSIST contains 8-items, which it uses to determine an individual's level of risk (Humenuik et al., 2008; Humenuik et al., 2010). ASSIST scores are obtained by combining the values from each item, bar question 8, which is omitted due to its focus on injection usage (Humenuik et al., 2012; Humenuik et al., 2008). Alcohol ASSIST scores vary from 0 to 39 and are classified as low, moderate, or high risk. Low risk is indicated by a score of 0-10. Scores 11-26 suggest a moderate risk. Scores of 27-39 indicate a high risk. According to the score, appropriate interventions are suggested, which include no treatment, a brief intervention, or a referral to a specialist service for assessment and treatment.

## **Tolerance and Withdrawal**

People with AUD also experience physical and physiological symptoms of tolerance and withdrawal. The physiological component, criteria 10-11, within the DSM-5 specifically pertains to tolerance and withdrawal (Elvig et al., 2021). Tolerance is built through prolonged, repeated use and the development of a physical dependency (Elvig et al., 2021; Jesse et al., 2017; Koob & Colrain, 2020). Building a tolerance changes the impact that alcohol has on an individual, lessening the effect and requiring increased amounts to achieve the desired effect (Elvig et al., 2021). Having a greater resistance to the effects of alcohol can increase the severity and progression of AUD.

Withdrawal is a syndrome that affects individuals with AUD when the concentration of alcohol in their system begins to decline (Koob, 2006). The declining substance levels lead to irresistible desires or impulses to consume alcohol, also known as a craving. Individuals suffer from physical and psychological withdrawal symptoms when these cravings are not fulfilled. Up to 50% of AUD patients experience withdrawal symptoms (Barata et al., 2017;

Mirijello et al., 2015). Alcohol withdrawal is a potentially fatal syndrome, increasingly severe in cases of extreme AUD. Therefore, this current study will primarily focus on mild to moderate AUD cases, negating the need for medical professionals or further training. Symptoms of withdrawal vary in severity, starting with mild symptoms such as tremors, headaches, irritability, vomiting, stress, anxiety, insomnia, hyperactivity, and a loss of motivation for natural rewards. Severe withdrawal symptoms include hallucinations, seizures, delirium, comatose, and death (Jesse et al., 2017; Koob, 2006; Mirijello et al., 2015). 10% of patients who show withdrawal symptoms develop withdrawal seizures. Alcohol withdrawal syndrome symptoms can appear 6 hours after an abrupt cessation of alcohol consumption. Mild to moderate withdrawal symptoms can be self-managed by patients and will typically last 2-7 days. Severe cases may last up to 2 weeks (Jesse et al., 2017; Mirijello et al., 2015).

### **Co-Morbidities**

AUD is associated with co-occurring conditions and other psychiatric illnesses. Excessive alcohol consumption is associated with an increased risk of illness and death and has an evident causal relationship with over 60 other medical conditions, most of which are damaging (Carvalho et al., 2019; Grant et al., 2015; Rehm et al., 2003; Room et al., 2005). Consumers with mild to moderate AUD are at an increased risk of cardiovascular disease, diabetes, cancer, and social harm (Babor et al., 1992; Carvalho et al., 2019; Gaziano et al., 2000; Rehm, 2011). Sleep disturbances, insomnia, reduction of sleep onset, and increased feelings of wakefulness during the night directly result from AUD brought on by alcohol's ability to affect the neuronal system responsible for sleep regulation (Koob & Colrain, 2020). Other common co-morbidities include bipolar disease, substance use disorder, posttraumatic stress disorder, depression, major depressive disorder, borderline personality disorder, anxiety, and suicide (Anker & Kushner, 2019; Berenz & Coffey, 2012; Boden & Fergusson, 2011;

Carra et al., 2014; Grant et al., 2015; McCauley et al., 2012; Rehm et al., 2005; Rich & Martin, 2014; Yuodelis-Flores & Ries, 2015). Individuals who suffer from co-morbidities of AUD and bipolar disease, substance abuse, posttraumatic stress disorder, or depression are more likely to attempt to commit suicide (Anker & Kushner, 2019; Berenz & Coffey, 2012; Carra et al., 2014; McCauley et al., 2012; Rich & Martin, 2014; Yuodelis-Flores & Ries, 2015). AUD is prevalent among individuals with nicotine dependence, with co-use rates higher among young adult men and rates slowly declining with age (Falk et al., 2006). Rates of smoking and tobacco use increased with the rate of alcohol consumption and with the presence of AUD (Falk et al., 2006).

### **Prevalence of AUD**

The rate of AUD varies across countries and measurement approaches, with an average of 5.1% of the world's adult population (Glantz et al., 2020). AUD is one of the most widespread global mental health disorders (Grant et al., 2015). The World Health Organization and various researchers have estimated that globally, 5.1% or 283 million people aged above 15 years live with AUD (Glantz et al., 2020; World-Health-Organization, 2021). With an estimated 23 million AUD sufferers across the European Union (Rehm et al., 2015) and a further 33 million across the United States (Grant et al., 2017; Grant et al., 2015). Estimates suggest that up to 20% of adults who present in American emergency rooms are sufferers of AUD (Mirijello et al., 2015; Whiteman et al., 2000).

AUD is a socioeconomic disease, most common in high and upper-middle-income countries and communities (Carvalho et al., 2019). Individuals from deprived neighbourhoods are 1.3 times more likely to engage in hazardous drinking than those from affluent neighbourhoods (Ministry-of-Health, 2021). Since the COVID-19 pandemic, research shows that there may be an increase in alcohol consumption amongst some

populations (OECD, 2021; World-Health-Organization, 2021). AUD is more prevalent among men, affecting 237 million men and 46 million women globally (Glantz et al., 2020; Ministry-of-Health, 2021; Rehm et al., 2005; World-Health-Organization, 2021). According to results from the 2020/2021 New Zealand Health Survey, Māori men are 1.6 times more likely to engage in and report hazardous drinking than non-Māori men. The same trend is evident among Māori women, who are 1.9 times more likely to report hazardous drinking than non-Māori women. Similarly, Pacific men are 1.4 times more likely to engage in hazardous drinking than non-Pacific men, and disabled adults are 1.2 times more likely to engage in hazardous drinking than non-disabled individuals. (Ministry-of-Health, 2021).

### **Recovery and Relapse**

AUD is a relapsing-remitting condition, but people can recover through professional or peer help or self-management. Relapse can be defined as deterioration following a period of improvement, or it can be seen as the absence of abstinence (Sliedrecht et al., 2019). Several identifiable factors pertain to relapse, such as psychiatric co-morbidity, addiction severity, current health status, social support, demographics, and more (Sliedrecht et al., 2019).

A defining characteristic of AUD is an underlying change within the brain's circuitry that may persist well beyond detoxification, especially among users with severe disorders. The changes made within the neuronal system are exhibited in intense cravings and repeated relapse (American-Psychiatric-Association, 2013). Sliedrecht and colleagues (2019) were able to illustrate another relapse determinant, age. Individuals who developed AUD later in life had a higher probability of remission, whereas an earlier onset of AUD was associated with relapse. Females had a better chance of sustained abstinence than males, who were associated with a worse prognosis. Individuals with current health issues were at significant

risk of relapse compared to those who were considered healthy. Psychiatric co-morbidities such as ADHD, anxiety or depression were significantly related to an increased risk of relapse.

AUD severity and social factors were the most highly influential determinants of relapse. Individuals with severe AUD and symptoms were more likely to relapse, characterised by a chronic relapsing course. Similarly, individuals who lack a quality support system, such as family and friends, are also likely to fall into a chronic relapsing course. Based on the results from a systematic review conducted by Sliedrecht and colleagues (2019), individuals with a positive and functioning social support system, employment, education, and greater socioeconomic status are consistently associated with reduced relapse risk.

For some individuals, relapse can become a recurring, chronic condition involving numerous treatment cycles, abstinence, and relapse (Sliedrecht et al., 2019). Based on 84 studies, Hunt et al. (1971) determined that relapse rate for alcohol, nicotine, and heroin, follow a particular pattern. Individuals who relapsed typically did so within the first three months of treatment, and less than 30% remained abstinent one year following treatment. Up to 50% of individuals with AUD achieve remission after several years of follow-up (Sliedrecht et al., 2019).

## **Recommended Treatment Approaches**

Recommended evidence-based treatments for AUD include cognitive and behavioural treatments such as community reinforcement, guided self-change, mutual support groups, and pharmacological interventions (Antonelli et al., 2018; Carvalho et al., 2019; Ray et al., 2020). Behavioural treatments include cognitive-behavioural therapy (CBT), motivational enhancement therapy (MET), marital and family counselling, community reinforcement, and brief interventions. Behavioural treatments encourage individuals to learn and identify

cravings, develop skills to reduce or stop binge drinking, build strong support networks, set attainable goals, and learn coping and avoiding strategies. Behavioural treatments and counselling teach individuals practical skills that promote alcohol-distancing behaviours (National-Institute-of-Health, 2021b).

CBTs frequently serve as the first-line treatment for SUDs such as AUD. CBT focuses on identifying cues that lead to drinking and managing these cues and stress. CBT works to change thought processes that may lead to a relapse and promotes the development of necessary skills that allow individuals to cope with situations that may trigger a relapse of drinking.

Agras and Bohon (2021) compared the efficacy of CBT as a treatment for eating disorders to other psychotherapy approaches in their 2021 review. Their analysis revealed that CBT regularly exhibited higher participant retention rates and produced significant benefits when compared to inactive psychotherapies like no treatment or therapy as usual. Specifically, CBT demonstrated a substantial effect in reducing binge eating and achieving abstinence. Self-help treatments rooted in CBT also showed improvement, although the effects were more modest. However, comparisons made with other therapeutic modalities produced conflicting results, such as CBT showing greater efficiency and cost-effectiveness than psychodynamic treatments in some studies but demonstrating equivalent efficacy in others. Additionally, when comparing CBT to interpersonal psychotherapy, CBT initially proved superior for bulimia nervosa but not during follow-up, and both therapies performed similarly for binge eating disorder. Family-based treatments were compared to CBTs for the treatment of bulimia nervosa, again, yielding mixed results, with some studies suggesting that in-depth CBTs are less effective than family-based treatments, while others indicating guided (CBT-based) self-help is equivalent. While this review displayed benefits of CBT, the discrepancies in results may suggest that the therapist's expertise and experience in applying

said therapies plays a significant role in their overall efficacy. It should also be noted that this review often utilised data from trials with less-than-optimal sample sizes and that lacked direct comparisons (Agras & Bohon, 2021).

Analysis of 30 different randomised control trials by Ray and colleagues (2020) assessed the effectiveness of combining CBT with medication in the treatment of SUD and AUD. In 9 of the 30 trials, the combined CBT and pharmaceutical approach resulted in benefits above conventional treatment, with effect sizes ranging from 0.18 to 0.28. However, the combined CBT and pharmaceutical approach did not outperform other evidence-based modalities such as MET when they were also offered in combination with medication. Nevertheless, this review highlighted the importance of integrating pharmacological treatment with CBT or MET to treat SUD and AUD, rather than standard clinical management or generic counselling services (Ray et al., 2020).

MET focuses on creating and strengthening the motivation to change drinking behaviours. MET identifies the pros and cons of help-seeking, aids in planning, builds confidence and develops skills for individuals to use throughout their lives to stick to their plans. MET is often described as an extension or enhancement to Motivational Interviewing (MI), as it incorporates the element of problem feedback, and may offer the advantage of being easier to learn as it is more focused (Lundahl et al., 2010).

Longabaugh et al. (2009) conducted a double-blind study to investigate the effect of psychosocial interventions on the duration of naltrexone treatment. While naltrexone paired with CBT outperformed naltrexone and MET in several outcomes, including fewer relapses and longer intervals between relapses, MET and naltrexone remain viable treatment options. Furthermore, Lundahl et al. (2010) conducted a meta-analysis on MI and found that MET provided equal treatment effects to CBT and the 12-step programme, and did so in a substantially shorter time-frame. Coriale et al. (2019) reviewed and compared CBT and MET



treatments, concluding that both treatments are effective at reducing alcohol consumption and promoting abstinence. However, CBT had significantly higher levels of participant retention compared to MET.

Marital and family counselling incorporates family members and loved ones in the treatment process, which can be an essential step for those who need to repair broken relationships or need familial support throughout their journey. In an extensive review of 38 studies, O'Farrell and Fals-Stewart (2003) concluded that when an individual is unwilling to start treatment, marital and family counselling is unmatched in helping the family cope, and motivating the individual to receive treatment. Furthermore, marital and family counselling was discussed as being significantly more effective at increasing abstinence and improving relationship functioning compared to those who receive individualised treatments (National-Institute-of-Health, 2021b; O'Farrell & Clements, 2012; O'Farrell & Fals-Stewart, 2003).

Community reinforcement and Family Training (CRAFT) is an intervention developed for the concerned significant others of AUD sufferers (Hellum et al., 2022; Hellum et al., 2019; Lindner et al., 2018). CRAFT empowers the significant others to change the environment (to reduce stimuli), reinforce alcohol-distancing behaviours, promote help-seeking, and improve their mental health. A review article published by Roozen and team (Roozen et al., 2010) compared CRAFT interventions with traditional AUD interventions such as Alcoholics Anonymous and Narcotics Anonymous, finding that CRAFT was more successful at engaging participants, possibly alluding to the importance of social connections.

Brief interventions provide participants with information regarding their drinking patterns, potential risks, and personalised feedback. These interventions aid in goal setting and plan formation and provide strategies to create plans and stick to them for long-lasting change. Brief interventions are typically shorter than long-term interventions such as in-

patient care, and are mainly employed for mild to moderate AUD sufferers (Mattoo et al., 2018).

Pharmacological interventions can be highly effective for individuals, especially as a way to deal with intense cravings. Currently, there is a list of medications (disulfiram, acamprosate, naltrexone, nalmefene, sodium oxybate, and baclofen) that are approved in different countries for use during AUD treatment (Addolorato et al., 2007; Antonelli et al., 2018; Burnette et al., 2022; Guerzoni et al., 2018; Mason & Heyser, 2010; Palpacuer et al., 2018; Ralevski et al., 2014; Tetrault et al., 2012). Most of these medications work by interacting with various neuronal systems in the brain, relieving cravings and reducing withdrawal (Addolorato et al., 2007; Ralevski et al., 2014).

Disulfiram has been used clinically for over 60 years and was the first medication approved by the FDA for AUD treatment. Disulfiram inhibits the metabolism of alcohol by acting as an aldehyde dehydrogenase inhibitor. This leads to an increase of acetaldehyde, a toxic byproduct of alcohol metabolism, within the body. Increased acetaldehyde toxicity leads to nausea, vomiting, and sweating, effectively creating an aversive response to alcohol consumption. However, due to these unpleasant effects, disulfiram is associated with relatively low adherence rates among patients. Additionally, disulfiram may influence dopamine systems, by reducing serum dopamine beta hydroxylase (DBH), which is responsible for withdrawal symptoms (Burnette et al., 2022; Ralevski et al., 2014).

Acamprosate is believed to function as a partial co-agonist of the N-methyl-d-aspartic acid (NMDA) receptors within the glutamatergic system, thereby alleviating neuronal hyperexcitability, which typically occurs during acute withdrawal and prolonged abstinence from alcohol. A systematic review and meta-analysis of 27 randomized controlled trials involving 7519 participants conducted by Jonas et al. (2014) determined that acamprosate

treatment reduces the risk of patients returning to any drinking, however, it does not always decrease rates of binge drinking (Jonas et al., 2014; Ralevski et al., 2014).

On the other hand, in a 2014 study, Jonas and colleagues discovered that naltrexone successfully reduced the likelihood of people returning to drinking and binge drinking. Naltrexone reduces the rewarding impact of alcohol consumption by lowering alcohol-induced opioidergic activity in the reward system, resulting in less alcohol consumption. This conclusion was based on a comprehensive meta-analysis of 53 randomized controlled trials (Jonas et al., 2014).

Pharmacological treatments are underutilised by physicians as a treatment option for AUD. This may be due to a lack of confidence surrounding efficacy and a lack of confidence in side-effect management. (Antonelli et al., 2018; Ralevski et al., 2014). Approved AUD medications yield superior results when utilised alongside other treatments, such as counselling and therapy, compared to isolated treatment involving only medication (Jonas et al., 2014; Ralevski et al., 2014).

People can also alter the course of their AUD through self-management and mutual support groups. The most utilised AUD treatments are mutual support groups such as Alcoholics Anonymous (AA), Narcotics Anonymous, 12-Step Programmes, and SMART Recovery (Kelly et al., 2020; Orchowski & Johnson, 2012). Comparing both group and individual treatment options, there was no significant difference in substance abstinence or treatment efficacy (Kelly et al., 2020; Orchowski & Johnson, 2012). However, group settings promote inclusion, engagement, and acceptance, eliminate feelings of isolation and shame, and deter risky behaviour.

Group treatments are also more practical and favoured due to the reduced financial strain on health systems. AA is run in over 180 countries worldwide (*Alcoholics Anonymous*, 2022). Due to the high prevalence of AUD, AA services are widespread and freely available

(*Alcoholics Anonymous*, 2022; Kelly et al., 2020). Meetings typically run for 60 to 90 minutes and are peer-led, mutual help groups held in community locations such as local schools, halls, or churches. These meetings help individuals practice the principles of the 12-step programme, which are designed to increase well-being, improve interpersonal skills, enhance one's ability to cope with stress, adapt to abstinence, and embrace a new sober lifestyle (*Alcoholics Anonymous*, 2022; Kelly et al., 2020). 12-step programmes, like AA, typically view AUD as not only a medical but a spiritual disease. Overcoming AUD involves resigning control to a higher power (Beck et al., 2017; Donovan et al., 2013). Incompatibility between personal beliefs and the typical 12-step philosophy may lead to premature departure and low engagement.

An alternative to the traditional 12-step programmes is Self-Management and Recovery Training (SMART Recovery), which emerged due to the lack of diversity among mutual addiction recovery support programmes (Beck et al., 2017; Horvath & Yeterian, 2012; Kelly et al., 2015; Kelly et al., 2017). SMART Recovery focuses on self-empowerment and self-efficacy and employs CBT and Motivational Interviewing techniques to promote addiction recovery (Beck et al., 2017; Raftery et al., 2019). SMART Recovery differs from traditional programmes by lifting and empowering individuals, unlike the spiritual, powerless 12-step approach. SMART Recovery is offered online and face-to-face (Beck et al., 2017; Horvath & Yeterian, 2012; Kelly et al., 2015; Kelly et al., 2017), and in contrast to the 12-step approach, SMART Recovery offers support for several addictive behaviours such as gambling, gaming, and spending (Horvath & Yeterian, 2012).

### ***Screening, Brief Intervention, and Referral to Treatment (SBIRT)***

Over recent years, brief interventions involving screening, brief treatment, and referral have also been found to be effective. Screening, brief intervention, and referral to

treatment (SBIRT) is a model that encourages opportunistic screening for both mental health and substance use as a routine service in healthcare (Barata et al., 2017; Madras et al., 2009). Because the approach is opportunistic, it is often implemented in non-AOD settings like emergency departments (Barata et al., 2017; Bernstein et al., 2007). SBIRT can also be delivered in primary health care settings, mental health clinics, addiction services, and schools, decreasing costs and maximising resource utilisation.

There are many recommendations for implementing SBIRT for certain patients who are seen in the emergency departments, including patients who present with trauma. However, there is a lack of guidance on the broader use of this ED-based AUD intervention. The process begins with screening for AUD. Standard screening tools used by ED doctors and other healthcare professionals include the AUDIT/AUDIT-C, National Institute of Alcohol Abuse and Alcoholism (NIAAA) Guide, the Paddington Alcohol Test (PAT), and the Cutting Down, Annoyance by Criticism, Guilty Feeling, Eye-openers (CAGE) questionnaire (Barata et al., 2017; Mitchell et al., 2013). In some instances, readiness to change is measured using the Readiness to Change Contemplation Ladder, adapted for use in ED settings. This tool measures the individual's readiness to change through their responses to each category, with scores ranging from 0 (no thought of changing) to 10 (taking action to change, actively cutting down) (Barata et al., 2017). Once readiness to change is evaluated, appropriate interventions can be implemented. Individuals with an increased readiness to change show the most benefits following brief interventions (Barata et al., 2017). Once patients are screened and a brief intervention has been offered, patients are then referred for outpatient follow-up with an alcohol health worker (Barata et al., 2017; Bernstein et al., 2007). An alcohol health worker typically sees patients for 30 minutes to assess and discuss their current or previous drinking (Humenuik et al., 2012).

The most frequently employed interventions utilised in a SBIRT approaches are brief CBTs, motivational interviewing, or a combination of both. Brief interventions' efficacy can be increased by incorporating brief motivational interviewing (Agras & Bohon, 2021; Barata et al., 2017; Longabaugh et al., 2009; Lundahl et al., 2010). ED-based brief interventions are designed to be performed by staff, including nurses, physicians, medical students, social workers, psychologists, and community outreach workers or health advocates (Barata et al., 2017; Bernstein et al., 2007). These ED-based brief interventions typically utilise motivational interviewing principles, including asking for permission to discuss alcohol use, providing feedback on current drinking and consequences of current drinking, assessing readiness to change, providing options to help with behaviour changes, and assisting in obtaining appointments or placements (Barata et al., 2017; Bernstein et al., 2007). ED-based brief interventions vary from 15 to 20-minute sessions conducted in the primary healthcare setting to multiple 60-minute sessions conducted elsewhere in the community (Mitchell et al., 2013).

### ***Use of Available Treatments***

Unfortunately, numerous studies show that an insignificant proportion of individuals suffering with addiction, and approximately 10% of New Zealand AUD sufferers, recall seeking treatment from professional services (Bijker et al., 2022; Foulds et al., 2012; Mekonen et al., 2021; Ministry-of-Health; Wallhed Finn et al., 2023; Wells et al., 2006). Stigma, shame, a fear of judgement, a lack of awareness, or financial and time insecurities may all be primary causes of low treatment seeking rates (Evans & Delfabbro, 2005; Foulds et al., 2012; Pulford et al., 2009). Furthermore, Rodda, Dowling, and Lubman (2018) suggest that some people may assume that they can overcome addiction on their own, without professional assistance.

Notwithstanding the damage and pervasiveness of alcohol use disorders, they remain one of the least treated mental health disorders, with the lowest prevalence of available treatments (Carvalho et al., 2019). Individuals may avoid treatment due to fear and stigma, inability to access the exemplary service or treatment and a belief that therapy is too costly or difficult to attain. 16.3 million adults, 6.8% of the United States population, meet the criteria for AUD (Barata et al., 2017), whereas only 8.9% of that group received treatment at an appropriate facility. Globally, approximately 20% of people with severe AUD seek treatment, but very few individuals seek treatment for mild AUD (Grant et al., 2015; Wallhed Finn et al., 2023). Efforts to address the problem of help-seeking and intervention accessibility caused by stigma and various other barriers, include the delivery of internet-delivered brief interventions (Agras & Bohon, 2021; Hadjistavropoulos et al., 2020; Riper et al., 2018).

### ***Internet-Delivered Interventions for AUD***

Internet-delivered treatment offers easy and convenient access and addresses some of these barriers. The importance and popularity of digitally delivered mental health interventions are growing, especially since the arrival of COVID-19. Internet/digitally delivered interventions provide numerous advantages, including improved scope, clinical efficacy, and cost-effectiveness for both the health system and the user. Taylor et al. (2017) published a Cochrane review of 67 smoking cessation randomised control trials and concluded that internet-delivered interventions are extremely cost efficient, with one study estimating that the cost of running an internet-delivered intervention with 8000 participants is equivalent to operating a small smoking clinic, treating 50 smokers per month.

Internet-delivered interventions can target a broad audience and reach those who may not have access to in-person options (McCabe et al., 2006; Riper et al., 2008). For example, individuals living in rural areas who lack transportation or access to face-to-face treatment

can easily access internet-delivered programmes. Internet-delivered options are also increasingly popular for single-parent families and families lacking childcare or financial security (Andersson & Titov, 2014; Hadjistavropoulos et al., 2020; McCabe et al., 2006). Internet-delivered interventions are also an attractive option for AUD sufferers with co-morbidities such as depression, anxiety and other mental or physical health conditions which may be challenging to overcome and prevent them from seeking face-to-face treatments (Hadjistavropoulos et al., 2020). This delivery model addresses treatment-related stigma, cost, convenience and 24/7 availability and may be more attractive than in-person methods, especially for young people (Chambers et al., 2005; Harris & Edlund, 2005; Kiluk et al., 2019; Riper et al., 2008). Internet-delivered treatments also increase the likelihood of truth-telling as there is a reduced stigma and added comfort as treatment is held within their homes or safe places (Riper et al., 2008). Internet-delivered interventions are highly scalable (McCabe et al., 2006; Riper et al., 2008) and can be personalised (Gainsbury & Blaszczynski, 2011; Geisner et al., 2015; Vangrunderbeek et al., 2022). These interventions can deliver personalised treatment, store user preferences, and provide personalised feedback on screening. Multiple reviews indicate that internet-delivered interventions effectively reduce the amount of alcohol consumed and alcohol-related problems (Gainsbury & Blaszczynski, 2011; Riper et al., 2008; Vangrunderbeek et al., 2022) due to the delivery of a wide array of evidence-based content and treatments (Andersson & Titov, 2014).

Presently, there is a wide array of available internet-delivered interventions for AUD. Internet-delivered CBT (ICBT) is an internet-delivered form of CBT that provides users with learning material through lessons, modules, and usable strategies (Hadjistavropoulos et al., 2020; Kiluk et al., 2019). CBT focussed internet-delivered interventions increased problem-solving abilities within participants due to the consistent behavioural substitution activities ("If x happens, I will do y", "I will do x when... and where... how... and with whom...")



(Kaner et al., 2017; Michie et al., 2013). ICBT can also integrate relapse prevention by supporting the person to identify risk situations and develop effective action and coping strategies for dealing with these risks. This approach can also aim to prepare individuals for future relapses without stigmatising the process.

ICBT can be both guided and self-directed, both with their advantages and disadvantages. Riper et al. (2008) have shown that both guided and unguided online interventions can successfully reduce alcohol consumption among AUD sufferers. Guided ICBT typically involves a therapist or a coach who guides individuals through the programme, providing feedback, advice, and reinforcement (Hadjistavropoulos et al., 2020). Guided online interventions provide added social support from therapists or coaches. In some cases, guided interventions may only be brief, delivered as motivational emails or text reminders (Cunningham et al., 2010; Hadjistavropoulos et al., 2020; Kiluk et al., 2019). Unguided online interventions are now used on a larger scale than conventional brief alcohol interventions and are clinically effective in reducing mean weekly alcohol intake compared to control groups: 15 unit decrease in mean weekly alcohol consumption compared to 2.9 units in the control group (95% CI 5.86-18.10; P 0.001), equating to a medium standardised effect of  $d = 0.40$  (Riper et al., 2008). Baumeister et al. (2014) and Spek et al. (2007) could not provide conclusive evidence of which type was more successful. However, they were able to demonstrate that guided ICBT is more helpful for individuals who also suffer from anxiety and depression (Baumeister et al., 2014; Spek et al., 2007).

Other types of internet-delivered interventions for AUD commonly employ a brief intervention framework following a FRAMES structure. This involves giving *feedback* on results, activities, and goals, influencing a *Responsibility* for change, offering *advice*, providing a *Menu* of options and strategies, having an *Empathetic* approach, and instilling *Self-Efficacy* (Kaner et al., 2017). Brief intervention components are made up of behavioural

change techniques (BCTs), which are “an observable, replicable, and irreducible component of an intervention designed to alter or redirect causal processes that regulate behaviour” (Kaner et al., 2017; Michie et al., 2013; Michie et al., 2015).

A Cochrane review conducted by Kaner et al. (2017) concluded that internet-delivered alcohol interventions using BCTs were superior compared to minimal or no interventions. However, these results were tested among individuals with severe AUD. Internet-delivered interventions resulted in an alcohol reduction of approximately three standard drinks per week, and there was minimal evidence that proved a significant difference in the efficacy of face-to-face BCT interventions compared to internet delivered (Kaner et al., 2017).

### ***Critique of Available Internet-Delivered Interventions***

Internet-delivered treatments for AUD are generally effective, but there are some concerns about attrition rates and low engagement. Internet interventions are low effort for people to start due to increased convenience and accessibility. However, ease of access is closely related to adherence to the study protocol and high rates of study attrition (Cunningham et al., 2010; Eysenbach, 2005; Mohr et al., 2011; Vangrunderbeek et al., 2022). Participant loss to follow-up ranges from 20% to 70% (Gainsbury & Blaszczynski, 2011; Riper et al., 2008; Vangrunderbeek et al., 2022), making it difficult to assess treatment efficacy accurately. Within the field of alcohol, in particular, the retention rate for internet-delivered interventions can be as low as 20% (Crane et al., 2018; Cunningham et al., 2010; Gainsbury & Blaszczynski, 2011; Rodda & Lubman, 2014; Vangrunderbeek et al., 2022). Another critical challenge for an internet-delivered intervention is participant engagement (Eysenbach, 2005; Mohr et al., 2011). Low retention rates and poor engagement are often

coupled with low readiness or commitment. One way to address this issue is with the inclusion of social support.

Service providers, such as therapists, practitioners, or people with lived experience, are integral to many interventions. They add peer support, increase accountability, and aid individuals on their journey via shared experiences, medical knowledge, or simply encouragement. Many internet-delivered interventions lack this element. Traditional internet-delivered interventions also adopt a "one size fits all" approach, which is not the case and can be significantly limiting. In these cases, it is appropriate to have social support, such as professionals who can provide encouragement or develop solutions when the intervention needs adapting. Therefore, blending digitally delivered interventions with social support may be essential to increasing participant engagement and retention.

## **Methods to Improve Engagement and Retention**

A key challenge for an online intervention design and delivery is participant engagement. Multiple methods have been examined that might foster increased engagement with internet-delivered interventions. Researchers recommend adding personal interactions to internet-delivered interventions to address engagement and retention issues, including social support, psychotherapy, coaching, or personalised feedback (Cavanagh, 2010; Marks & Cavanagh, 2009).

Incorporating intervention coach-delivered support into an internet-delivered intervention will require some form of peer orientation or training. Training ensures that each coach is familiar with the intervention, components, and ways the intervention and associated skills may be relevant to a participant's problems, clarifying expectations about potential outcomes, providing technical support, and helping with planning or scheduling interactions with the intervention protocol (Cavanagh, 2010; Marks & Cavanagh, 2009). Social support

increases the efficacy of alcohol reduction interventions due to improved treatment engagement, a sense of accountability and increased self-efficacy (Guraya & Abdalla, 2020; Hernandez Colinir et al., 2022; Mohr et al., 2011; Possemato et al., 2019; Satinsky et al., 2021; Tracy & Wallace, 2016). There is limitless research investigating social support's influence on retention rates for internet interventions. Therefore, introducing this vital support aspect to AUD internet intervention will likely increase engagement and reduce attrition, aiding recovery (Mohr et al., 2011).

### ***'The Fresh Start Effect.'***

'The fresh start effect' or 'New Year's effect' is a naturally occurring phenomenon in which individuals ubiquitously share increased motivation and drive to engage in aspirational behaviours. 'The fresh start effect', a term coined by Dai, Milkman, and Riis (Dai et al., 2014), describes the common phenomenon of embarking on a new journey, challenge, or behavioural change on a temporal milestone. Temporal milestones are tentative starting dates for new and significant life changes, such as starting a gym membership at the beginning of the week, on your birthday, or, most popular, New Year's Day (Dai et al., 2014; Oscarsson et al., 2020).

Approximately one in two North American adults embark on the popular New Year's tradition of setting a resolution (Norcross & Vangarelli, 1988). New Year's resolutions are even more prevalent in New Zealand, with four out of five (83%) adults setting resolutions for 2022 (Scoop-Media, 2022). The most common resolution trends tend to be centred around health, particularly eating healthier, losing weight, or cutting back on smoking and alcohol (Norcross & Vangarelli, 1988; Scoop-Media, 2022). Studies conducted on the longevity of New Year's resolutions support the notion that people are not particularly great at sticking to or following through (Dickson et al., 2021; Norcross & Vangarelli, 1988). For example,

Norcross and Vangarelli (1988) report that, on average, 40% of resolution makers fail by February, 60% fail by June, and approximately 81% report failure after two years.

Self-regulation, willpower, and flexibility determine more remarkable goal outcomes and well-being (Dickson et al., 2021). However, lacking personal and goal autonomy can hinder progression, ultimately leading to failure (Dickson et al., 2021; Koestner, 2008). Autonomy concerns whether an individual's goal reflects their intrinsic values, as opposed to extrinsic ones, adopted by external forces such as social or familial expectations. External expectations follow the "I should do" versus internal values, which may follow an "I want" structure. Koestner (2008) emphasises that autonomously aligned goals lead to increased goal succession, with individuals exerting more effort and experiencing less conflict whilst changing their behaviour to achieve them.

### ***Combining 'The Fresh Start Effect' with Social Support***

In theory, combining the naturally increased desire to make a lasting change in the New Year with a brief internet-delivered intervention that uses social support as goal coaches is likely to result in high study engagement, retention, and success levels. Oscarsson et al. (2020) conducted a wide-scale longitudinal New Year's resolution study that investigated the most common types of resolutions set and the impact on the resolution success rate among groups with varying degrees of support. Their participants were randomised into three groups: (i) no support, (ii) some support, and (iii) extended support. The two support groups were given access to goal-setting information and coping exercises and were frequently contacted via email to maintain momentum. Oscarsson et al. (2020) showed that participants receiving support fared better than those without support, concluding that additional information, exercises, and tools to improve goal setting and plan creation directly increased the likelihood of success.

## **The Rationale for the Current Study**

These issues suggest a need to investigate the potential for social support to have a more significant role in delivering internet-delivered interventions. This study is worthwhile due to the high economic burden of global alcohol-related deaths, injuries, and non-communicable diseases (Grant et al., 2015; Parry et al., 2011; Thavorncharoensap et al., 2009). In New Zealand alone, approximately 20% of New Zealanders aged 18 and above are impacted by alcohol (Ministry-of-Health). Individuals with low severity AUD rarely seek treatment from face-to-face services, of which there are few. It is suggested that individuals with mild to moderate AUD are recommended to receive a brief intervention based on the risk of developing dependence (Room et al., 2005). Over recent years, brief interventions involving screening, brief treatment, and referral have also been found to be effective. Unfortunately, due to various barriers, only 10% of New Zealanders seek help from professional services. Internet-delivered treatment offers easy and convenient access and addresses some of these barriers. Internet-delivered treatments for AUD are effective but limited due to high attrition rates. Multiple methods have been examined that might foster increased engagement with internet-delivered interventions. Social support is essential to AUD recovery and can be integrated with internet-delivered interventions.

## **Research Aims**

This study aims to investigate the impact of a brief internet intervention grounded in lived experience on alcohol consumption and related problem severity in individuals with mild to moderate alcohol use disorder.

The second aim of this study is to assess the feasibility of social support provided by goal coaches in terms of participant engagement with the intervention and study retention rates.

## **Chapter 2. Methods**

### **Research Design**

This study employs a pre-post exploratory design to achieve its dual objectives.

Firstly, it will examine the impact of a brief, self-directed, internet-delivered intervention, known as the Alcohol Habit Hacker PALS (HHPALS), on alcohol reduction among individuals with mild to moderate AUD. HHPALS is part of a series of projects designed for self-help in addictive behaviours and includes components such as goal setting, action planning, coping planning, and self-monitoring. Previous research has demonstrated its efficacy in reducing various addictive behaviours, including gambling, gaming, pornography, and sugar consumption (Park et al., 2020; Rodda et al., 2020; Rodda, Booth, et al., 2018; Rodda et al., 2017; Rodda, Hing, et al., 2018). This study extends previous work by exploring engagement methods, such as hosting the challenge as a New Year's Resolution and incorporating goal coaches.

Secondly, this study will evaluate intervention engagement, retention, and overall success. These aspects are highly associated with enhanced outcomes. Therefore, to achieve this, the study will investigate the feasibility of incorporating various methods, including social support from goal coaches and leveraging concepts such as intrinsic motivation linked to the 'Fresh Start Effect' by hosting the intervention as a New Year's Resolution challenge.

### **Participants & Recruitment**

#### ***Sampling and Recruitment Method***

In order to capitalise on 'The Fresh Start Effect' and host the challenge in the New Year, the recruitment phase for this study took place in November and December 2022, with the New Year's Resolution challenge beginning on January 1st, 2023. The two-month-long

recruitment period allowed participants to lock in their baseline data, set drinking goals, and develop a plan before embarking on the challenge. Because people naturally have more motivation and desire at this time of year and other significant temporal milestones, this study will be able to provide participants with the resources, support, and guidance they need to implement their plans better, stick to their goals, and achieve long-term changes.

The target group for this study were middle-aged adults interested in reducing their alcohol intake. The study's target audience was determined by cross-examining demographic data from similar solo or group challenges, known as temporary abstinence initiatives (TAIs), such as FebFast, Dry July, and Hello Sunday Morning. On examination of these TAIs, it was clear that the majority of FebFast participants were women, roughly aged between 35 to 60 (Goodyer, 2013; Yeomans, 2018).

Using a combination of Facebook advertising and word-of-mouth, 86 participants were recruited for this study. This research was approved by the University of Auckland Human Participants Ethics Committee on 9/12/2021. The Reference Number is 23654 (Appendix E). To obtain ethical approval for this study, ethical considerations were made due to the immense stigma and shame surrounding addiction and help-seeking for addiction recovery.

The goal coaches utilised in this study were existing Change Strategy Project team members. The head goal coach was the primary investigator, the project lead for the Alcohol Habit Hacker PALS website, and the author of this thesis. The other coach was the project lead for the Gaming Habit Hacker website. Both coaches were heavily involved in website and coaching development, therefore eliminating the need to train additional staff in how to use and navigate the website, understanding the underpinning theories of the program, and training in MI techniques.



### ***Eligibility Criteria***

The inclusion criteria for participation in this study were that participants need to (i) be aged 18 or older, (ii) have the desire to reduce their alcohol consumption, and (iii) be willing to complete two online surveys, one at 0 weeks (baseline) and the second at 4 weeks (post-intervention). Exclusion criteria for the study include participants currently receiving professional treatment for alcohol use disorder or if their AUDIT score was above 20, indicating a more severe level of AUD (Grant et al., 2015; Rehm et al., 2016; Rehm et al., 2003). Alcohol withdrawal is a potentially fatal syndrome, increasingly severe in cases of extreme AUD. Therefore, this study will primarily focus on mild to moderate AUD cases, negating the need for medical professionals, researchers, and staff training.

### **Measures**

To address the aims of this study, the measures detailed below were collected and have been grouped as Impact of Brief- Intervention for Alcohol Reduction, and Acceptability and Feasibility of the Change Strategies HHPALS Website and Coaching. Data collection points were at baseline (Day 0) and post-intervention (Day 28 or 4 weeks) using Qualtrics, an online survey platform (<https://www.qualtrics.com/>). To determine the impact of the brief intervention on alcohol reduction, surveys assessed each participant's alcohol consumption and severity, drinking motives, volitional state, and self-efficacy. The table below, Table 1, summarises the study's measures and collection time points.

Table 1: Overview of study measures and time collection points

Measure	Tool	Time Point of Data Collection	
		Baseline (Pre)	4 weeks (Post)
<i>Impact of Brief- Intervention for Alcohol Reduction</i>			
Demographics	Qualtrics Survey	X	-

Alcohol Consumption and Severity	10-Item AUDIT	X	X
Frequency	The Timeline Follow Back	X	X
Drinking Motives	8-Item Situational Confidence Questionnaire	X	X
Volitional State	6-Item Kessler Psychological Distress Scale	X	X
Self-efficacy	7-Item Personal Wellbeing Index	X	X
<i>Acceptability and Feasibility of the HHPALS Website and Coaching</i>			
Usability Ratings	Qualtrics Survey	-	X
Satisfaction Ratings	Qualtrics Survey	-	X
Participant Engagement	Participant Management Sheet	[Throughout Intervention]	

*Note.* HHPALS = Alcohol Habit Hacker PALS. AUDIT = Alcohol Use Disorder Identification Test.

### **Impact of Brief-Intervention for Alcohol Reduction**

Demographical information was collected from each participant to determine patterns among groups suffering from mild to moderate AUD. Information collected includes their birth year, ethnicity, gender, employment status (employed full-time, employed part-time, unemployed looking for full-time work, unemployed looking for part-time work, unemployed not looking for work, or other; requiring a written response in the provided text box), current enrolment status as a student, whether they are a current smoker, and how they heard about this programme (Facebook, word-of-mouth, or other).

Alcohol consumption, harm, dependence, and (an indication of) severity were measured using the 10-Item Alcohol Use Disorder Identification Test (AUDIT) (Saunders et

al., 1993). This screening instrument comprises ten questions, specifically questions 1-3, which measure alcohol consumption, 4-6 drinking behaviour, 7-8 adverse reactions, and 9-10 alcohol-related problems. Each question is scored from 0-4; thus, the total range of possible AUDIT scores is from 0-40. Receiver operating characteristic analysis determined the cut-off point between 8 and 10. However, to keep in line with research conducted by Allen et al. (1997), and to increase sensitivity and specificity, this study will use the lower cut-off point of 8 only. Participants were eligible for this study with AUDIT scores ranging from 0 to 20. Those scoring above 20 would not be considered mild to moderate AUD and, therefore, would not be eligible for this study.

The frequency of alcohol consumption was measured using the Timeline Follow-Back (TLFB) Method, which assesses the frequency and amount of alcohol consumption using a calendar-based system and memory prompts (Sobell & Sobell, 1992). The TLFB provides participants with a calendar and asks each participant to enter their daily drinking details retrospectively. Participant recall was enhanced using the following aids: (i) a visual calendar, (ii) pre-listed key dates or newsworthy events (Christmas, New Year's Eve, Saint Patrick's Day, long weekends, election date), (iii) Standard Drink Conversion tool.

Drinking motives were measured using the Brief 8-Item Situational Confidence Questionnaire (BSCQ), a derivative of the 100-item Situational Confidence Questionnaire (SCQ-100). Both of these assess the participant's motivations for drinking using three factors: social, enhancement, and coping motives, and are assessed on a 4-point Likert scale ranging from never to always. (Breslin et al., 2000). The BSCQ corresponded well to the global score accumulated by the SCQ-100 and has several advantages compared to its longer counterpart. Namely, the fact that participants can quickly complete the BSCQ, which clinicians or researchers can easily administer and interpret, is a massive factor in the tool's success.

The 6-Item Kessler Psychological Distress Scale (K6) measured participants' volitional states and assesses non-specific psychological distress (Kessler et al., 2002; Prochaska et al., 2012). The K6 scale comprises 6 items: depression, nervousness, restlessness, worthlessness, hopelessness, tiredness, and feeling that everything is an effort. Participants were asked to complete the assessment by highlighting options on a 5-point Likert scale, ranging from never to always, and categorised as experiencing mild, moderate, or severe distress based on their K6 score.

Self-efficacy was measured using the 7-Item Personal Wellbeing Index (PWI), comprised of seven main domains: standard of living, personal health, achieving in life, personal relationships, personal safety, community connectedness, and future security (Group, 2013). Each item is assessed on a 10-point Likert scale ranging from no satisfaction to completely satisfied.

### **Acceptability and Feasibility of Website and Coaching**

Usability ratings will be evaluated in the post-intervention survey, measured at 4 weeks. This will assess how easy the site is to use, how it could be improved, and what was done well. This will inform the future of the website and future interventions.

Satisfaction ratings will be evaluated in the post-intervention survey, measured at 4 weeks. This will assess whether the individual was satisfied with the website content and the services offered. We are assessing whether they will *miss* the website and what they will miss the most.

Participant engagement is measured at every point of action that a participant should or may take during the intervention. Every point of interaction will be recorded in the *Participant Management Sheet*, points such as (i) making a goal, (ii) creating a plan, (iii) responding to feedback, and (iv) whether they have made notes on multiple strategies.

Retention rates are measured quantitatively. This study will compare baseline assessment rates to completion rates at the post-intervention assessment.

## **Intervention**

### *Theoretical Underpinnings of HHPALS*

The HHPALS is a 30-day brief self-directed intervention delivered via the Change Strategies Habit Hacker PALS website (<https://alcohol.changestrategies.ac.nz/>) as a part of the Change Strategies Project. The Change Strategies Project, established in 2018 and led by Dr Simone Rodda, focuses on supporting individuals in their journey to change their addictive habits and behaviours through theory-based approaches integrated with lived experience.

Two main theories underpin the HHPALS intervention. Health Action Process Approach (HAPA), developed by Professor Ralph Schwarzer, is a psychological theory of health behaviour change (Schwarzer, 2008). The HAPA model has been designed as a progressive, continuous health model composed of two self-regulatory phases: motivational and volitional phases. The motivational phase, or the goal-setting phase, comprises intention forming for behavioural change, intentions formed through the realisation that behaviours need changing. The HAPA relies heavily on an individual's perception of self-efficacy. The higher one's perceptions of self-efficacy, the more likely one will expect positive outcomes from their actions. This is crucial for the motivational phase of the HAPA model, as both self-efficacy and positive outcome expectancy contribute to forming an intention and, eventually, the implementation of new, healthy behaviours (volitional phase). The volitional or goal-pursuit phase comprises intention implementation using action and coping planning techniques (Gollwitzer, 1999; Schwarzer, 2008; Sniehotta et al., 2005). Individuals with low self-efficacy and greater anticipation of failure will prematurely give up on themselves and

their intentions to change and fail to make it to the second stage of the HAPA model.

HHPALS uses the HAPA to bridge the gap between intention and behaviour by guiding the selection of behaviour change, such as goal setting, action planning, and coping planning.

Self-determination Theory (SDT) was officially established as a psychological theory in the 1980s by Edward Deci and Richard Ryan. All Change Strategies Projects, including HHPALS content, are written and delivered in alignment with this model, meaning that the core values of autonomy, development of competence, and relationships are at the forefront (Deci & Ryan, 2000, 2013; Ryan & Deci, 2000). The SDT proposes that to sustain behaviour change, three essential needs need to be met: autonomy, competence, and relatedness.

Autonomy can be explained as an individual's inherent desire for authority or agency over their actions, contrasted with having external goals enforced on them. Autonomy emphasises the need for individuals to feel in control of their own lives and actions. Competency is the capacity to achieve an outcome by mastering the necessary skills required to achieve it.

Individuals must build their competence, developing skills essential to themselves.

Relatedness is an individual's need for human interaction, connection, and the need to experience care. Individuals need to have a sense of connectedness and belonging (Deci & Ryan, 2008; Deci & Vansteenkiste, 2003). Suppose these three essential needs are met within the context of the intervention. In that case, individuals are more likely to experience superior psychological outcomes and have developed a profound proficiency in their target behaviour (Deci & Ryan, 2008; Deci & Ryan, 2013; Deci & Vansteenkiste, 2003). This will enable the individual to persevere and sustain these new, healthier behaviours long term (Deci & Ryan, 2013).

Behavioural change techniques (BCTs) are the components or active ingredients of interventions that aid in bringing about a sustained behaviour change in HHPALS and other

interventions that aim to elicit behavioural changes in participants. BCTs can be used alone or in combination with other BCTs to promote behaviour change (Michie et al., 2013).

There are 93 clearly defined BCTs grouped by functionality into 16 clusters, specifying the content area of said techniques and the content range of the behavioural change intervention. HHPALS used behavioural change strategies to develop the intervention content and BCTs to deliver the intervention. These BCTs include Social Support, Goal Setting, Action Planning, Coping Planning, and Feedback on Outcomes of Behaviour, described in both Tables 2 and 3 below (Kwasnicka et al., 2016; Michie et al., 2013; Samdal et al., 2017).

Table 2: General descriptions of the different BCTs used in HHPALS

<b>BCT</b>	<b>Description</b>
Social Support	Social support emphasises the importance of friends, family, treatment staff and other trusted individuals to advise, arrange, and occasionally deliver practical help for behaviour performance (Michie et al., 2013). Social support increases adherence to treatment due to accountability, making the treatment more effective and eliciting sustained behaviour change. This technique is mainly practical compared to the others listed below.
Goal Setting	This technique refers to individuals setting well-defined goals for themselves. Park et al. (2020) studied an internet-delivered intervention that prompted participants to record their intended alcohol use and frequency using the TimeLine FollowForward, specifically designed for the project, to use the same system as the TimeLine FollowBack. This calendar system improves the clarity and specificity of goals and aids in goal setting.
Action Planning	Action planning is a technique that allows individuals to specify when, where and how to undertake a specific behaviour and implement their intentions. This evidence-based technique bridges the gap between intention and behaviour. Plans are typically written as "I intend to..." and include parameters such as 'when' and 'where', followed by a sequence of actions, the 'how'. "I intend to reduce my alcohol consumption by leaving the restaurant straight after dinner before everyone goes to a bar." Using the parameters transforms an intention into an action plan, increasing the success rate (Michie et al., 2013; Park et al., 2020; Sniehotta et al., 2005).
Coping Planning	This technique closely relates to action planning, as it is the planning stage to overcome barriers or distractions to your intended behaviour change in advance (Sniehotta et al., 2005). Coping planning statements are typically written in the format "if (x) happens, I will do (y)". This creates a mental

	link between anticipated risk situations and coping responses. Risk situations can endanger the performance of the intended behaviour. Thus, creating a coping plan is highly beneficial to the long-term sustainability of behaviour change.
Feedback on Outcomes of Behaviour	This technique refers to feedback on the behaviour outcome, for example, informing the treatment staff that six standard drinks were consumed over the weekend, following the implementation of the goal of only consuming two standard drinks per week.

Table 3: HHPALS detailed and specific descriptions of BCTs used

<b>BCT</b>	<b>Details for HHPALS</b>
Social Support	Participants receive support on goal setting, action plans and coping plans from their goal coach via the in-website goal/plan-specific messaging feature. The coach does not need to provide counselling and should actively avoid the righting reflex (Levensky et al., 2007). The presence of a goal coach increases the likelihood of treatment adherence due to accountability (Michie et al., 2013).
Goal Setting	Within the HHPALS website, participants will construct their goal for alcohol reduction. During this process, participants will set their intended amount of alcohol consumption and frequency over the next 28 days with the TimeLine FollowForward calendar-based system embedded in the HHPALS website.
Action Planning	HHPALS provides participants with behaviour change strategies and tips for alcohol reduction, which have been drawn from lived experience research, to guide plan development. Participants will develop at least one action plan within the HHPALS website.
Coping Planning	Participants will identify barriers or obstacles to each action plan they have created. Participants will also make backup plans for each action plan. Participants will record barriers and backup plans in the format “if (x) happens, then I will do (y)”.
Feedback on Outcomes of Behaviour	Participants will receive feedback and communication on goal setting, action, and coping plans from their coach (student researcher). The number of feedback sessions depends on the number of plans created and requested feedback. Coaches will deliver feedback in the HHPALS via the in-website goal/plan-specific messaging feature. Feedback aims to strengthen the details of plans and assist participants in building effective and comprehensive plans.

### *HHPALS Website Overview and Development*



An original online Change Strategies Toolbox was developed for problem New Zealand gamblers and their friends or family members, funded by the Ministry of Health, containing an expansive range of strategies for gamblers and their loved ones to implement to limit or reduce gambling. This extensive work was carried out by Rodda, Bagot, et al. (2018) and Rodda, Booth, et al. (2018), who all collated a vast amount of information, from consumer quotes to theory and evidence-based data, into a Change Strategy booklet and online toolbox. Rodda and her team expanded the Change Strategies Project to an array of addictions such as sugar, gaming, internet, pornography, and alcohol (Park et al., 2020; Rodda et al., 2020; Rodda, Booth, et al., 2018). This involved the creation of new Change Strategies booklets. The Change Strategies booklet for alcohol was completed in 2019 and contains 23 strategies to aid in alcohol reduction. The author of this current thesis was not involved in developing any Change Strategies booklets. However, the author did develop the HHPALS Change Strategy website, which took approximately 6 months, from March 2022 to August 2022. The process involved translating the existing Change Strategy booklet into an internet-friendly document, which could be easily transferred to the HHPALS website as required. The HHPALS website is a *daughter site*, cloned from the *mother site* (the original Change Strategies Gambling Toolbox), both of which were initially set up by Koda (website development). Because HHPALS is a clone, no new software was needed to create a domain, the website layout was largely pre-determined, and nothing extravagant could be added or removed. The first iteration of HHPALS was full of the original Change Strategies Gambling Toolbox content. Every module and strategy on the website was changed from the original gambling-related content to HHPALS content. Typically, this meant changes to module titles, colour schemes, descriptions, images and information. In most cases, strategy pages needed to be entirely overridden as they were irrelevant. The internet-friendly Alcohol Change

Strategy booklet was used to create strategy pages on the Koda site, and Canva was used to create relevant and engaging pictures that complemented each strategy page.

The website contains one goal-oriented module, five strategy-specific modules, and 137 different strategy pages across the strategy-specific modules. Each strategy page contains theory-based information combined with lived experience to give participants the most relevant and appropriate information. Canva was used to create images that aligned with particular strategy pages and shared content, increasing the website's aesthetic appeal and engagement. Quotes were displayed in tasteful images, and the same method was used when creating and displaying quotes on the HHPALS website.

Website user testing addressed a few issues: changing the colour scheme on multiple pages. Various colours used were (a) not visually pleasing and (b) needed to align with the content's messages. Colour combinations such as yellow and white were removed or tailored to increase visibility, and other colour combinations, such as red on pages intending to promote relaxation, were replaced with a blue, green, or purple colour scheme that more appropriately fit with the message.

### ***HHPALS Intervention Content and Delivery***

The HHPALS intervention is offered to participants who intend to reduce or abstain from alcohol consumption and involves 2 Qualtrics assessments and a brief online intervention. HHPALS provides participants with multiple techniques, strategies, and plans that can be utilised to aid in action and coping plan development. HHPALS provides participants with intervention material and content that supports intrinsic motivation and the development of behavioural change strategies, bridging the gap between intention and behaviour (Deci & Ryan, 2000, 2013; Ryan & Deci, 2000). The intervention content includes goal setting, action and coping planning, self-monitoring goals and plans, and an extensive

array of psychoeducation strategies for alcohol reduction developed from prior research and lived experiences. Participants can access six different modules to set goals for themselves, construct personalised plans, and receive feedback from their goal coach. Website modules, content, and content sources are described in Table 4.

Table 4: Overview of HHPALS Modules and respective content

Module	Content	Source
My Goals	This module prompts participants to consider why they want to change their drinking. In this module, participants can set goals for behaviour change.	Implementation Planning
Take Action	This module provides participants with a range of strategies for alcohol reduction. Participants can write notes about strategies and start making plans.	Lived Experiences
Motivation Matters	This module provides participants with facts about their behaviour and information about realising their behaviour.	Lived Experiences
Barrier Busters	This module acknowledges that getting stuck in a rut or losing motivation is expected. This module provides a wide range of options for getting out of the rut.	Lived Experiences
Trigger Tackler	This module is a CBT-based intervention that targets the reasons for drinking, urges, and triggers.	Lived Experiences and Change Behaviour Techniques (CBT)
Confidence Builder	This module consists of resilience-building activities, focussing on improving well-being. Activities are categorised based on the Te Whare Tapa Wha model.	Positive Psychology

Four modules, *Take Action*, *Motivation Matters*, *Barrier Busters*, and *Trigger Tackler*, contain a virtual whiteboard at the bottom of each strategy page, allowing participants to make notes that can be used to create plans in the future. All notes made on a whiteboard are saved to the My Plans page. The My Plans page is a planning tool for participants that allows them to develop and complete their plans based on action and coping planning theories. Table 5 provides further information about the different aspects of the My Plans page, including the virtual whiteboard found on each Strategy page. Once an initial

action plan is created, participants are prompted by the website to create a coping plan by identifying barriers and potential solutions. Participants can replace or adjust their plans across the entire intervention period.

Table 5: A component overview of the My Plans page

Component	Description
Strategy	The participant's chosen strategy is displayed in this section. Participants review several strategies in HHPALS and take notes using the virtual whiteboard to guide their plan creation. Participants will select some of the strategies (found on the My Plans page) and, using their notes, develop at least one action plan.
My Plan	This component prompts participants to develop at least one action plan by specifying when, where and how to undertake a specific behaviour (Sniehotta et al., 2005). Any notes written and saved on the virtual whiteboard are displayed here, allowing participants to quickly recall information from the strategy page that they found the most relevant. Participants can use these notes to guide action plan development to turn good ideas into actual behaviour.
Barrier to My Plan	This section is part of the coping planning component, where participants write about potential barriers or distractions that can hinder their plans. It represents the first half of the coping planning statement: " <b>If (x) happens</b> , then I will do (y)" (Sniehotta et al., 2005). Barriers or distractions can be defined as situations that endanger the performance of intended behaviour.
My Plan B	This section is part of the coping planning component, where participants plan to overcome the identified barriers or distractions to their plans' success in advance. It represents the second half of the coping planning statement: "If (x) happens, then <b>I will do (y)</b> " (Sniehotta et al., 2005).
In-Website Goal/Plan Specific Chat Box	Feedback focuses on strengthening the details of plans and assisting participants in building increasingly effective and comprehensive plans. In this component, coaches leave feedback in the in-website goal/plan-specific chat box, which participants can respond to in real time. The purpose of the chat box is to incorporate social support into the Habit Hacker websites, increase the interactivity of the online platform, and engage participants.

The *Confidence Builder* module was developed in alignment with the Māori health model. A Māori health model, Whare Tapa Wha (four cornerstones of health), is a holistic

health model developed by Dr Mason Durie (2011) from ideas formulated by a Māori health worker hui. Whare Tapa Wha consists of four pillars: taha tinana (physical health), taha hinengaro (emotional or mental health), taha whānau (social relationships with family and community), and taha wairua (spiritual health) (Durie, 2011; Rochford, 2004). The Māori worldview and understanding of health is holistic, recognising determinants of health that the Western worldview tends to overlook. Māori do not differentiate between mental and physical aspects of health. Māori believe that the life force, an energy that exists within all living things, is a unifying principle—suggesting that problems that arise in the physical world reflect problems existing in the spiritual world or vice versa (Durie, 2011). Social and cultural constructions are based on interconnectedness and interdependence, signifying the importance of community, symbiosis, and togetherness, which is the focus of this module.

The Whare Tapa Wha model varies from Western health models, which are typically based on a reductionist worldview, recognising only what can be measured in a tangible sense, such as taha tinana, physical health (Durie, 2011; Kiyimba & Anderson, 2022; Rochford, 2004). Health services in western setting tend to focus primarily on one of these pillars. As an example, mental health services are narrowly focused on the psyche and will overlook physical, spiritual, and social health (Durie, 2011). This unified understanding of health and the symbiotic nature of life and these four pillars have been heavily considered when designing Habit Hacker PALS intervention and feasibility study. Namely, the values that reflect and encourage the close and intimate relationship between people have been a core focus.

The HHPALS website also includes four support pages: About Us, Support Services, How to Use This Site and Make Your Plans Work, summarised in Table 6.

Table 6: Overview of HHPALS supporting pages

<b>Support Page</b>	<b>Content</b>
About Us	This page informs users about the project, website, people involved, and essential contact details.
Support Services	This page contains extensive contact details for essential support services, including alcohol support, health and well-being, peer and support groups, and counselling services.
How to Use This Site	This page contains information and a short video tutorial that guides participants on using and navigating the HHPALS website.
Make Your Plans Work	This page discusses the meaning of planning, barriers, and backup plans. This page contains example action and coping plans from previous lived experiences.

*Note.* HHPALS = Alcohol Habit Hacker PALS

### ***HHPALS Website and User Testing***

A psychologist, an addiction peer support worker, and a consumer from the target audience have reviewed the HHPALS site and content to ensure proper consideration was given to various perspectives. Website testers followed the provisional participant path, starting at the baseline Qualtrics survey, followed by a 'Welcome Email' (detailing the correct log-in procedure and highlighting steps to follow on the website), three email check-ins, and a post-intervention Qualtrics survey (see Appendix C for email correspondence). Running website tests ensured the content was factual with scientific backing, came across in a positive, practical manner, was accessible to a lay audience, could be appropriately interpreted, and had straightforward usability.

### ***Coaching Role and Responsibilities***

Coaching, like HHPALS, is delivered as per the Self-Determination Theory. Self-Determination Theory supports the development of intrinsic motivation. It supports individual autonomy (i.e., making our own decisions), development of competence (i.e., skill building), and supportive relationships (i.e., talking to someone about plans). Getting in the

way of participants' goals and intentions should be avoided, as it is inconsistent with the Self-Determination Theory. Sometimes, this happens by 'trying to get them to see that they need to change' or 'getting them to want to change'. It is entirely up to participants to decide they wish to change and to set their intentions.

Table 7: Coach responsibilities and 'How To' guide, in alignment with Self-Determination Theory

Theoretical Area	Responsibility	How To
Establish a relationship between coaches and each participant	Make yourself known in the program	When first communicating with participants, the coach should ensure they introduce themselves. A small introductory blurb: "Hi [Participant Name], I am [Name], and I will be your coach. I am looking forward to accompanying you on your journey.". This should be included in the first 'Coach Feedback' sent to each participant. Similarly, the coach should introduce themselves in the 'Welcome Email' sent to each participant.
	Use your name in all correspondence.	
	Have a blurb about yourself in the welcome email.	
Support participants in developing autonomy	Goal setting	Coaches support and develop participant autonomy by encouraging participants to make decisions regarding their goals, strategy selection, and plan creation. Coaches can then further this by reflecting on their reasons for these decisions, bringing clarity to participants. Coaches must refrain from imposing their own beliefs during this process.
	Strategy selection	
	Plan development	
Development of skills and competence	Affirm and support plan development, identification of barriers and coping plans	Coaches can aid participants in developing skills and competence by affirming and reflecting on their plans. By affirming participant plans, you build their confidence and encourage the positive steps they are taking. By reflecting with the participant, you reiterate what the participant has said with insight. This encourages thoughtfulness and understanding among the participants. Reflection encourages participants to consider barriers and solutions they may not have initially.
	Encourage thoughtfulness about upcoming barriers and solutions.	

Respect personal decision-making	Avoid righting reflex	Coaches should respect personal decision-making and allow each participant the autonomy to make their own decisions and choices. The coach should avoid imposing their own beliefs and techniques onto the participant, avoiding the urge to 'fix' the participant. It is important to remember that skilful advice differs from righting reflex.
	Avoid imposing personal opinions or judgement.	
Support engagement with the Habit Hacker content	Nudges towards specific content pages	The coach should always guide the participant toward the Habit Hacker Website via email correspondence or the in-website messaging feature by redirecting participants to appropriate strategies. When participants require a follow-up due to a lack of website engagement, coaches should email participants emphasising the website's 'lived experience' nature, making this content unique.
	Affirm the selection of content.	
	Reiterate the lived experience on the website.	
	Provide follow-up to people who do not use or stop using the site.	

Coaches also provide support for personal choices and individual skills through HHPALS. Advice and encouragement should be offered when requested (to keep doing what the individual has decided to do). Therefore, when participants send messages to their coach, the coach should respond with a degree of personalisation based on the participant's rapport, knowledge, and needs. This will allow users of HHPALS to feel encouraged and help build self-efficacy.

## Procedure

### *Pre-Intervention*

Following ethics approval (see Appendix E), 86 participants were recruited from New Zealand to join this study. Recruitment was predominantly managed via Facebook



advertising and word-of-mouth. Following recruitment, participants are required to complete a baseline survey. After completing their baseline survey, participants will be re-directed to the HHPALS website, prompting them to sign up and create a log-in.

### ***HHPALS Intervention***

Once participants completed their baseline survey on Qualtrics, assessing their alcohol consumption, alcohol use severity, motives, volitional state, and self-efficacy. Qualtrics has registered that a participant has completed their baseline survey, and the goal coach will send the participant a *Welcome email* (see Appendix C). Each participant was compensated for their time spent completing survey assessments at a rate of 25 NZD per hour.

When participants first access HHPALS, creating a log-in to the HHPALS website includes following the direct link provided at the bottom of the Qualtrics survey. This link will take each user to the home page. The homepage will show a black banner, which has three links. The first link is *How to Use This Site*, the second is *My Plans*, and the last is *Make Your Plans Work*. Above this banner are two buttons: *Log In* and *Sign Up*. To create a log-in for this site, the user must select *Sign Up*. They will be asked to create a username, provide an email address, create a password, and give their preferred name. Once the user has filled in the appropriate fields, they must click the green *Create new account* button.

On completion of the baseline survey, participants were sent welcome emails that outlined popular modules and strategies and briefly explained how to use the website to alleviate any feelings of being overwhelmed or stressed. The welcome email also contains a link to the website, where participants can now access different modules, strategies, planning pages, and help pages. If participants did not follow the link to the website initially provided by Qualtrics, following the email link to the HHPALS website will still take the user to the homepage where they can create their account.

At this stage, participants can work their way around the website at their own pace and move through each module in a manner that suits them.

The first module, *My Goals*, takes users to an interactive 28-day calendar. They are directed to set goals by entering their intended standard drink consumption amounts and frequency. This page includes links to user-friendly standard drink calculators to help convert drinks into a uniform measurement. Once participants have entered their standard drink consumption and frequency goals, they are asked to select the green *save to my profile* button, which stores their entries. Users should then follow the blue button at the bottom of the page. This directs users to the next section of goal setting, focusing thoroughly on reasons for change. Any entries made will be saved to the user's profiles once the *save to my profile* button is selected. Notes are saved to the *My Plans* page and can be accessed throughout the intervention.

When a participant has created a goal, an alert is sent to the appropriate coach. This alerts the coach to the recently completed plan, where they can now provide feedback and encouragement to the participant.

The subsequent four modules, *Take Action*, *Motivation Matters*, *Barrier Busters*, and *Trigger Tackler*, when selected, take users to a sub-module page where they will be able to find several different categories. An example of this is the *Take Action* module. The *Take Action* module has six sub-modules: Avoid Alcohol, Manage Urges, Future Focusses, Stay in Control, Wellbeing, and Get Support. Users will be directed to the strategy selection page once they have selected a sub-module category that resonates, such as *Manage Urges*. The *Manage Urges* sub-module contains three strategies: *Learn about Urges*, *Curb Your Urges*, and *Stay Busy*. Here, participants are free to read through all appropriate strategies and are encouraged to take notes at the bottom of the strategy page. At the bottom of each strategy page is a virtual whiteboard made available once you select the "blue, *I would like to use this*

*information in my own life* button". Notes taken on this whiteboard are saved to the *My Plans* page and can be accessed anytime.

Accessing notes saved on the *My Plans* page is relatively straightforward. Notes were taken on a strategy page, saved to the *Draft Plans* area and can be edited at any time.

Participants are encouraged to take notes on strategy pages that resonate with them, and they may feel they need extra help to succeed in that situation. Participants are then encouraged to create action and coping plans on these strategies. Users can edit a draft plan from the *My Plans – Draft Plans* page by selecting the blue, *complete* button. Here, they are prompted to enter their (i) Plan, (ii) Barriers to Plan, and (iii) Plan B.

Participants can use their notes to guide action plan development, turning ideas into actual behaviour. Any notes written and saved in the virtual whiteboard on the strategy page are displayed within the first (i) Plan text box, allowing participants to quickly recall information from the strategy page that they found the most relevant. The second (ii) Barriers to Plan text box represents the first half of the coping planning statement: "If (x) happens, then I will do (y)" (Sniehotta et al., 2005). Barriers or distractions can be defined as situations that endanger the performance of intended behaviour. Finally, in the last text box, (iii) Plan B completes the coping planning statement, "If (x) happens, then I will do (y)". Participants plan to overcome the identified barriers or distractions to their plans' success in advance.

When a participant has created a plan, an alert is sent to the appropriate coach. This alerts the coach to the recently completed plan, where they can now provide feedback and encouragement to the participant. This feedback aims to strengthen the detail and assist participants in building effective, comprehensive plans across the length of the intervention.

At the end of the intervention, participants will be emailed the post-intervention survey to complete. At this time, participants will still have access to the website and all goals, drafts, and plans. However, they will no longer have access to their coach.

### ***Weekly Check-ins***

Coaches will provide weekly check-ins via email to maintain momentum, encourage self-empowerment, and provide compassion. Check-ins will also serve as a reminder that coaches are available to provide help and support. There will be a total of 3 weekly check-ins on day 7, day 14, and day 21. All participants on day 0 will receive a *Welcome email* and their *Post-intervention Survey* email on day 28.

At each check-in, coaches will offer support and prompt participants to re-engage with the website by providing links to the website that are specific and relevant to each participant (see Appendix C for email correspondence)

### ***Data Collection and Analytical Strategy***

The data collection process will involve Qualtrics, a survey software used at baseline and 4 weeks post-intervention. Subsequently, all data will be transferred to Microsoft Excel, where it will be cleaned, reorganised, and imported to Statistical Package for the Social Sciences (SPSS Statistics; version 29.0), a statistical software suite developed by IBM for statistical analysis. The process of data analysis includes the examination and interpretation of both quantitative and qualitative data. This study will employ a quantitative analysis approach, utilizing t-tests and Cohen's *d*, to assess the impact of the brief intervention on alcohol consumption and related issues. Cohen's *d* is a statistical measure that quantifies the standardised mean difference and provides information about the effect magnitude. Cohen's *d* effect sizes can be classified as small ( $d = 0.2$ ), medium ( $d = 0.5$ ), or big ( $d = 0.8$ ) using the parameters initially defined by Cohen (Cohen, 1988, 2013; Lakens, 2013). In addition, we will use descriptive content analysis to understand the qualitative data gathered via post-intervention surveys. Additionally, the study will examine the feasibility of coaching in

promoting intervention engagement and retention rates. Collected data and analysis will guide the future delivery of the programme and methods to improve intervention implementation.

### **Research Positionality**

A researcher's positionality will undoubtedly affect their study, most profoundly in data analysis and interpretation (Milner, 2016; Rose, 1997). When the author is aware of and understands their positionality and construction, a significant amount of bias can be alleviated (Milner, 2016). Therefore, the researcher should recognise and divulge their position and how this can influence the study, data analysis, and interpretation.

I am a 25-year-old Indian-Kiwi woman. Having immigrated to New Zealand as a one-year-old, I identify more with my Kiwi culture. However, I look and may seem to an onlooker as I fit in more with my ethnic group, Indian. My experience as a migrant woman allows me to better understand and empathise with individuals who may not feel as if they fit into society or have a voice, making the turn toward drugs and alcohol as an escape seems like a reasonable option. I have experience dealing with mental health issues such as anxiety and PTSD, and I have experienced and recovered from mild to moderate levels of addiction.

Because of these experiences, I am aware of the high prevalence of stigma, heightened by the lack of education, support, and practical help available. Having experienced my barriers to recovery, I can empathise and relate to the participants' experiences and struggles. I currently volunteer twice a week as a Peer Recovery Coach for The Speed Freaks, a New Zealand-based organisation. Speed Freaks is an organisation that uses running or walking as a medium to promote recovery. I support individuals in recovery by taking residential detox patients out of their accommodation for an hour of exercise in a safe, inclusive environment. We are also involved in national and local running events,

creating opportunities for our members and coaches to engage with the community, address barriers, and boost understanding between members of society and Speed Freak recovery patients.

This experience and dealing with diverse individuals from different backgrounds and with varying degrees of addiction places me in an advantageous position to carry out this study. Volunteering at The Speed Freaks, I continually learn about different individuals' stories, barriers, and successes. I will be able to bring this understanding, compassion, and support to my participants in this study.

I believe that the most significant bias that I will bring to this study comes from my vendetta to help people with addiction and the fact that I have worked hard to design the online HHPALS website. These factors are likely to contribute to false data interpretation, possibly with an overemphasis on positive data or outcomes, neglecting or being highly critical of negative results. Data interpretation and analysis will be performed alongside another colleague to alleviate additional bias.

## **Chapter 3. Results**

### **Participant Characteristics**

In December 2022, 395 potential participants accessed the Qualtrics website, with over half (n=207) consenting to participate and 86 (65%) completing the baseline survey and enrolling in the study. 48 participants completed post-treatment evaluation, including quantitative and qualitative measures (56%). A comparison between participants who completed and did not complete post-evaluation indicated no significant differences in any demographic or alcohol-related characteristics.

As indicated in Table 8, over three-quarters of the sample were female (76.6%), and the average age was 51 (SD=10.8). Most identified as New Zealand European (66.3%) or Māori (18.6%). Eight out of ten were employed full-time (62.8%) or part-time (17.4%), with 20% retired or unemployed and looking for work. Seventy per cent of participants resided in a major city, including Auckland, Christchurch or Wellington, but participants were also from all over New Zealand, from Northland to Southland. Participants most often had degree-level qualifications (63%), with 27% diploma/trade and 11% high school completion.

The average AUDIT score was 17.2 (SD=7.5), indicating that a brief intervention would be appropriate. Across each of the AUDIT categories, 10.5% were low-risk, and 25.6% consumed alcohol at hazardous levels. A total of 64% scored over 15, indicating some alcohol dependence. This was consistent with the average amount of alcohol consumed over the past month being 93 standard drinks (SD=71.7) and an average frequency of consumption at 17.9 (SD=7.5). There were high levels of cravings, as indicated in the PACS alcohol craving scale (M=15.5, SD=7.0) and average levels of self-efficacy to resist alcohol (M=48.7, SD=19.3).

Participants were asked to estimate the intended number of drinks they would consume in the coming month using the TimeLine FollowForward (Park et al., 2021). The intended number of drinks was M 28.0 (SD=41.9), and the intended frequency was 8.2 days in the month (SD=9.7 days). Again, there was no difference in the past or intended amount of alcohol consumed between those who completed or did not complete the post-intervention evaluation.

Table 8: Baseline participant characteristics by post-intervention evaluation completion (M, SD)

<b>Characteristics</b>	<b>Completed post- intervention (n=48)</b>	<b>Did not complete post- intervention (n=38)</b>	<b>Group comparisons</b>
Gender, n (%)			$\chi^2(2)=1.24, p=.266$
Male	9 (18.8)	11 (28.9)	
Female	39 (81.3)	27 (71.1)	
Age, mean (SD)	51.8 (9.0)	49.7 (12.7)	$t(84)= -0.937, p=.176$
Ethnicity, n (%)			$\chi^2(2)=2.53, p=.282$
NZ European	35 (72.9)	22 (57.9)	
Māori	8 (16.7)	8 (21.1)	
Asian/European	5 (10.4)	8 (21.1)	
Employment, n (%)			$\chi^2(2)=2.25, p=.325$
Employed full time	31 (64.6)	23 (60.5)	
Employed part-time	10 (20.8)	5 (13.2)	
Unemployed/Retired	7 (14.6)	10 (26.3)	
Education, n (%)			$\chi^2(2)=4.62, p=.099$
High school	2 (4.2)	7 (18.4)	
Diploma/Trade	14 (29.2)	9 (23.7)	
Degree/post-graduate	32 (66.7)	22 (57.9)	
Location, n (%)			$\chi^2(2)=0.053, p=.817$
City	33 (68.8)	27 (71.1)	
Regional	15 (31.3)	11 (28.9)	
AUDIT	15.9 (6.6)	18.8 (8.3)	$t(84)= 1.803, p=.075$
AUDIT-C	7.3 (2.5)	8.1 (2.6)	$t(84)= 1.399, p=.165$
1-7 low risk n (%)	7 (14.6)	2 (5.3)	$\chi^2(2)=2.725, p=.256$
8-14 hazardous n (%)	10 (20.8)	12 (31.6)	
>15 dependence n (%)	31 (64.6)	24 (63.2)	
Drinking amount past month (TLFB)	85.3 (59.0)	103.3 (84.8)	$t(84)= 1.159, p=.250$
Days drinking past month (TLFB)	17.8 (7.7)	18 (7.2)	$t(84)= 0.141, p=.888$
PACS alcohol craving scale	15.3 (7.1)	15.7 (7.1)	$t(84)= 0.290, p=.772$
Self-efficacy to resist alcohol	50.4 (19.8)	46.5 (18.6)	$t(84)= -0.948, p=.346$
TIPI Extraversion	3.6 (1.5)	4.1 (1.6)	$t(84)= 1.43, p=.157$
TIPI Agreeableness	5.1 (1.0)	5.3 (1.0)	$t(84)= 1.35, p=.178$



TIPI Conscientiousness	5.3 (1.2)	5.0 (1.0)	$t(84) = -1.23, p = .222$
TIPI Neuroticism	4.2 (1.4)	4.1 (1.4)	$t(84) = 0.148, p = .882$
TIPI Openness	5.2 (1.2)	5.5 (1.1)	$t(84) = 1.192, p = .237$
Action planning	4.2 (1.8)	3.8 (1.9)	$t(84) = -1.100, p = .317$
Coping planning	4.2 (1.6)	3.7 (1.7)	$t(84) = -1.128, p = .204$
Action control	4.3 (1.7)	4.2 (1.7)	$t(84) = -0.461, p = .646$
Intended drinks (TLFF)	20.0 (27.7)	37.8 (53.7)	$t(84) = 1.980, p = .051$
Intended frequency drinks (TLFF)	6.7 (8.1)	10.2 (11.1)	$t(84) = 1.672, p = .098$

Note. M = Mean. SD = Standard Deviation. AUDIT = Alcohol Use Identification Test. TLFB = Timeline Follow-Back. PACS = Penn Alcohol Craving Scale. TIPI = Ten-Item Personality Inventory. TLFF = Timeline Follow-Forward.

## Participant Engagement

Across the sample, 65 (75.5%) logged into the HHPALS website and started the intervention. As indicated in Table 9, participants who logged in were more likely to be female than male and have lower levels of coping. There were no other significant differences between those who logged in and those who did not on any demographic or alcohol-related variables.

Participants completed an average of 3 plans (range 0-12), with 45/65 setting additional goals on the HHPALS website. 32/65 participants responded to at least one email prompt, but just 13 responded to plan feedback from the coach on the website.

Table 9: Participant engagement with the study protocol (M, SD)

Characteristics	Logged onto the website (n=65)	Did not log onto the website (n=21)	Group comparisons
Gender, n (%)			$\chi^2(2) = 5.981, p = .019$
Male	11 (16.9)	9 (42.9)	
Female	54 (83.1)	12 (57.1)	
Age, mean (SD)	52.1 (10.6)	47.2 (11.0)	$t(84) = -1.806, p = .075$

Ethnicity, n (%)			$\chi^2(2)=.497, p=.780$
New Zealand European	44 (67.7)	13 (61.9)	
Māori	11 (16.9)	5 (23.8)	
Asian/European	10 (15.4)	3 (14.3)	
Employment, n (%)			$\chi^2(2)=1.648, p=.156$
Employed full time	42 (64.6)	12 (57.1)	
Employed part-time	11 (16.9)	4 (19.0)	
Unemployed/Retired	12 (18.5)	5 (23.8)	
Education, n (%)			$\chi^2(2)=5.781, p=.056$
High school	4 (6.2)	5 (23.8)	
Diploma/Trade	17 (26.2)	6 (28.6)	
Degree/post-graduate	44 (67.7)	10 (47.6)	
Location, n (%)			$\chi^2(2)=5.781, p=.056$
City	43 (66.2)	17 (81.0)	
Regional	22 (33.8)	4 (19.0)	
AUDIT	16.6 (7.3)	19.1 (8.0)	$t(84)=1.355, p=.179$
AUDIT-C	7.5 (2.4)	8.14 (3.1)	$t(84)=.966, p=.337$
1-7 low risk n (%)	7 (10.8)	2 (9.5)	$\chi^2(2)=2.060, p=.357$
8-14 hazardous n (%)	19 (29.2)	3 (14.3)	
>15 dependence n (%)	39 (60.0)	16 (76.2)	
Drinking amount past month (TLFB)	87.7 (56.3)	110.3 (106.2)	$t(84)=-.329, p=.211$
Days drinking past month (TLFB)	18.0 (7.0)	18.0 (9.1)	$t(84)=.056, p=.955$
PACS alcohol craving scale	15.6 (6.9)	15.1 (7.5)	$t(84)=-0.11, p=.743$
Self-efficacy to resist alcohol (BSCQ)	50.0 (19.1)	44.8 (20.0)	$t(84)=-1.070, p=.288$
TIPI Extraversion	3.9 (1.6)	3.8 (1.5)	$t(84)=-0.11, p=.991$
TIPI Agreeableness	5.2 (0.9)	5.0 (1.2)	$t(84)=-.760, p=.449$
TIPI Conscientiousness	5.1 (1.3)	5.3 (1.4)	$t(84)=-.606, p=.546$
TIPI Neuroticism (TIPI)	4.2 (1.4)	4.1 (1.4)	$t(84)=-.230, p=.818$
TIPI Openness	5.3 (1.1)	5.3 (1.1)	$t(84)=.169, p=.866$
Action planning, mean (SD)	4.1 (1.9)	4.0 (1.8)	$t(84)=-.233, p=.816$
Coping planning, mean (SD)	3.8 (1.6)	4.6 (1.8)	$t(84)=2.037, p=.045$
Action control, mean (SD)	4.3 (1.6)	4.3 (1.8)	$t(84)=-.008, p=.993$
Intended drinks (TLFF)	24.0 (28.6)	39.8 (68.0)	$t(84)=1.512, p=.134$
Intended frequency drinks (TLFF)	7.8 (8.4)	9.6 (12.9)	$t(84)=.761, p=.449$

*Note.* M = Mean. SD = Standard Deviation. AUDIT = Alcohol Use Identification Test. TLFB = Timeline Follow-Back. PACS = Penn Alcohol Craving Scale. BSCQ = Brief Situational Confidence Questionnaire. TIPI = Ten-Item Personality Inventory. TLFF = Timeline Follow-Forward.

## Impact of Intervention

At post-treatment, participants (n = 48) reported change to all outcome measures from baseline to 30-day evaluation. As indicated in Table 10, there was a substantial effect on AUDIT-C (d = 1.099, 95% CI [0.736, 1.454]) with decreases from baseline to post-treatment.

There was a significant decrease in the amount of alcohol consumed (d = 0.957, 95% CI [0.61, 1.29]) from baseline to post-treatment. A similar significant effect was found for days of consuming alcohol (d = 0.991, 95% CI [0.64, 1.33]) from baseline to post-treatment.

Regarding urges and cravings, there was a medium decrease (d = .558, 95% CI [0.25, 0.86]) in the frequency from baseline to post-treatment. Situational self-efficacy was also significantly improved with a large effect size (d = -.805, 95% CI [-1.128, -.475]).

Planning variables also changed pre-post intervention. Action planning and the ability to plan what, when and how to manage alcohol was associated with a large effect (d = -.805, 95% CI [-1.128, -.475]). Similarly, there was a large effect on the ability to create coping plans, such as coping with barriers to change (d = -.434, 95% CI [-0.728, -0.135]). Lastly, there was a large effect on action control that referred to an ability to self-regulate alcohol consumption (d = -.821, 95% CI [-1.145, -.490]).

Interestingly, 11 participants were completely abstinent for the study period, and 29/48 had fewer than 20 standard drinks for the entire month.

Table 10: Pre-post evaluation comparisons for completers M, SD (n=48)

Variables	Baseline	Post-treatment	Comparison statistics ( <i>t</i> , <i>p</i> )	Effect size
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AUDIT-C	7.33 (2.5)	4.5 (3.3)	7.611	<.001	1.099
Alcohol consumption [Std. Drinks]					
Alcohol consumed	85.2 (59.0)	29.8 (44.7)	6.628	<.001	.957
Frequency of use	17.8 (7.7)	8.7 (9.0)	6.866	<.001	.991
PACS craving	15.3 (7.1)	12.0 (6.3)	3.865	<.001	.588
Situational Efficacy	50.4 (19.7)	67.1 (19.0)	-5.575	<.001	-.805
Planning					
Action planning	4.2 (1.8)	5.5 (1.7)	-4.169	<.001	-.602
Coping planning	4.2 (1.6)	5.0 (1.5)	-3.004	=.004	-.434
Action control	4.3 (1.7)	5.7 (1.5)	-5.685	<.001	-.821

*Note.* M = Mean. SD = Standard Deviation. AUDIT-C = Alcohol Use Identification Test –

Consumption. Std. Drinks = Standard Drinks. PACS = Penn Alcohol Craving Scale.

*Effect size values:*  $r = 0.2 =$  Small,  $0.5 =$  Medium,  $0.8 =$  Large [Cohens D]

## Acceptability of Habit Hacker PALS

Participants completed a number of quantitative and qualitative measures to report on their experiences and perceptions of HHPALS. As indicated in Table 11, participants reported that the program was beneficial, with just seven reporting that it did not meet their needs overall. Most agreed that the program was easy to follow, fit their goals well, and that the coach was valuable for sticking to the goals and plans. Participants were asked if they would recommend HHPALS to someone else looking to cut back on their alcohol use. A total of 32/48 said they agreed or strongly agreed they would recommend the program.

Table 11: Overall usefulness of Habit Hacker PALS and its components

Question	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
Habit Hacker PALS resources were useful to me	3	4	8	19	13
Habit Hacker PALS was easy to follow	4	8	6	17	12
The support from my coach was helpful for sticking to my goals and plans	2	5	11	15	14
Habit Hacker PALS was a good fit for me and my goals	4	5	7	17	14
I would recommend Habit Hacker PALS to someone else looking to cut back on their alcohol use	2	5	8	14	18

The qualitative evaluation sought a more in-depth understanding of participants' experiences of HHPALS. This section examined the perceived most and least helpful aspects of the program as well as issues around the timing and skills learned.

### ***Most Helpful: Resources and Strategies***

Qualitative evaluation aimed to identify the helpful and least helpful elements in the HHPALS program. The most helpful aspects included resources, specific strategies, accountability and planning, and communication and support.

Participants emphasised the usefulness of various resources available in the program. These resources included modules, reading materials, and videos, including a personalised YouTube welcome video and additional short clips. Notably, participants appreciated the accessibility and comprehensiveness of the information, mentioning the program's ease of access and the utility of its tips and advice. Alternative drink suggestions, such as mocktails, were also noted. Moreover, the initial information was perceived as instrumental in supporting participants' decisions regarding the program.

*Personal YouTube welcome video and short video clips.* (Female, 49, AUDIT 8)

*Easy access. Very informative. Great tips/advice.* (Female, 43, AUDIT 23)

*The initial information helped to support my decision.* (Female, 44, AUDIT 11)

The information, strategies and tips were derived from previous work and lived experience and were intended to be easily relatable. Participants reported the value of the program's diverse strategies, emphasising the practicality and applicability of the various strategies contained within the program. The information provided was helpful, concise, and relevant, offering participants insights into the underlying reasons for specific habits.

*Most helpful was the range of different strategies with practical ideas and information.* (Female, 42, AUDIT 14)

Other helpful information was stories of recovery and ways people came to understand and become aware there was a problem. For example, one participant stated that the most helpful part was the increased awareness of alcohol and consumption and being aware that other people also struggle.

Resources, presented in bite-sized segments, were favoured by those who described themselves as slow and deliberate readers. Furthermore, participants valued the opportunity provided by the program to evaluate their alcohol consumption over extended periods, such as weeks or months, instead of daily assessments.

*Bite-sized bits of information suit slow, considered readers.* (Female, 42, AUDIT 9)

*The resources available for me to look at in my own time with no pressure to keep up.*

(Female, 42, AUDIT 9)

### ***Most Helpful: Accountability and Planning***

Participants reported that reminders, notably through regular emails, helped keep New Year goals at the forefront of their minds. Accountability emerged as a key theme, reinforcing the importance of planning in terms of consumption quantity and timing. The act of goal setting, particularly the autonomy in establishing personal goals, was essential for participants.

*It was helpful to see the regular email as a reminder of my resolution.* (Female, 66, AUDIT 9)

*Planning when and how much to drink.* (Male, 47, AUDIT 12)

*Goal setting and being able to set my own goals was important.* (Female, 42, AUDIT 14)

*This program is good as its not 'all or nothing.'* (Female, 38, AUDIT 17)

Committing to the program was tied to an awareness of its potential for positive outcomes. Enrolling in the project was described as a good motivator, urging participants to evaluate their drinking behaviours critically—the resources providing planning tools assisted in this introspective activity. Consistent check-ins and reminders enabled participants to maintain their focus and reflect deeply on their alcohol consumption.

*Enrolling with the project gave me a real incentive to do something about my drinking. (Male, 62, AUDIT 19)*

*It did make me think seriously about how much I was drinking. (Female, 73, AUDIT 20)*

### ***Most Helpful: Support***

Participants reported that a helpful part of the program was the inclusion of coaching support by email. Participants valued the weekly emails, inclusive of prompts and encouragement.

*I really liked the flow of emails. (Male, 50, AUDIT 13)*

Lastly, participants valued the personal support in the program, with specific emphasis on the value of consistent communication and encouragement. The relationship and guidance provided by the coach through HHPALS or via emails were particularly beneficial, as was the opportunity to discuss individual progress with them.

*Having someone to communicate with and encourage. (Female, 57, AUDIT 16)*

*It was helpful to give me the support I needed to finish the challenge. (Male, 58, AUDIT 15)*



The presence of a dedicated coach was perceived as a significant motivator, aiding participants in staying on track. The combination of in-person support, supplemented by the coach's email reminders, was beneficial. Overall, the regular check-ins and support were instrumental in enabling participants to achieve their goals.

*Having a coach (Sarah) on my side, available for me and her being so responsive.*

(Female, 49, AUDIT 8)

*The coach just being there was helpful and also emails from the coach to remind me.*

(Female, 53, AUDIT 16)

*Having a sobriety coach helped keep me motivated and on track. (Female, 47, AUDIT 11)*

## **Areas for Improvement**

Participants were asked to report on areas for improvement, and 37 reported some aspects for improvement, with 12 reporting that no improvement was needed. Key themes were related to the technology for access and delivery of the activities, access to coaching, tailoring of content and resources and the timing and personal availability at that time of year.

Most comments were related to making the content more accessible and easier to navigate. Multiple participants suggested a need for a smartphone app to enhance their experience and potentially solve several issues they encountered. In particular, there was reluctance to access the plans, strategies, and support online when online access was not always available. Participants also suggested that an app would make it easier to navigate the content.

Participants said that a visual tracker of progress would be helpful in terms of goal setting. Some wanted to monitor their progress and see the days checked off, including how they were tracking against the goal. Two participants thought the plan information could be

more explicit so that participants knew that they had done the plans correctly. Another participant thought having to plan out their alcohol consumption for a month was difficult.

*Some kind of visual tracker would have been useful.* (Female, 58, AUDIT 21)

*Having to provide estimates/goals for consumption for the entire month.* (Female, 51, AUDIT 19)

Two participants thought the content was not a good fit for them in their current state of change. One participant suggested that the website was no longer needed once they had set their goals and created a plan.

*All the reading material. Once I'd made the commitment and settled on recording my daily drinks total, the coaching and hints became pretty superfluous.* (Male, 62, AUDIT 19)

While coaching was provided through the website and participants had access to weekly check-ins, some participants suggested more support would have been helpful. One participant lacked personal interaction and needed more direct communication; another suggested they wanted to be held more accountable. There was a view that different coaching might be available, including people with lived experience. One participant noted that they struggled to read emails and preferred the thought of receiving all communication through an app.

*Although my coach was available, I personally feel I need someone to actually talk to.* (Female, 73, AUDIT 20)

*I wasn't kept accountable as often as I thought I would be.* (Female, 44, AUDIT 11)

*I think an app would have been easier as I struggled to find time to read emails/log in.* (Female, 53, AUDIT 6)

## Timing of the New Year challenge

This section unpacks the participants' diverse experiences and perspectives regarding the challenge's timing. The information provides insights into how the circumstances of the holiday period, personal schedules, and external factors influenced their journey.

The transition into a new year emerged as a symbol of a fresh start for many participants. This was not just about reducing alcohol intake; it was about harnessing the energy of new beginnings that are important in the New Year. The annual tradition of setting resolutions provided a framework for participants, helping them anchor their commitment. Phrases such as "new health goals," "healthier lifestyle choices," and "New start" highlight this sense of purpose, suggesting that timing matters when fostering change.

*New Year a great way to start healthier lifestyle choices.* (Female, 57, AUDIT 16)

*It was a good time for a new start. It coincided with other wellbeing and self-care actions including therapy.* (Female, 49, AUDIT 18)

Some participants found the timing helpful in supporting personal milestones and determinants that predated January. For these participants, the challenge was a helpful support for an alcohol reduction goal that had already commenced.

*I made the decision on 28/12 to stop drinking for 1year as a personal challenge.*  
(Female, 44, AUDIT 11)

*I started before Christmas... am still alcohol free.* (Female, 52, AUDIT 21)

External conditions, especially weather and event schedules, played a role in participants' challenges. Rainy days and cancelled plans acted as unexpected support, reducing social temptations and encouraging introspection. On the flip side, the holiday season was associated with gatherings and celebrations, and these sometimes derailed

participants' intentions, underscoring how our environments can both challenge and support our goals in unexpected ways.

*The awful rainy weather helped... events and camping trips were cancelled.* (Female, 52, AUDIT 5)

*January was a busy month with visitors. So there were some shared meals where it was difficult for me not to drink alcohol.* (Female, 63, AUDIT 10)

For many, the challenge's success seemed intricately tied to preparation. The complexity of the task, without adequate mental readiness, presented difficulties for some. Three participants desired more lead time to get organised and established. These participants discussed the importance of being organised and knowing what to do before the challenge. Furthermore, a vital issue for one participant was that they were away from their computer for the holiday period, making it challenging to complete the preparation needed or to update their strategies and plans. Of note, one participant who enrolled late eventually withdrew because of insufficient preparation time.

*One strong take away on my part is that I did not do enough preparation or planning.* (Female, 58, AUDIT 21)

Social settings and peer influence both helped and hindered the timing of the challenge. While some found shared resolutions helpful, others felt the weight of expectations and social norms, particularly during family gatherings. The pressure to conform and join in with drinking opportunities for family and professional settings like events underscored the importance of preparing for social interactions.

*I found it hard. We had extended family staying from overseas so there was a lot of pressure to include alcohol.* (Female, 48, AUDIT 5)

*At first yes but unfortunately I work in events and alcohol is constantly around and the pressure and stress is high. (Female, 53, AUDIT 16)*

### **New Skills Acquired During the Intervention**

HHPALS aimed to support participants in reducing their alcohol consumption through the acquisition of new skills. Participants reported a range of different skills that were both directly and indirectly related to alcohol use. Four broad themes were identified: self-awareness and self-control, social and cultural competence, strategies, tools and resources and well-being, health and lifestyle.

#### ***Self-Awareness and Self-Control***

Participants reported a heightened consciousness about personal alcohol-related tendencies. This involved a focus on recognising alcohol-related thoughts, understanding personal triggers, and reflecting on the impacts of drinking habits. Participants also reported becoming aware of how alcohol had been impacting their lives. This included using alcohol to manage negative emotions and as a way of dealing with trauma.

*Understanding my relationship with alcohol has been enlightening. It's not just about the drink, but the reasons behind why I was reaching for it. (Female, 42, AUDIT 9)*

*Gained some really good insights into my triggers. (Female, 58, AUDIT 21)*

*I realized now how alcohol has been having such a negative impact on my life. (Male, 58, AUDIT 15)*

*I struggle also with not drinking when I am alone and these are feelings I need to deal with and not mask by alcohol. (Female, 58, AUDIT 21)*

*That I used alcohol to self soothe as a way of dealing with trauma. That my use of alcohol was out of self-loathing not self-care. That it was just making everything worse. (Female, 49, AUDIT 18)*

Part of the reason for being able to respond differently to triggers was a perceived increase in self-control. Participants reported increased belief in their ability to resist urges and to take control over their desire to drink.

*I have learned that I do not have to act on my thoughts or urges, if they do not serve me. (Female 47, AUDIT 11)*

*Being able to control my thoughts and behaviours, learning new strategies for controlling urges to drink such as meditation, distracting myself, rewarding myself in other ways. (Female, 42, AUDIT 14)*

New skills were also reported in terms of self-reflection and mindfulness. Participants reported thinking about what alcohol had cost them in terms of lost time and impacts on relationships. One participant noted that spending January alcohol-free meant that they were entering February with a clean perspective and could be increasingly mindful of their future consumption.

*So much introspective thoughts about my drinking and its impacts on others. (Female, 45, AUDIT 17)*

*I did a lot of thinking about past behaviour while drinking - the waste of time when drinking, the hangovers, and the money spent. (Female, 57, AUDIT 24)*

### ***Social and Cultural Influences***

Participants reported increased awareness of the link between alcohol and the New Zealand culture. Two participants notably mentioned how alcohol and our culture, namely the way we celebrate, were intertwined, with another noting how frequently they were offered a drink.

*Massive. That alcohol and good times are so intricately connected in NZ culture.*

(Female, 38, AUDIT 17)

*How intertwined alcohol is in our culture.* (Male, 44, AUDIT 15)

*Being conscious of how often I am offered a drink.* (Female, 63, AUDIT 3)

Some participants reported that they had a new understanding of the role of friends, family, and social gatherings in alcohol consumption and needed to find ways to navigate these situations. Participants recognised that specific people held a strong expectation of them drinking during social gatherings, which created a challenge in abstaining. Others reported the importance of setting boundaries and not letting others pressure them to drink.

*Realised that I have one friend in particular who has a very fixed concept that I must drink whenever we socialise which was hard to resist.* (Female, 58, AUDIT 21)

*Learning I need to be more guarded in my alone time. And making a point to plan things with other people, especially those who support my sobriety, has been most beneficial.* (Male, 50, AUDIT 13)

A common theme was the importance of ensuring a supportive environment, with participants realising the need to spend time with individuals who respect and support their alcohol-related goals. Moreover, the impact of drinking on personal relationships was reported as new information by one participant who began to realise that alcohol had caused issues of trust between them and their partner.

*There is a shift in groups that non-drinkers are not pressured to drink. My decision is widely accepted and supported. (Female, 44, AUDIT 11)*

*The fact I am not trusted by my partner. Lots of learnings and it has made it so I have decided to give up drinking forever. (Female, 45, AUDIT 17)*

## **Strategies, Tools, and Resources**

Participants identified new strategies, tools, and resources to assist with their alcohol reduction. Some found identifying non-alcoholic beverages and other activities to replace the act of drinking was helpful. In particular, 0% alcohol products helped participants feel part of a group and included without actually consuming alcohol. One participant noted that it was helpful for them to think of alcohol as a poison that could be replaced with other substances like tea or water.

*I have changed to 0% alcohol if I feel I want to join the crowd. This decision has helped me to stay committed to my challenge but also allow me to feel included in the event. (Female, 44, AUDIT 11)*

*I found zero beer was a good alternative. (Female, 66, AUDIT 9)*

*Understanding that alcohol is basically a poison has been helpful to have a cup of tea or a water instead of an alcoholic drink. (Female, 52, AUDIT 5)*

Participants also reported adopting a variety of tactics and having quick, practical options at their disposal to manage alcohol cravings and stick to their alcohol reduction goals. Many participants emphasised proactive control, such as establishing an alcohol-free home environment or pausing their behaviour to make deliberate, intentional choices. Additionally, recognising personal triggers and planning specific responses ahead of time emerged as a critical method for some participants. The tools and resources provided assisted participants



in dealing with urges, triggers, and coping, but the need for individual, personalised solutions was highlighted.

*Take the control, pause, and don't have alcohol in the house. (Female, 65, AUDIT 9)*

*I am aware of my triggers and have formulated responses to deal with them if they should arise. (Male, 55, AUDIT 15)*

*Urges, triggers, coping - there was a lot of good information and skills and I can see this being a great tool. (Female, 53, AUDIT 16)*

Additionally, alternative relaxation techniques, such as breathing exercises and meditation, were mentioned as valuable approaches, suggesting a shift from relying on alcohol for relaxation to adopting healthier coping mechanisms. The use of rewards and distractions further indicated a focus on positive reinforcement and diversionary tactics to manage alcohol-related urges.

*I have learnt to relax without alcohol by using breathing exercises. (Female, 47, AUDIT 11)*

*Finding out I can relax without alcohol has been great. (Female, 47, AUDIT 15)*

*Being able to control my thoughts and behaviours, learning new strategies for controlling urges to drink such as meditation, distracting myself, rewarding myself in other ways. (Female, 42, AUDIT 14)*

Participants also reported that planning and self-monitoring were helpful skills learned during the intervention. One participant mentioned planning beforehand, specifically organising the month around their alcohol consumption, was beneficial. Another participant mentioned that self-monitoring consumption with a calendar provided a great incentive to stick with the challenge. Consumption tracking throughout a week was also beneficial, rather

than focusing on a single day and having a higher chance of being disappointed at not sticking to the plan.

*I learned how useful planning is - looking at the month ahead and thinking about when to include alcohol. (Female, 48, AUDIT 5)*

*Keeping a daily log of how many glasses of wine I had proved a real incentive - a kind of competition: me versus the calendar. (Male, 62, AUDIT 19)*

*Rather than looking at my drinking patterns just by the day, I can consider them over a longer period like a week. I think it is more attainable for me, personally, to have a goal of reduction in alcohol units total for a week, so I don't feel discouraged if I over-indulge on a particular day. (Female, 51, AUDIT 19)*

Participants used program materials as well as other sources of knowledge and tools to understand their relationship with alcohol better. Participants noted that the content was highly informative and helped people understand their motives and consumption patterns. Podcasts were used as introspective tools to help participants reconcile their drinking habits, while motivational videos on the HHPALS website provided insights applicable to alcohol use and additional health concerns. Participants felt that this increased awareness and knowledge facilitated informed decision-making.

*Really breaking down the reasons and my relationship with alcohol. I found the education really informative. I wanted to make changes and love that I'm on a pathway to a life where I'm always in control of the alcohol I choose to have or not have. (Female, 42, AUDIT 9)*

*Many of the motivational videos were interesting. I don't think I have a serious alcohol problem but want to reduce for health reasons. These videos contained many ideas for this and other areas, e.g. eating issues. (Female, 63, AUDIT 10)*

*Listening to a podcast that has helped me come to terms with my drinking. (Female, 45, AUDIT 17)*

*Taking part has been worthwhile. I enjoyed all of the articles and different categories. (Female, 49, AUDIT 8)*

One participant reported that the resources were not just helpful for alcohol reduction but gave the feeling of not being alone in their journey.

*I discovered that I was not alone in my struggles with alcohol and that there were a lot of resources out there to help me. (Female, 51, AUDIT 12)*

In addition to a focus on alcohol reduction, participants reported new skills and activities that were more directed towards physical and mental well-being. Through the challenge, participants developed skills to prioritise their well-being, making positive lifestyle changes like going to the gym. Many stated that this was driven by evaluating the impact of alcohol on their well-being, eventually leading to a focus on healthier alternatives.

*Alcohol runs down my physical wellbeing; I had a sports injury in late December and not drinking has helped my recovery. (Male, 47, AUDIT 12)*

*That my health and peace of mind are my priority. (Female, 57, AUDIT 16)*

Some noticed a link between alcohol and negative mood. One participant noted that every time they tried to reduce alcohol, they felt depressed and that this became more difficult as they aged. Another stated that it was essential to acknowledge that change takes time and that the highs and lows of behaviour change are expected. This acknowledgment helped lessen the likelihood of depression.

*I have also learned however that the older I get the harder it is to quit drinking and that I get depressed for a while after stopping drinking and need to replace it with something so I started going to the gym. (Male, 47, AUDIT 12)*

*I realised the triggers I have are a bigger problem than I realised. And things may take time. So I am not getting so depressed. (Female, 49, AUDIT 22)*

Doing the challenge also resulted in some participants reporting improved physical and mental health. This included having a clearer head, feeling less anxious and better sleeping.

*Enjoyed a clearer head. (Female, 48, AUDIT 10)*

*The resources have definitely got me thinking, and my mental health has improved. (Female, 49, AUDIT 22)*

*Seeing the positive impacts of not drinking, like better sleep and more energy, has been motivating. (Female, 39, AUDIT 16)*

### **Other Comments about the HHPALS**

At the conclusion of the second questionnaire, participants were prompted to offer additional comments or overall perspectives. This information is particularly beneficial because, at times, it succinctly demonstrates individual experiences and how these differed across the sample.

Thirty-seven participants offered general comments after the post-treatment evaluation. These were related to appreciation and support, personal growth and success, program improvements and sustainability. Participants expressed gratitude for the program and the program staff. Some noted the importance of a personal touch and guidance, particularly the primary coach, who developed a good relationship with participants.

*Thank you for giving me the chance to be part of the programme. (Female, 73, AUDIT 20)*

*Huge thanks to Sarah, appreciated the emails even though life demands made it hard to respond. (Female, 42, AUDIT 9)*

Participants also reported learning more about themselves and gaining new tools and insights into their habits. Some participants also indicated that they would continue with their alcohol reduction. Others stated that they would set a new challenge related to healthy eating. Participants also shared their achievements in reducing or abstaining from alcohol and also the challenges they faced. While some did not reach the desired results, they could still see benefits in the program.

*I have learnt such a lot about myself over the last month. (Female, 47, AUDIT 11)*

*I didn't think it was possible for me to abstain from alcohol for a month, but I succeeded. (Female, 47, AUDIT 11)*

*I wish I could have participated fully in this study. If another was run in the future, I would be very interested to find out more, but with a decent amount of preparation time in advance! (Female, 44, AUDIT 7)*

Some participants did not fully engage because they found the tools complicated or too detailed. Others suggested an app would be more user-friendly and streamline the intervention so that participants only received content relevant to their personal situation and preferences.

*Just the idea is brilliant... but everything from the survey to the programme are far too long and complicated. (Female, 45, AUDIT 18)*

*I like the strategy and goal setting in Habit Hacker PALS but just think it needs to be a little more streamlined. (Female, 45, AUDIT 17)*

Some participants noted ideas concerning sustainability and longer-term access. Multiple participants reported a desire for ongoing access and more guidance on maintaining progress. One suggested the idea should be extended to other addictive behaviours like smoking.

*What next? More guidance about what to do once the online programme is finished in order to sustain progress. (Female, 66, AUDIT 24)*

*Get this onto an App. Use it for stop smoking too. (Female, 53, AUDIT 6)*

## **Improving Social Support**

### ***Feasibility and Preferences for Social Support***

While the coach was evaluated as helpful in both quantitative and qualitative evaluation, one participant said they would rather have peer support. It is possible that other participants would similarly have preferred peer support with or without other support.

To determine what kind of peer support would have been helpful, we extended our post-intervention surveys by including a few probing questions to provide solutions for implementing peers as an additional mode of social support. As indicated in Table 12, there was strong agreement that peers could provide support for ‘in the moment’ temptation and urges, staying motivated, and having someone to talk to.

Table 12: Preferred peer support options

Question	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
Support for staying motivated	2	2	3	25	15
Advice on practical things like getting organised	1	-	10	23	13
In the moment help for temptation and urges	-	2	8	15	22
Just having someone to talk to	-	2	9	16	20

Participants also reported on who could offer peer support. Overwhelmingly, the greatest support was for people who had already met their alcohol reduction goals. There also remained strong agreement for providing peer support when changing their own alcohol and support for family, whanau, and peers.

Participants were asked if they had other thoughts about peer support in addition to quantitative responses. There was broad support for the coaching model and even extending this towards another type of coaching, such as health coding. Some noted they liked the private and anonymous nature of coaching. Others also suggested that peers could be individuals outside of their circles. This was in part because of the feeling that alcohol reduction was a private issue that friends or family would not necessarily understand.

*It is nice to have an anonymous nature to the support structure.* (Female, 35, AUDIT 23)

*'Outsiders', not experts necessarily but informed, accepting 'others'.* (Female, 51, AUDIT 11)

*It's a very private issue, so not a matter for family and friends, they just don't understand and the judgements. (Female, 49, AUDIT 22)*

The alternative view was that peers with similar life experiences could provide support. Multiple participants stated that this support could be anyone who had struggled with alcohol or other similar past experiences. There was also a view that peer support could originate from anywhere, including friends or co-workers who wanted to cut back. One participant suggested that others in the program could be a source of support because they were managing the same issues.

*People who have struggled with alcohol in the past and want to share their experiences to guide others. (Female, 47, AUDIT 11)*

The issue of who the program is targeting in terms of alcohol use is essential to peer support. For example, the participant below noted that peer support is an ongoing commitment that could prove problematic for those facing a severe problem. While this was not the program's goal, it highlights the importance of ensuring that the model of peer support reflects the severity of the problem. Others stated that peer support was not always wanted – especially when the person was still coming to terms with or accepting that there was a problem.

*Because it's such a real-life, private and personal programme and each person is dealing with their own potential issues, there may be mixed results for peer support. Having a decent peer support system would need everyone to commit and dwell on the positives of their alcohol reduction, and I'm not sure all could do that when they are facing their own truths around, sometimes decades long, alcohol habits and intake. (Female, 49, AUDIT 8)*



*When I began this challenge I didn't want any peer support. I found saying "I have a problem" very hard and wanted to see what I could do by myself.* (Female, 66, AUDIT 24)

Table 13: Perception of who could offer peer support

Question	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
People could provide peer support to their own family or whānau	5	5	5	20	12
People could provide peer support to friends or colleagues	2	4	4	25	12
People could provide peer support when changing their own alcohol use	2	2	7	23	13
People could provide peer support after they have met their own alcohol reduction goals.	-	1	4	20	22

Participants were prompted to specify what someone would need to offer peer support to HHPALS. There was strong agreement that some training or information and a mentor or group of peers with shared experiences would be required. There was support for koha or gift vouchers for training, albeit weaker agreement than other options.

Participants were asked to report on anything else that would help facilitate peer support. Participants stated it would be helpful for peer support to be offered in an app, social media, online chat or a peer forum. There was also a view that peer support could be

anonymous via a group chat, with only a moderator knowing each user to ensure accountability.

*Being anonymous in a group chat - but a moderator knowing everyone for accountability. (Female, 44, AUDIT 19)*

*A platform to share such as technology, for example everything is online these day so perhaps an online chat. (Female, 42, AUDIT 14)*

There was also a view that peer support can be offered in different ways according to the individual needs and preferences of the person offering and receiving the support. Some participants suggested that any kind of peer support should be optional and that individuals should be able to determine and set their reward systems for themselves and others.

*Recognition that different people have different needs when addressing an addiction.*

*Some people will benefit more from peer support than others. (Male, 62, AUDIT 19)*

Table 14: Resources and training for peer support

Question	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
Access to training or information on how to provide peer support	1	-	2	11	33
Koha or a gift voucher for time spent on the training	3	6	7	16	15
A mentor who could provide advice or share experiences	1	2	-	16	28
A group of other peers that could provide advice or share experiences	-	1	4	16	26

Finally, participants were asked about friends or family referral methods into HHPALS. There was strong support for information on how to refer someone else and details to share with the other person. Again, the support for a gift voucher for each referral was weaker than other referral aspects.

Participants were asked for their views on the value of the gift voucher offered for each referral. There were a variety of opinions on the value, with 14 believing low to moderate amounts of \$10-\$30 and four suggested higher amounts of \$50-\$100 were appropriate. Reasons for the voucher were related to it being a way to support behaviour change, show appreciation, and, in some cases, cover the time investment of involvement.

*Gift voucher would depend on individual circumstances. \$25 is a nice gesture.*

(Female, 66, AUDIT 9)

*Anything under \$20 doesn't feel hugely valuable but maybe not sustainable. Maybe a partnership or discount voucher or something would also be worth considering?*

(Female, 38, AUDIT 17)

## **Chapter 4. Discussion**

### **Key Findings**

#### ***Impact of Brief-Intervention***

This exploratory study primarily investigated the impact and acceptability of the Alcohol Habit Hacker PALS (HHPALS) as a brief internet-delivered intervention aimed at individuals with mild to moderate Alcohol Use Disorder (AUD). The investigation revealed the considerable efficacy and practicality of HHPALS as an online intervention, supplemented with social support from goal coaches. From 395 initial website visitors, 86 individuals completed the baseline survey, consenting to participation in the study. Of these 86 individuals, participants primarily consisted of middle-aged, employed females of New

Zealand European or Māori descent, 64% of whom displayed signs of alcohol dependence. The intervention demonstrated efficacy marked by significant reductions in AUDIT-C scores ( $d = 1.099$ , 95% CI [0.736, 1.454]) and overall alcohol consumption ( $d = 0.957$ , 95% CI [0.61, 1.29]). Participants also experienced decreased frequencies of alcohol consumption and cravings, coupled with enhanced self-efficacy in resisting alcohol and improved self-regulation of alcohol consumption.

HHPALS was enriched through the inclusion of social support provided by goal coaches, who fostered a supportive environment and facilitated participants along their journey toward their alcohol reduction goals. The secondary objective of this study was to evaluate the feasibility of this method of social support and the impact of goal coaches on intervention engagement, study retention, and follow-up rates. Remarkably, 75.5% of participants actively engaged with the HHPALS website. Log-in rates were higher among females compared to males and those with a higher level of education. Interestingly, high log-in rates were most prevalent in participants with lower levels of coping. Of the participants who engaged with the website, an average of 3 plans were created per participant, and 70% of participants set their own goals.

### ***Social Support from Goal Coaches***

Many participants found the presence of a coach and their consistent encouragement, communication, and support crucial in providing the guidance and motivation needed for adhering to their alcohol goals and plans. However, some also felt the need for more personal interaction and accountability from their coach.

The retention rate for this study was calculated as 56%. Maintaining high study retention and follow-up rates for internet-delivered alcohol reduction interventions has proven challenging, with previous studies noting rates as low as 20% (Crane et al., 2018;

Cunningham et al., 2010; Gainsbury & Blaszczynski, 2011; Rodda & Lubman, 2014; Vangrunderbeek et al., 2022), this study has the potential to improve this result by increasing support systems, direct communication, and accountability. A lack of direct communication and accountability may have dissuaded participants from continuing the study, resulting in low retention rates. From these findings and participant feedback, it is clear that the coaches cultivated a supportive and encouraging environment, marked by the high levels of intervention engagement. However, amendments in terms of accountability and communication need to be made to improve study retention.

### ***New Year's Resolution Challenge***

The HHPALS New Year's Resolution Challenge was helpful for some; however, other participants noted that societal and professional pressures related to alcohol consumption made sticking to their goals challenging. The New Year's start was largely supported by participants, who appreciated the opportunity it provided for a 'fresh start' in the year. Commencing on the 1st of January 2023, the timing was favourable for some, resonating well with innate tendencies towards goal and resolution-setting for the new year. This transition into a new year was symbolically powerful, bolstering participants' commitment to reducing alcohol intake by aligning the challenge with their intrinsic motivations and aspirations for positive change.

However, the New Year's start proved difficult for many of our younger participants, who were more affected by external influences such as weather and social commitments. The HHPALS New Year's Resolution Challenge commenced during the latter end of the holiday season and coincided with our New Zealand summer. Consequently, there was a higher proportion of social gatherings, celebrations, and opportunities to consume alcohol. One participant noted that poor weather aided their journey as it resulted in the cancellation of

camping trips and other events that would have brought about countless temptations. When faced with social gatherings, many participants found it easier to conform to the normative behaviours of engaging in alcohol consumption as opposed to drawing attention to themselves. This was a powerful learning opportunity for participants as they were made aware of how intertwined alcohol is in New Zealand culture.

Interestingly, the high levels of intervention engagement were driven by employed, middle-aged females who also experienced the most beneficial outcomes. It is difficult to say whether the high levels of middle-aged engagement were a result of an increased likelihood to engage in solitary, domestic alcohol consumption as compared to our younger participants or if the website engagement was driven by intrinsic motivation. Our acceptance of alcohol consumption in social settings may alter how we view it, making it seem less harmful or dangerous than drinking at home or alone. This may have influenced the way younger participants viewed the degree of their alcohol problem, thus reducing the urgency or motivation to engage with the intervention and make changes.

### **Improvements for Future Programme Iterations**

The resources, strategies, and particularly the coach's role were highlighted as strong aspects of the program. However, there is room for improvement in technology usability, content personalisation, and enhancing social support. The timing of the program (New Year) was mostly seen as beneficial, aligning well with participant's intrinsic goal-setting tendencies, despite some external challenges influencing participants' engagement.

#### ***Improving Social Support: Peer Facilitation***

Multiple techniques for increasing engagement with internet-delivered interventions have been investigated, and researchers propose integrating personal interactions to address engagement and retention difficulties (Cavanagh, 2010; Marks & Cavanagh, 2009).

Participant engagement is a significant challenge for online interventions, which this current study aimed to mitigate by providing social support through goal coaches. Social support increases the efficacy of alcohol reduction interventions due to improved treatment engagement, a sense of accountability and increased self-efficacy (Guraya & Abdalla, 2020; Hernandez Colinir et al., 2022; Mohr et al., 2011; Possemato et al., 2019; Satinsky et al., 2021; Tracy & Wallace, 2016).

Feedback and results from participants in this current study suggest that while the goal coaches were integral to their success, some found the level of support provided by the coached to be lacking. Chinman et al. (2014) concluded from a review of 20 studies that incorporating peers, defined by the authors as individuals who have lived with and successfully overcome mental illness and are willing to help others who are currently suffering from it, to existing clinical services increased treatment engagement, motivation, social functioning, and quality of life. Peers can provide social support for alcohol reduction through a variety of methods, including peer support, peer providers, peer social networks, peer groups, and peer facilitation (Evetts et al., 2021; Gormley et al., 2021; Guraya & Abdalla, 2020; Hernandez Colinir et al., 2022; Satinsky et al., 2021). Most of the research on social support within the addiction field has focused on people in recovery providing help or guidance to those attempting to change (Gormley et al., 2021; Kelly et al., 2020; Satinsky et al., 2021). Interestingly, it was noted that HHPALS participants from this study did mention that support offered by someone with lived experience would be highly beneficial, especially for providing ‘in the moment’ support for temptations and urges. Multiple participants from this study noted that support could be offered by anyone who has struggled with alcohol or similar life experiences. However, there was also a view that peer support could originate from anywhere, including friends or co-workers who wanted to cut back. Support from someone close to you may be the best solution for ‘in the moment’ needs, staying motivated,

and having someone to talk to. It may also alleviate the fear of judgment. Nevertheless, introducing peer facilitation as a form of social support will likely increase engagement and reduce attrition, aiding recovery (Mohr et al., 2011).

A mutual or reciprocal peer support system is a form of peer facilitation in which individuals simultaneously receive and provide support. In this approach, individuals with share similar challenges, and assist each other by taking on both roles of receiving support and providing support interchangeably, creating a mutually beneficial relationship. This model recognizes that everyone involved has valuable insight and knowledge to offer. Because support flows in both directions, there is an increased sense of equality and empowerment experienced through collaboration to address their common needs. This peer facilitation approach has shown promise in other areas, such as education, but is yet to be explored in the addiction field (Fuchs et al., 1999; Guraya & Abdalla, 2020; Sáenz et al., 2005). Peer facilitation may improve accountability and engagement with internet-delivered interventions, but this is yet to be determined.

Integrating peer-delivered support into HHPALS may tackle aspects of constructive criticism raised by participants as it will increase social support, direct communication, and accountability, improving engagement and retention. Not only will this method improve outcomes for participants, but it is possible that peer facilitators may experience even greater outcomes due to increased levels of ‘mattering’. The concept of ‘mattering’, defined by Rosenberg and McCullough (1981), refers to how much value, significance, or importance someone perceives themselves to have in the eyes of themselves and others. Mattering is closely linked to self-esteem and is a vital component of well-being (Flett et al., 2023; Rosenberg & McCullough, 1981). Flett et al. (2023) linked a low perception of mattering to increased tendencies toward depression, risky behaviours, and excessive social-media, alcohol, and drug consumption. Rayle (2006) discussed the importance of mattering to others: the essence



of knowing that someone depends on you, such as a child to their parents, increases our self-perception of how much we matter, as we can offer them something that others cannot.

### ***Improving Social Support: Peer Facilitator Training***

During the post-intervention survey, participants were encouraged to identify necessary steps for someone who would like to take on a peer-facilitator position, with overwhelming support for peer-facilitator training as a pre-requisite.

In order to guarantee the best outcomes for peer facilitators and other participants, peers should require some form of peer orientation or training, particularly in this instance, as they will be working closely alongside individuals with AUD. Training will also ensure that peers are familiar with the intervention, components, and ways the intervention and associated skills may be relevant to their problems, clarifying expectations about potential outcomes, providing technical support, and helping with planning or scheduling interactions with the intervention protocol (Cavanagh, 2010; Marks & Cavanagh, 2009). Peer facilitator training packages should be established for peer facilitators, ensuring that each facilitator is taught how to use their lived experience correctly to aid and guide their team. The training packages should be developed using a combination of evidence-based methodologies assembled from comprehensive literature research and first-hand information offered by clinical psychologists.

### ***Improving Social Support: Development of Peer Facilitator Training***

Peer facilitators or other peer support providers are typically individuals trained to use their lived experiences to guide others on their paths to recovery (Possemato et al., 2019). Chinman et al. (2014) demonstrated that involving peers in existing clinical services increased treatment engagement, motivation, social functioning and quality of life. Therefore, a peer facilitator training package for the current HHPALS intervention must ensure

facilitators can use their lived experience to help and guide their team (see Appendix D for a proposed training package). Interestingly, there was a view that peer support can be offered differently according to the individual needs and preferences of the person offering and receiving support. This may be hard to achieve if facilitators are unknown to their teams, but it may come quickly for facilitators participating with family or friends. This considers that everyone has a unique journey and set of needs, so to guarantee the best outcomes for facilitators and participants, they must maintain autonomy and personalise the support they receive and give.

### ***Improving Referral, Engagement, and Retention Rates: Recruitment Incentives***

Peer facilitators could be enlisted to recruit participants to increase the study's population size and improve participant engagement and retention within the study. Participants were asked for their views on providing gift vouchers to participants or facilitators for each new participant they referred to the study. Offering a voucher is a way to support behaviour change, show appreciation, and, in some cases, cover the time investment of being involved. There were various thoughts on the value, with most participants agreeing that an amount between \$10-\$30 would be sufficient, although a few suggested higher amounts between \$50-\$100. Giving monetary vouchers for participant referrals may increase participant turnout, but it may not be sustainable. The suggestion of providing a discount code may be worth exploring as it could aid in reducing the number of participants who are solely referred for the gift voucher.

### ***Improving Referral, Engagement, and Retention Rates: Respondent-Driven Sampling and Peer Facilitation***

Another method to recruit participants to the study would be to implement respondent-driven sampling (RDS), a snowball or chain-referral sampling technique

introduced in 1997 by Heckathorn and has since been employed in over 120 studies and several countries (Heckathorn, 1997, 2011). Naderifar et al. (2017) describe the traditional snowball sampling method as a method of convenience. Typically, this method is implemented to reach subjects who are not easily accessible. However, this technique could be intentionally applied so participants will have a network of friends or family to engage with, increasing factors such as social support, peer networking, and accountability. A further distinction between this strategy and typical snowball sampling methods is that it stops soliciting individuals before data saturation (Heckathorn, 2011; Naderifar et al., 2017). Traditional snowball sampling techniques involve recruiting group x, who are asked to recruit people they know who fit the eligibility criteria. Group x recruits group y, which recruits group z, and so on, until data saturation is reached. Like a snowball grows with each roll through the snow, the study's sample grows with each subgroup.

Using the respondent-driven sampling strategy, each facilitator could refer 2-3 friends or family members to the study. In order to avoid excessive recruiting and reaching data saturation, the study should aim to stop recruiting in group y, the second group of subjects. Peer facilitators, group x, will refer 2-3 friends or family members, group y, to the study. Thus, recruitment will stop at group y, which cannot further enlist participants. Employing this sampling method can ensure that participants will have a network to engage with, increasing factors such as social support, peer networking, and accountability.

### ***Improving Referral, Engagement, and Retention Rates: Additional BCTs***

HHPALS used behavioural change strategies to develop the intervention content and BCTs to deliver the intervention. These BCTs included Social Support, Goal Setting, Action Planning, Coping Planning, and Feedback on Outcomes of Behaviour. However, in an effort to increase participant engagement and retention, improving on aspects of Social Support and

incorporating Feedback on Assessment and Social Comparison into the existing BCTs may be beneficial. Tables 15 below describes and explain how Social Support can be enhanced and how Feedback on Assessment and Social Comparison could be integrated into the intervention (Kwasnicka et al., 2016; Michie et al., 2013; Samdal et al., 2017).

Table 15: Potential BCTs to be incorporated into HHPALS

<b>BCT</b>		<b>Description and Details for HHPALS</b>
Social Support	Description	Social support emphasises the importance of friends, family, treatment staff and other trusted individuals to advise, arrange, and occasionally deliver practical help for behaviour performance (Michie et al., 2013). Social support increases adherence to treatment due to accountability, making the treatment more effective and eliciting sustained behaviour change. This technique is largely practical compared to the others listed below.
Social Support	HHPALS Specific Description	Participants receive support on goal setting, action plans and coping plans from their goal coach via the in-website goal/plan-specific messaging feature. The coach does not need to provide counselling and should actively avoid the righting reflex (Levensky et al., 2007). Participants in this study will also be accompanied by their peer facilitator or 'buddy' who will act as another level of social support. Participants are encouraged to stay connected with their group and facilitators using their chosen avenue (e.g., group chat, Facebook group). This activity occurs outside the HHPALS programme and thus will not deliver any intervention content. Both the presence of a goal coach and peer facilitator and incorporating a group/buddy system will increase the likelihood of treatment adherence due to accountability (Michie et al., 2013).
Feedback on Assessment	Description	This technique refers to feedback provided to participants from the data collected during their screening or assessments (Rodda, Hing, et al., 2018). Feedback is often a summary of the collected data (e.g., alcohol severity) reported against a standard data point (e.g., cut-off score for problem drinking). However, this does not involve any social comparison.
Feedback on Assessment	HHPALS Specific Description	Participants receive immediate personalised feedback on their baseline assessment. Feedback on scores will be presented based on alcohol amount, alcohol consumption frequency, motives for drinking, well-being, and self-efficacy. Feedback will be delivered in a one-page report at the end of the baseline survey on Qualtrics so participants can see their responses before being directed to the HHPALS website. This report can be saved or printed off, and we will encourage participants to use it to guide their alcohol consumption goals.

Social Comparison	Description	This technique compares data from one individual to data collected from others. This comparison draws attention to the individual's score or performance and highlights any meaningful patterns or discrepancies, evaluating the individual's standing compared to others (Michie et al., 2013). An example of a planned and meaningful comparison would be the amount of alcohol consumed by an individual compared with social groups such as geographical location, gender, and age (Rodda, Booth, et al., 2018; Rodda, Hing, et al., 2018).
Social Comparison	HHPALS Specific Description	Participants will receive personalised normative feedback (PNF) on alcohol amount, alcohol consumption frequency, motives for drinking, well-being, and self-efficacy. Feedback will be delivered in a one-page report at the end of the baseline survey on Qualtrics so participants can see their responses compared to national averages and recommended values before being directed to the HHPALS website. This report can be saved or printed off, and we will encourage participants to use this report and the comparisons to guide their alcohol consumption goals.

### ***Improving Referral, Engagement, and Retention Rates: Additional Measure***

Another way to measure website engagement and additional items would be to utilise Google Tag Manager. Google Tag Manager is an online extension measuring website data such as clicks, views, and engagement. This extension can also measure the average time viewers stay on the site and the most common time individuals interact with the website. This data could provide helpful insight into the most and least viewed strategies, allowing further content improvement.

### ***Improving Challenge Preparation***

When designing the challenge, the importance of preparation was overlooked, and unfortunately, preparation was deemed vital to participants and closely linked to participants' perceptions of their own achievement. The lack of preparation was seen as a barrier to fully engaging in the challenge.

The delivery of this intervention coincided with the holiday season and presented substantial operational challenges. During this time of year, it is difficult to acquire and

maintain staff to assist with the intervention due to holiday closures. As a result, only the author of this thesis was available to assist in goal setting and plan development. Participants were encouraged to set goals and develop plans prior to the 1st of Jan, the start of the challenge, so they had their coping plans finalised and ready to refer to as needed. If participants chose plans involving alcohol substitutes, finalising their plan before the start of the challenge meant they would have been able to acquire all of the necessary ingredients for their mocktails or any 0% beverages before the New Year.

However, a substantial proportion of participant enrolments coincided with Christmas, posing a challenge. In order to effectively mitigate this issue in future iterations of the HHPALS programme, it is recommended that enrolment in the challenge closes by December 28th or 29th, ensuring participants are afforded ample preparation time.

### ***Improving Intervention Accessibility and Usability***

Participants' feedback regarding improving the intervention mainly revolves around technology enhancement, improved goal-setting tools, and content personalisation.

According to several participants, a smartphone application is vital for easier access, navigation, and considerable improvements in content and activity delivery. If HHPALS were to be transformed into a smartphone application, users could complete a small survey when they create their account to determine which strategies and activities are most aligned with their values, personality, and goals and, thus, most likely to be successful. Goal setting can also be significantly improved by incorporating a visual tracker that allows users to follow their progress towards their goals readily. The HHPALS website included a plethora of activities. However, it could not allow activities to be completed. Instead, participants were encouraged to print or complete the activities in a diary. A smartphone application

would allow completing activities such as gratitude entries, customisable budgeting sheets, and daily alcohol tracking.

Unfortunately, the usability of the HHPALS website posed challenges for several participants, compounded by exclusive access through online means. This means that participants accessed the website with either a computer or a mobile internet browser, adjusting the website's format to accommodate the smaller screen size. Furthermore, participants can only access the website with the correct link (which was attached to all emails, including check-ins), forcing participants to sift through their inbox to log in, or they would need to save the link as a bookmark. Including these additional processes may have dissuaded a significant number of people, particularly when combined with the poor usability of the website. An application would improve accessibility and usability by reducing the number of clicks required and making it easier to find on a device that is seemingly always with us. This application can also be utilised for other behaviour change goals, such as smoking cessation.

### **Barriers to Peer Facilitation**

The study identified several barriers to effectively implementing peer facilitation in the future. A notable challenge is the feasibility of obtaining referrals from peer facilitators. As alcohol problems grow, social networks and relationships tend to shrink. The longstanding stigma associated with help-seeking and admitting you have a problem may further impede the referral process, as concealing AUD is a far more appealing option. Furthermore, AUD severity will be highly variable among participants, requiring unique levels of support, again obstructing the mutual support concept.

Feedback from participants highlighted a preference for peer support from individuals who have successfully navigated through the HHPALS program, meeting and maintaining their goals. This emphasises the need for facilitator training and providing a possible solution to the post-intervention ‘what now’ question. A participant posed the question, “What now?” seemingly lost and unsure where to go. Participants who have completed the HHPALS programme and have been able to maintain their alcohol reduction goals could be offered the opportunity to return as peer facilitators. Essentially, they will now move up a level, complete the facilitator training and be able to provide support and encouragement to their teammates, grounded in their own lived experience.

Aligning peer facilitation with broader, community-wide alcohol reduction initiatives might serve to diminish associated stigmas, increasing the likelihood of help-seeking and opportunities for better AUD services.

## **Variations in Engagement Across Different Demographics**

### ***Socially Accepted Culture of Intoxication, Particularly Among Young Adults***

This intervention was viewed positively by most participants, and it offered a plethora of resources and strategies that could be practically implemented. However, for younger, more socially active participants, implementing their plans proved challenging as they were regularly engaged in social events and often tempted by opportunities to consume alcohol.

Within this current study, participants noted that abstaining from alcohol in social settings proved difficult due to New Zealand’s socially accepted culture of intoxication. Alcohol marketing is in abundance, and consuming alcohol when socialising is the expected norm, a common theme picked up across many New Zealand alcohol-related studies and reports (Alcohol-Advisory-Council-of-NewZealand, 2004, 2005; Kersey et al., 2022; Lyons



et al., 2014; McEwan et al., 2010). The growing liberalisation of alcohol in terms of advertising, branding, sponsorship, and alcohol-centred hospitality only adds to the normalisation of alcohol consumption and intoxication within our society. Alcohol advertising regulations have continued to ease over time, employing various mediums such as TV and radio adverts, printed posters and billboards, and across the internet and social media (Alcohol-Advisory-Council-of-NewZealand, 2004). Alcohol branding is everywhere, including sponsorships of sports teams, such as Steinlager sponsoring the All Blacks or Tui beer's far-reaching 'Yeah Right' billboards and TV ads. It was estimated that more than 50 million dollars was spent by the New Zealand alcohol industry (on both advertising and sponsorships) in 2008 (McEwan et al., 2010).

Alcohol advertising often presents drinking as a positive activity that is relaxing, fun, and sophisticated. Many adverts are also heavily sexualised. This misleading depiction of alcohol preserves existing drinking norms and encourages positive attitudes toward drinking and an alcohol-rich lifestyle. By presenting alcohol consumption as a meaningless and overall positive activity, alcohol-related harms are ignored (Kersey et al., 2022). The overwhelming presence of alcohol advertising, sponsorship and branding is likely to increase the risk of underage drinking and increase the difficulty of reducing your alcohol consumption at any age. Additionally, with social media platforms like Facebook, Instagram and TikTok, in which users maintain connections with others, sharing updates and life stories through photos and videos, there is enormous pressure to brand yourself in a way that aligns with your immediate society. When considering New Zealand's binge-drinking culture of intoxication, it makes sense that social media users will post images or videos of their alcohol-rich lifestyle to demonstrate personable, fun, laid-back, and other socially desirable aspects of their personality—again, promoting a positive alcohol-rich-lifestyle, celebrating intoxication, and increasing the difficulty to abstain from alcohol.

Interestingly, Lyons et al. (2014) noted that there is a typical pattern within New Zealand's alcohol consumption. Weekday alcohol consumption was predominantly domestic, occurring at home or other residential properties with the goal of unwinding. Alcohol consumed over the weekend was primarily at commercial premises in which the main objective was to 'get wasted' and drink to inebriation. The act of drinking to intoxication is a widespread goal of a night out, with one in ten consumers admitting to drinking to get drunk, and this behaviour is socially acceptable as long as it is not an everyday occurrence (Alcohol-Advisory-Council-of-NewZealand, 2005; Kersey et al., 2022; Lyons et al., 2014; McEwan et al., 2010). Additionally, wine has a multifaceted role in our society. Charters (2006) describes its association with sophistication, social and cultural contexts, religion, philosophy, lifestyle, food, and art. Moreover, studies that suggested potential health benefits, such as reduced cardiovascular disease risk, only increased its popularity (German & Walzem, 2000; Guilford & Pezzuto, 2011). Wine's status as a symbol of prestige and popularity makes wine consumption prevalent and hard to avoid.

### ***Better Outcomes for Older Female Participants***

The intervention produced positive results for most participants, especially true for older individuals who, on average, were less engaged in social activities and often lived alone. The increased availability and accessibility of alcohol to women can be attributed to shifts in social and economic equality, together with the relaxation of social and policy limitations pertaining to the promotion and sale of alcoholic beverages (Kersey et al., 2022; McEwan et al., 2010). The increasing trend towards feminisation in product development and marketing endeavours to appeal to the rising market, establishing an encouraging and unrestricted alcohol culture for women (Kersey et al., 2022).

Many New Zealand middle-aged women would have grown up in this culture. Therefore, an alcohol-rich lifestyle would be highly normalised. Kersey et al. (2022) indicate that research conducted in New Zealand demonstrates that drinking behaviours tend to remain relatively consistent throughout the individual's lifespan. Consequently, a significant number of women in the middle stage of their lives may persist in incorporating alcohol into their daily routines, preserving similar patterns of consumption they developed in their early 20s, and perceiving it as socially accepted and normalised.

With age, trends in global alcohol consumption appear to remain fairly stable or slightly reduced. However, this is not the case for all. Aging introduces a multitude of changes to an individual's health, lifestyle, family, responsibilities, professional positions, and sources of support. In addition, it is also likely that aging is accompanied by stress, loneliness, physical pain, loss of mobility, and, consequently, diminished independence (Singh & Misra, 2009). All of these factors can cause or worsen pre-existing alcohol issues. Drinking at home, often at the end of the day, is described as a means to 'wind down' after work, creating an escape from other obligations (Gronkjaer et al., 2020; Kersey et al., 2022). Middle-aged women attribute their drinking to stress, using alcohol to cope with life and abscond external hardships such as financial insecurity, loneliness, employment, and more. Physiological changes that come with age put older adults at increased risk of alcohol related health issues and injuries, presenting a convincing case for alcohol reduction.

Many HHPALS participants live alone, and some struggle to be abstinent on their own. Participants stated that they need to be more cautious when they are alone and actively spend time with others, particularly those who support their sobriety. It is possible that as life stressors increase, social engagement and relationships decline, and free time or boredom increases due to physical pain, illness, or retirement - middle-aged and older women may

struggle more with their drinking since their drinking is not as excessive and episodic as the younger individuals. However, it has become more ingrained in their daily routine.

## **Policy Implications**

The study's findings emphasise the importance of communal and sociocultural initiatives in alcohol reduction interventions. Policies should consider techniques that promote strong community bonds and interpersonal relationships. This approach aligns with the Māori health paradigm, Whare Tapa Wha, which emphasises social interconnection and plays a vital role in our overall well-being by promoting sentiments of mattering. Policymakers and healthcare providers should explore community-based peer facilitation or collaborative group-based intervention programmes for mild to moderate AUD patients while making the programme available to the general public.

Furthermore, the study implies that comprehensive strategies that address broader societal and economic factors of alcohol consumption are required. Heavy drinkers purchase cheap alcohol and will often purchase their goods later than average alcohol consumers (Casswell et al., 2016; Casswell et al., 2014). Policymakers should explore restricting alcohol marketing and decreasing accessibility by limiting the hours that alcohol can be sold, reducing the number of liquor stores, restricting the sale of alcohol in supermarkets, and imposing an alcohol tax to reduce affordability. Alcohol pricing should regularly be adjusted to account for changes in minimum age. Overtime, these measures will challenge societal norms and gradually de-normalize alcohol.

Policymakers must collaborate with local communities to develop strategies that resonate with each group and reflect the multifaceted realities, societal pressures, and specific challenges faced by different demographic groups, such as younger participants and middle-aged women. Overarching social and institutional factors, such as stigma and the social

contexts of alcohol consumption, must be addressed in order to develop effective health promotion initiatives. The study's policy implications call for a more nuanced, culturally sensitive, and multidimensional approach to alcohol reduction programmes and interventions. Fostering comprehensive and effective alcohol reduction initiatives and policies.

## **Conclusion**

In conclusion, this study achieved significant reductions in AUDIT-C scores and overall alcohol consumption rates, along with an improved perception of self-efficacy in resisting alcohol impulses. The goal coaches played a crucial role in enhancing the intervention's effectiveness and fostering participant engagement. However, initiating the HHPALS challenge in the New Year presented challenges due to the holiday season and increased social gatherings. To enhance user experience and engagement, this study suggests the need for technical enhancements, improved social support mechanisms, and personalised content. Additionally, the inclusion of peer facilitation emerges as a promising approach. Overall, this study calls for a collective call to action to create a more responsive, supportive, and sustainable environment for individuals navigating alcohol reduction and recovery.

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# Appendices

## Appendix A. Participant Information Sheet and Consent Form

### *Participant Information Sheet:*



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Auckland, New Zealand  
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**MEDICAL AND  
HEALTH SCIENCES**

Social and Community Health  
School of Population Health  
University of Auckland  
Auckland, New Zealand  
P: 64 9 373 7599 ext. 86557  
E: [d.newcombe@auckland.ac.nz](mailto:d.newcombe@auckland.ac.nz)

### **PARTICIPANT INFORMATION SHEET**

**Project Title:** A pilot and feasibility study of Habit Hacker PALS

**Name of Principal Investigator:** Dr Simone Rodda

**Name of Co-Investigator:** Dr David Newcombe

**Name of Student Researcher:** Miss Sarah Oommen

#### **Researcher Introduction**

This research is led by Dr Simone Rodda, an Associated Professor at Auckland University of Technology, School of Psychology and Neuroscience. Co-investigators include Dr David Newcombe (Head of the Faculty of Medical and Health Sciences, Social and Community Health at The University of Auckland, New Zealand) and MPH student researcher Miss Sarah Oommen. The study was funded by Ember Korowai Takitini.

#### **Project Description and Invitation to Participate**

Habit Hacker PALS is online support based on real life experience of alcohol reduction. The program offers strategies for change based on what other people say works. It delivers easy to use techniques to set goals and make plans so that you can achieve your alcohol reduction targets. This round of recruitment is intended to support New Year resolution for reduced alcohol use in 2023.

Researchers at the University of Auckland seek up to 100 participants to test the impact of a new Habit Hacker PALS for alcohol reduction.

To participate, you should be ready to reduce your alcohol consumption for 28 days and be willing to complete a follow-up evaluation 4 weeks after you start the study. Participation in the study is entirely voluntary and open to all adults in New Zealand.

### **Project Procedures**

Participation in this study involves the completion of two online questionnaires. The first questionnaire is at recruitment, and the other will be at 28 days. These questionnaires will ask questions relating to your alcohol consumption, motives for drinking and your overall wellbeing. The follow-up questionnaire will also include an opportunity to provide feedback on the study.

Immediately after the first questionnaire, you will receive a link to the Habit Hacker PALS website. Login is simple and should be done straight away. Here you will restate your goal and make plans to support you in alcohol reduction. You will have a goal coach who will provide feedback on your goals and plans. Overall, we estimate that the total time for completing the questionnaires and using Habit Hacker PALS will be approximately two hours. To thank participants for their contribution to the research, each will receive a \$25 voucher at the 28-day evaluation.

The benefit of this study is access to a new program that could help with alcohol reduction. Your experience will help us improve the program, which may help other people who want to reduce alcohol consumption. The findings will be available at [www.changestrategies.ac.nz](http://www.changestrategies.ac.nz) and our social media page when the study has concluded. If you experience distress or feel unwell during the study, then let your coach know straight away or call Healthline in NZ on 0800 611 116.

### **Data Storage and Confidentiality**

Data will be collected via Qualtrics software and stored in New Zealand. Your data will be encrypted and allocated a unique identifier. This means that your name or contact details will be stored separately from any other data you provide. Your consent to participate will also be stored separately from the research data and be accessible to only study researchers. Your identity will remain confidential outside of the study researchers, and any reporting will be done in a way that does not identify you as the source. Digital data from this study, along with your completed consent form, will be stored in a protected location on the University of Auckland server. Your data will be stored indefinitely, and your consent form retained for six years.

### **Right to Withdraw from Participation**

Participation is entirely voluntary, and you can withdraw from the study at any time without giving a reason. Furthermore, you can withdraw yourself and any data you have provided for this study up until the 15<sup>th</sup> of March 2023. To withdraw, participants can email Sarah Oommen at [sarah.oommen@auckland.ac.nz](mailto:sarah.oommen@auckland.ac.nz).

### **Contact Details**

If you have any questions, concerns, complaints or require further information about the study, please contact Dr Simone Rodda, on [simone.rodde@aut.ac.nz](mailto:simone.rodde@aut.ac.nz) or 64 9 921 9999 ext. 29079. You can also contact the Head of the Department of Social and Community Health, and Co-Investigator, Dr David Newcombe, on [d.newcombe@auckland.ac.nz](mailto:d.newcombe@auckland.ac.nz) or 64 9 373 7599 ext. 86557.

### **UAHPEC Chair Contact Details**

For any queries regarding ethical concerns, you may contact the Chair, The University of Auckland Human Participants Ethics Committee, Office of Research Strategy and Integrity, The University of Auckland, Private Bag 92019, Auckland 1142. Telephone 09 373-7599 ext. 83711. Email: [humanethics@auckland.ac.nz](mailto:humanethics@auckland.ac.nz)

This research is approved by the University of Auckland Human Participants Ethics Committee on December 9th, 2021, for three years. Reference Number UAHPEC23654.

***Participant Consent Form:***



**MEDICAL AND  
HEALTH SCIENCES**

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Auckland, New Zealand  
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**PARTICIPANT CONSENT FORM**

THIS FORM WILL BE HELD FOR A PERIOD OF SIX YEARS

**Project Title:** A pilot and feasibility study of Habit Hacker PALS

**Name of Principal Investigator:** Dr Simone Rodda

**Name of Co-Investigator:** Dr David Newcombe

**Name of Student Researcher:** Miss Sarah Oommen

I have read the Participant Information Sheet, have understood the nature of the research and why I have been selected. I have had the opportunity to ask questions and have had them answered to my satisfaction. Specifically, I understand and agree to each of the following:

- I agree to take part in this research.
- I will complete the initial online questionnaire at enrolment and complete the follow-up questionnaire after 28 days.
- I am free to withdraw from participation at any time and to withdraw any data traceable to me up until 15th of March 2023
- I have been given a copy of the Participant Information Sheet to keep. The researcher has agreed not to reveal my identity and personal details, including where information about this project is published or presented in any public form.

By selecting the appropriate electronic checkbox below, you are agreeing to take part in this research and will immediately begin the initial questionnaire.


- I agree to participate in this study.
- I do not agree to participate in this study.

This research is approved by the University of Auckland Human Participants Ethics Committee on December 9th, 2021, for three years. Reference Number UAHPEC23654.

## Appendix B. Images of The Alcohol Habit Hacker PALS Website

### Home Page

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 change strategies project

[HOME](#) [MODULES](#) [ABOUT US](#) [SUPPORT SERVICES](#) [LOG IN](#) [SIGN UP](#)

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[ALCOHOL HABIT HACKER](#) [How To Use This Site](#) [My Plans](#) [Make Your Plans Work](#)

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### Alcohol Habit Hacker PALS – NEW YEAR CHALLENGE


**Welcome to Alcohol Habit Hacker Pals:**  
A New Year Challenge to Reduce your Alcohol Consumption

Habit Hacker PALS is an innovative 28-day programme to help develop new habits for alcohol reduction. **To use the website, follow the two steps below:**

1. Set a goal and motivation in the "My Goals" module.
2. Make a plan in the "Take Action" module or in "Extra resources".

There are hundreds of resources on getting motivated, overcoming barriers, tackling triggers, and building confidence.

If you're not sure how to get started, the most popular strategies are ["Alcohol Swaps"](#) and ["Just Say No"](#). **Get started and create your own personal Plan.**



### Modules (also on Homepage)



### My Goals

Setting a goal is an important part of making a change that lasts. If you are the person who drinks, you may have decided that you want to drink less often. Your goal might be to address your alcohol intake and start to take control over your drinking.

[Choose this approach](#)



### Take Action

Taking action means using behaviour to move yourself towards your goals. Reducing drinking isn't a passive process. This module includes strategies that provide guidance on active steps you can take to meet your alcohol reduction goals.

[Choose this approach](#)

## EXTRA RESOURCES



### Motivation Matters

This strategy is for people who have been working on a change for some time and are experiencing a dip in motivation. The good news is there are some simple methods to kick-start your progress again.

[Choose this approach](#)



### Barrier Busters

Getting stuck in a rut or losing motivation are common barriers. Getting stuck can mean it is difficult to move forward. This toolkit has a bunch of great options for getting out of the rut. These tools might also be helpful if you've been stuck for a while and nothing is working.

[Choose this approach](#)



### Trigger Tackler

Trigger tackler can be helpful if you need to up the ante on your personal programme. It helps to address the high-risk situations. This tool requires a bit more work than the other tools and will ask you to push yourself and think about why you really drink. The answers you provide will help you to develop your own personal trigger tackler plan.

[Choose this approach](#)



### Confidence Builder







Resilience is one of the strongest tools for building confidence. Resilience is the ability to cope with difficult situations and to recover from hardships. This does not mean that the problems disappear. Rather, it is the ability to cope with it and move past it faster. Everyone has some resilience, and everyone has the ability to build it up.

[Choose this approach](#)

## Take Action

Taking action means using behaviour to move yourself towards your goals. Reducing drinking isn't a passive process. This module includes strategies that provide guidance on active steps you can take to meet your alcohol reduction goals.




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 Avoid Alcohol	 Manage Urges	 Future Focused	 Stay in Control
 Wellbeing	 Get Support		

## Wellbeing

One of the most common reasons for wanting to change your drinking habits is to improve your well-being, whether it be your mental or physical well-being. Working on strengthening both your mind and body will not only improve your physical and mental capabilities but will also improve your overall quality of life.

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 <b>Body Matters</b> Focussing on physical well-being is a great way to prepare your mind and body when looking to change drinking habits. <a href="#">Read more</a>	 <b>Mind Matters</b> There are a few simple tricks to improve one's mood; these can be done alone or with other people. <a href="#">Read more</a>	 <b>Stress Busters</b> This can be useful for dealing with stress related to alcohol or the general stress that can arise from any number of things. <a href="#">Read more</a>
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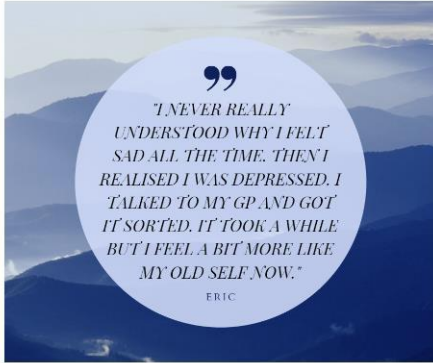


## Mind Matters

Feeling down can affect people's ability to stick to their plans and goals. This is because feeling down can distract and drag attention away from what people want to focus on. There are a few simple tricks to improve one's mood; these can be done alone or with other people. Some people find that mood matters require a bit of external expert advice.

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### What is a Depressed Mood?



Being unhappy isn't the same as being depressed. Depression is a term often used loosely to describe how we feel after a bad week at work or when we're going through a breakup. But major depressive disorder – a type of depression – is much more complicated. There is also 'depressed mood' which is a milder version of depression, that can also get in the way of our plans and goals. Determining if persistent, unshakable dark feelings are due to depression can be the first step toward healing. There are specific symptoms that determine whether it's depression or the sadness we all experience in life. Have a look at the common signs of depression and see if you have a mild version of any of these symptoms.

### Relationship Between Depression and Alcohol

#### Alcohol is a Depressant

The morning after drinking is the most obvious time that alcohol affects mental health, especially if you drank too much the previous day. Why is this? Alcohol is a depressant which affects your brain's natural level of happiness chemicals like serotonin and dopamine. This means that although you'll feel an initial 'boost' when drinking, the next day you will be deficient in these same chemicals, which may lead to feeling anxious, or depressed.

#### Hangovers are Really Tough on Your Health

You can begin to feel low from the physical effect of a hangover, including tiredness, headache, sensitivity to light, dehydration and bad breath. It can also include trembling (caused by low blood sugar as alcohol impacts the liver) and sickness (alcohol increases acid in your stomach, making you feel sick or vomit), making the day after drinking particularly unpleasant.

#### It Can Cause Anxiety (even if you've never had it before)

#### It Can Intensify Negative Emotions

#### It Can Negatively Affect Your Sleep

#### It Stops You From Developing Healthy Coping Mechanisms

#### Blackouts Can be an Indicator of Something More



## What Are The Strategies?

There are many different things you can do to reduce the impact of depression. Listed below is a kind of summary of all of these options and some simple things that could be put into a plan.

# Exercise:





Focus on basic health needs: a good night's sleep, a healthy diet with plenty of fruit and vegetables, and regular exercise. This is good for physical health and mental wellbeing.	Get out in nature, go to a park, beach, or do a bushwalk. Breathe in fresh air and listen to the sounds of nature. This can help to relax and improve mood.
Follow a daily routine. Try to wake up and go to bed at the same time each day, have regular mealtimes, and plan activities. Routines leave brain power for the things that seem more difficult.	Allow time for yourself – listen to music, watch the sunset, take a shower, meditate, or write a letter to yourself. Build up mental strength in order to take on life's challenges.
Reach out and talk to someone you trust. Contact with whānau or friends can feel like a weight off your shoulders. It helps if you don't try to cope on your own. Whānau and friends can provide emotional and practical support as well as advice.	Try breathing techniques when feeling vulnerable. Slow down breathing by counting to three as you inhale and again as you exhale. This is especially helpful for anxiety.
Practice self-compassion and forgiveness. Notice when negative thoughts come up and either challenge them or let them go with loving kindness.	Write your own plan:

## What Can I Do With This Information?

Now you have this information it can be helpful to do something with it. Consider writing down some notes on how to make this strategy work for you. Click on the blue button to open a note pad. Write down how, when, where and why you could use this strategy. Everything you write there will be saved to your profile under My Plans for later work.

Feel free to explore other tools on the website using green navigation buttons.



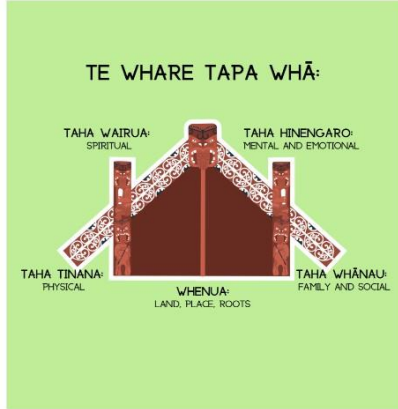
Return to Home page    Return to Module    Return to Strategies selection

## Confidence Builder

Te Whare Tapa Whā, a Māori health model, gives a great vision of how resilience can be nurtured and how it can increase wellbeing. The model is based on the indigenous understanding of the world, where all things are connected and depend on each other. Te Whare Tapa Whā says that a person is healthy when their spirit, their mind, their body, and their family are all healthy and standing on healthy foundations.

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Confidence builder offers you activities for each of the dimensions of the health of Te Whare Tapa Whā:



- Taha Wairua is the spiritual health of the person. It is the awareness of the person of who they are and their identity. The strength of the personal identity comes from the power of beliefs and values. This section focuses on the beliefs and values influenced by culture, family, religion, and life experiences.
- Taha Hinengaro is the mental and emotional health of thoughts and feelings. It is the ability to communicate, think and feel essential parts of the body and soul. This section encourages continuous learning of knowledge, skills, and abilities to promote the connection of the body and mind.
- Taha Whānau is about people you belong to, care about, and share aroha with. These people can be your family and whānau, friends, and the wider community. This section builds confidence and resilience by connecting people through talking and listening to others, being with people you care about, and giving time to the community.
- Tana Tinana is the physical health of the body. A healthy body is a strong body that can take on a physical challenge. A body nourished with healthy food is protected from poisonous substances like alcohol or drugs. The activities in this section promote a connection with a physical body. Learn to listen to your body, recognise your body needs, and respond to these needs.
- Whenua is people's connection to their land and their roots. All other dimensions of health rise from whenua, showing that nature is the source of life. Closeness to the land and the natural environment enhances health and wellbeing. This section focuses on connecting to nature.

We also created Quick Picks for people who are not sure what dimension of health is a priority at the moment or find it hard to make a choice. 'Quick picks' is a library of activities that can be used for quick, on the go pick-me-up.

## Taha Hinengaro Mind & Emotions

Challenges often affect mental and emotional abilities. Strengthen these abilities with activities that focus on gratitude. Taha hinengaro is about feelings, as well as communication and thought. It is important to take care of your mental and emotional health. Better taha hinengaro can help when coping with life's challenges. Focus on the mind, heart, conscience, thoughts, and feelings, and build resilience.

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<p><b>gratitude journal</b></p> <p>Write Out Your Grateful Thoughts</p> <p>Time: 5 minutes Type: Journal writing</p> <p><a href="#">Read more</a></p>	<p><b>prioritise goals</b></p> <p>Give Importance to Your Goals</p> <p>Time: 10 minutes Type: Thought challenge</p> <p><a href="#">Read more</a></p>	<p><b>gadgets &amp; gratitude</b></p> <p>Take Notice of Useful Gadgets</p> <p>Time: 30 minutes Type: Brainstorming</p> <p><a href="#">Read more</a></p>	<p><b>transform thoughts</b></p> <p>Flip a Negative to a Positive Thought</p> <p>Time: 15 minutes Type: Thought challenge</p> <p><a href="#">Read more</a></p>
<p><b>happiness experiment</b></p> <p>Try Something New</p> <p>Time: 30 minutes Type: Action</p> <p><a href="#">Read more</a></p>	<p><b>feeling funny</b></p> <p>Experience the Benefits of Laughter</p> <p>Time: 10 minutes Type: Internet search</p> <p><a href="#">Read more</a></p>	<p><b>imagine a world...</b></p> <p>Channel Your Inner Child</p> <p>Time: 5 minutes Type: Visualisation</p> <p><a href="#">Read more</a></p>	<p><b>when you won</b></p> <p>Define What Happiness Means to You</p> <p>Time: 15 minutes Type: Reflection</p> <p><a href="#">Read more</a></p>
<p><b>STOP</b></p>	<p><b>count</b></p>	<p><b>focus</b></p>	<p><b>you've got</b></p>

## Appendix C. HHPALS Email Correspondence

### *User Testing Email:*

(email sent to user testers prior to proceeding with the program)

Kia ora [Name],

Thank you for expression interest in Alcohol Habit Hacker PALS: A 28-day alcohol reduction challenge and offering to assist in user testing of the website and process. Habit Hacker PALS is a new innovation that delivers a personalised and tailored program for alcohol reduction. The impact of Habit Hacker PALS is being tested in regard to alcohol consumption, frequency, severity, and other alcohol-related problems.

We need to test our processes for participants. At the end of the survey please follow the instructions through to logging into the website and setting a goal and plan. The coach will also provide you feedback as we would like to know that works as well.

[\[Link to Qualtrics Baseline Survey\]](#)

[https://auckland.au1.qualtrics.com/jfe/form/SV\\_77DTV0XEh5QH0lo](https://auckland.au1.qualtrics.com/jfe/form/SV_77DTV0XEh5QH0lo) \_

When working through the materials would you consider the following:

1. Text that you thought could be improved upon....
2. Steps or information that was unclear or could be improved....
3. Your experience of setting a goal using the 28-day HHPALS calendar was....
4. The process of developing a plan and seeking feedback was....
5. Feedback or suggestions that might help other people....

If you would return the feedback to me in a few days that would be much appreciated.

Ngā mihi nui,

[\[Coach's Name\]](#)

Change Strategies Project | The University of Auckland

Grafton Campus, Auckland 1023

Email: [\[Coach's Email\]](#)



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## ***Welcome Email:***

(emailed to participants who have created a HHPALS account)

Kia ora [Name],

Thank you for signing up for [Alcohol Habit Hacker PALS](#): A New Year 28-day alcohol reduction challenge.

By signing up for this challenge, you have just taken a major step toward being stronger and more determined to change your alcohol habits. My name is [Coach's Name], and I will be your Habit Hacker coach for the challenge. I am really looking forward to hearing about your ideas on what will work for you.

Habit Hacker PALS is an intervention that delivers a personalised and tailored program for alcohol reduction. You choose your own goal and set your own plans drawing from thousands of strategies and tips that have worked for other people.

Your New Year challenge start date has been set for **Sunday, 1 January 2023**.

Now is the best time to get prepped as there is quite a lot to do. Here are the steps that are needed in order to set up your personal program.

- 1. Set up an account.** If you haven't already, go to <https://alcohol.changestrategies.ac.nz/> and set up an account. It just requires an email and password, and then you are ready to start.
- 2. Set your goal.** Click on the goal-setting module and set your New Year alcohol target. There is a tool in this module to guide your goal setting and think about reasons for change.
- 3. Select your approach.** Browse the TAKE ACTION module to find a strategy that will work for you. Take some notes at the bottom of the page when a strategy is of interest. Notes will save to your profile.
- 4. Make a plan.** Go to My PLANS and select the strategy that you think you can easily implement at the start of the New Year challenge and that will be of most help in sticking to your goals. Turn the strategy into a plan by detailing how, when and where you will do it and thinking about barriers that might arise.
- 5. Get feedback.** Ask your coach for feedback on your plan by checking the GET FEEDBACK box. Your coach will write back to you in the chat box and can provide support and encouragement.

The best time to complete these steps is right now. Then over the month, you can make new plans and refine them to ensure they work well for your personal situations. Do let me know if you get stuck or need any help or advice on these steps.

Ngā mihi nui,

[Coach's Name]

Change Strategies Project | The University of Auckland

Grafton Campus, Auckland 1023

Email: [Coach's Email]



**MEDICAL AND  
HEALTH SCIENCES**

***HHPALS Sign-Up Reminder:***

(emailed to participants who have completed their baseline survey and consented to participate in the study, but have not created an HHPALS account)

Kia ora [\[Name\]](#),

You recently completed the entry survey for Alcohol Habit Hacker PALS, to get access to free resources and a coach to support your alcohol reduction.

Thank you for taking the time to complete this survey and congratulations for getting involved. We know that preparation is important for a successful month and now is a great time to create an account on the website and get started.

To get access to the free resources and your own personal coach, don't forget to take the next step and follow the link below. This is a one-time log-in link that we have made for you:

[\[Unique One-time Log-in Link – Prompts User to Create an Account/Change or Set a Password\]](#)

You can go back into the site at any time and update your plans either before or after your start date. Talk soon.

Ngā mihi nui,

[\[Coach's Name\]](#)

Change Strategies Project | The University of Auckland  
Grafton Campus, Auckland 1023

Email: [\[Coach's Email\]](#)



**MEDICAL AND  
HEALTH SCIENCES**

***Getting Ready for the Challenge:***

(emailed on the 30<sup>th</sup> of December 2022)

Kia ora [Name],

It's not long now until New Year and the start of your Habit Hacker challenge. It's exciting to see so many great goals and plans established.

I am curious to hear about how you are getting along with creating a summer routine for improving your mental health. You can still go to the website and adjust your plans.

[Link to user's My Plans Page]

Now might also be a good time to make a plan for managing urges or social situations that involve drinking. Just jump back onto the site and have a look at how other people have done it and make your own plan.

[Link to HHPALS website: [www.alcohol.changestrategies.ac.nz](http://www.alcohol.changestrategies.ac.nz)]

I am here to provide support via the website any time over the month. Just send a comment in your profile page and we can chat.

Good luck with getting started on Sunday.

Ngā mihi nui,

[Coach's Name]

Change Strategies Project | The University of Auckland

Grafton Campus, Auckland 1023

Email: [Coach's Email]



**MEDICAL AND  
HEALTH SCIENCES**

***1<sup>st</sup> Check-in:***

(emailed on the 7<sup>th</sup> of January 2023, or one week into the challenge)

Kia ora [Name],

We are a week into the New Year and your Habit Hacker challenge, and it is so exciting to see so many great goals and plans established.

I am curious to hear about how you are getting along with creating a summer routine for improving your mental health. Now might also be a good time to make a plan for managing urges or social situations that involve drinking, like the classic Kiwi BBQ.

Just jump back onto the site and have a look at how other people have done it and make your own plan.

[Link to Make Your Plans Work – Support Page <https://alcohol.changestrategies.ac.nz/make-your-plans-work>]

I can provide support via the website any time over the month. Just send a comment on your profile via one of the strategy pages, or using the My Plans page and we can chat.

Ngā mihi nui,

[Coach's Name]

Change Strategies Project | The University of Auckland

Grafton Campus, Auckland 1023

Email: [Coach's Email]



**MEDICAL AND  
HEALTH SCIENCES**



## 2<sup>nd</sup> Check-in:

(emailed on the 14<sup>th</sup> of January 2023, or two weeks into the challenge)

Kia ora/Morena [Name],

I wanted to check in to see how you are doing, as you are now on day 14 of the challenge.

Now that we are halfway through, it is likely that you will experience barriers or challenges to sticking to your goals and plans. This is normal and to be expected as life often throws challenges.

I want to share a couple of resources that could be helpful.

The first is a section called Barrier Busters [[Link to Barrier Buster Module \(https://alcohol.changestrategies.ac.nz/barrier-busters\)](https://alcohol.changestrategies.ac.nz/barrier-busters)], which has a whole bunch of barriers and solutions. These barriers and solutions have come from other people who have cut back on their alcohol; perhaps some of these experiences will resonate with you too.

Personally, I think the page on finding inspiration is quite interesting [[Link to Seeking Inspiration Strategy Page \(https://alcohol.changestrategies.ac.nz/seek-inspiration-barriers\)](https://alcohol.changestrategies.ac.nz/seek-inspiration-barriers)]. We often think it is easy to get inspiration from others, but sometimes it takes work to find the right story or the right solution.

You might also have had some temptations over the past week. Temptation is completely normal, but it can definitely be frustrating over time. One way to deal with temptation is to go to the source of the problem. We have a section that is similar to therapy and has been written by a psychologist. This section called Trigger Tackler [[Link to Trigger Tackler Module \(https://alcohol.changestrategies.ac.nz/trigger-tackler\)](https://alcohol.changestrategies.ac.nz/trigger-tackler)], delivers information and techniques for changing your thinking about temptation. I found the section on dealing with unpleasant emotions really helpful.

I'd be interested to know what you think about the activities and if they were useful to you.  
Have a great week.

Ngā mihi nui,

[Coach's Name]

Change Strategies Project | The University of Auckland

Grafton Campus, Auckland 1023

Email: [Coach's Email]



**MEDICAL AND  
HEALTH SCIENCES**



### **3<sup>rd</sup> Check-in:**

(emailed on 21<sup>st</sup> of January 2023, or three weeks into the challenge)

Kia ora [Name],

I thought I would do a quick check-in to see how you are doing, and to let you know that we are now on day 21 of the challenge!

Now that we are getting towards the end of the challenge, it is likely that motivation might be waxing and waning. This is completely normal and to be expected because priorities change, and it can be tough to maintain the emotional energy to stay enthusiastic.

The website has some great resources for staying motivated. This resource was developed based on what others have said helped their self-control and willpower over time.

[Link to Motivation Matters Module <https://alcohol.changestrategies.ac.nz/motivation-matters-0>]

There are two parts to motivation – getting motivated and staying motivated.

Sometimes we have to get motivated a few times a week, especially when there is temptation. I've found it helpful to go back to my reasons for change and make them more visual.

Another great way to maintain motivation is through reward. There are some great ideas on how you can reward yourself for progress. Perhaps now is a time to think about a reward as well.

I'd be interested to know what you think about the activities and if they were useful for you. Have a great week, and I look forward to chatting again soon.

Ngā mihi nui,

[Coach's Name]

Change Strategies Project | The University of Auckland

Grafton Campus, Auckland 1023

Email: [Coach's Email]



**MEDICAL AND  
HEALTH SCIENCES**

***End of Challenge Email:***

(emailed between the 28<sup>th</sup> of January to 1<sup>st</sup> of February 2023, or four weeks into the challenge: End of Challenge)

Kia ora [Name],

Firstly, I want to acknowledge the great work you have put into this New Year Challenge. I can't imagine how tough it must have been to participate in the challenge whilst dealing with the horrific weather and flooding. I truly hope you and your loved ones are safe. My heart goes out to everyone affected by the recent weather event and floods.

Thank you for taking part in the Alcohol Habit Hacker PALS challenge.

I have really enjoyed working with you over the past month, and I hope the challenge has been useful.

The Habit Hacker challenge was for the month of January, so it is time to check in again. Here is the link to the End of Challenge survey which will take around 10 minutes. The survey asks about your drinking and also wants your opinion of the Habit Hacker PALS challenge.

[Link to Post-Intervention Qualtrics Survey  
[https://auckland.au1.qualtrics.com/jfe/form/SV\\_81jP92bFDva6X1Y](https://auckland.au1.qualtrics.com/jfe/form/SV_81jP92bFDva6X1Y)]

**When you are done, we will post you a \$25 shopping voucher as a token of our appreciation.**

Take care and stay safe.

Ngā mihi nui,

[Coach's Name]

Change Strategies Project | The University of Auckland

Grafton Campus, Auckland 1023

Email: [Coach's Email]



**MEDICAL AND  
HEALTH SCIENCES**

***Plan Encouragement:***

(emailed to participants who are yet to create a plan on HHPALS)

Kia ora [Name],

We are [time into the challenge; for example, over halfway through the challenge], and statistically, individuals who create action and coping plans are more likely to experience long-term success in their behaviour changes.

So, it might be a good time to create a plan on the website for managing urges or navigating social situations that involve drinking. This link has a numerous strategies for taking action, and getting the ball rolling for many situations in your life. I would love to hear what you think about these strategies.

[Link to Take Action Module <https://alcohol.changestrategies.ac.nz/take-action>]

If you have forgotten your password, please let me know, and I can send you the link to reset it.

Ngā mihi nui,

[Coach's Name]

Change Strategies Project | The University of Auckland

Grafton Campus, Auckland 1023

Email: [Coach's Email]



**MEDICAL AND  
HEALTH SCIENCES**

## Appendix D. Proposed Facilitator Training Package (Future Research)

Training could consist of 5 modules, broken down into five videos, and hosted on Qualtrics, the same software used to host baseline and post-intervention surveys. Using Qualtrics allows the evaluation of training modules to ensure peer facilitators fully understand their role before the challenge begins. The primary training components will build relatedness and autonomy skills and increase competency. The modules will focus on tools for alcohol reduction, building group cohesion, communication, support, and empathy, as well as how to set up, support, and organise your group, and finally, dealing with barriers to strategy implementation. These main training components can be spread across five modules, with approximately 2 hours of content, explained in greater detail in Table 16 below.

Table 16: Proposed peer facilitator training outline

Element	Content	Delivery	Purpose
Session 1: Induction: Is this for me?	Overview Of Habit Hacker PALS	Discuss the role of facilitators and how the program works	Establish relatedness amongst team leaders and the programme.
	What It Means to Be A Facilitator And Roles And Responsibilities		Oriente participants to the programme content which delivers the intervention
	Getting Your Team Together	Discuss the suitability of a team and how to make the approach	Gain commitment to the role
How And Why We Evaluate	Increase adherence to programme evaluation requirements.		
Session 2: Getting to know Habit Hacker	Habit Hacker PALS Website	Overview of Project Theory with an Emphasis on SDT	Build knowledge and confidence about the program content
	How And Why Habit Hacker PALS Works		Build knowledge and confidence in the underpinning theories

	Habit Hacker PALS Support Components		Ensure facilitators' confidence in programme efficacy
Session 3: Preparation for your expert role	How to Tell People about Habit Hacker PALS	Group cohesion	Consider methods to build small-group cohesion
	How to Select and Invite Your Team	Symbiotic relationship between members	Support communication style between PALS facilitators and their team members
	Practical tips for setting up team communication and support	Tips on increasing cohesion, and tips on troubleshooting	Provide ideas for strengthening group cohesion and problem-solving group issues such as members no longer responding or attending scheduled meetings.
Session 4: Maintaining your expert role (Part 1)	How People Change Addictive Behaviors	MI demonstration videos with practice suggestions	Provide ideas on how facilitators can nudge their team members to engage with the website, goals and plans.
	Urges, Cravings, and Lapses		
	How to Actively Listen		
	Developing Empathy		
	Training in Motivational Interviewing		
Session 5: Maintaining your expert role (Part 2)	Maintaining Team Motivation	Maintaining change and motivation.	Provide ideas on how facilitators can nudge their team members to complete the evaluation
	Boundaries and Resilience		
	Self-Care with Your Team		
	Insider Tips for Problem Solving		

## Appendix E. Ethics Approval



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### UNIVERSITY OF AUCKLAND HUMAN PARTICIPANTS ETHICS COMMITTEE (UAHPEC)

09/12/2021

Dr Simone Rodda

#### **Re: Application for Ethics Approval (Our Ref. UAHPEC23654): Approved**

The Committee considered your application for ethics approval for the study entitled "**A pilot and feasibility study of Habit Hacker PALS**".

We are pleased to inform you that ethics approval has been granted for a period of three years.

The expiry date for this approval is **09/12/2024**

The current restriction of contact in person with participants due to the COVID-19 lockdown may make the proposed methodology impractical. The Committee would like to remind researchers that they should check guidance updates and submit an amendment request if any changes need to be made to an approved ethics application to enable you to continue with your study.

The Committee would like to remind researchers that they should frequently check guidance updates, at the following sites:

<https://covid19.govt.nz/>

<https://www.staff.auckland.ac.nz/en/research-gateway/research-support-gateway/manage-ethics-and-regulatory-obligations/human-ethics-approvals.html>

*Research continuity:*

<https://www.staff.auckland.ac.nz/en/human-resources/staff-support-services/covid-19-coronavirus-outbreak/researcher-support-and-information.html>

If you have any questions about research continuity, not answered by the pages linked above, please contact your [Faculty/Institute Research Service Team](#) representative, your Faculty/Institute Business Continuity Lead, or mail [researchcontinuity@auckland.ac.nz](mailto:researchcontinuity@auckland.ac.nz).

*Research storage:*

<https://www.staff.auckland.ac.nz/en/news-events-and-notice/news/news-2020/covid-19/drop-in-virtual-help.html>

**Completion of the project:**

In order that up-to-date records are maintained, you must notify the Committee once your project is completed.

**Amendments to the approved project:**

Should you need to make any changes to the approved project, please follow the steps below:

- Send a request to the UAHPEC Administrators to unlock the application form (using the
- Notification tab in the Ethics RM form).
- Make all changes to the relevant sections of the application form and attach
- revised documents (as appropriate). Change the Application Type to “Amendment request” in Section 13 (“Submissions and Sign off”). Add a summary of the changes requested in the text box. Submit the amendment request (PI/Supervisors only to submit the form). If the project changes significantly, you are required to submit a new application.

**Funded projects:** If you received funding for this project, please provide this approval letter to your local Faculty Coordinator (RPC) or Research Project Manager (RPM) so that the approval can be notified via a Service Request to the Research Operations Centre (ROC) for activation of the grant.

The Chair and the members of UAHPEC would be happy to discuss general matters relating to ethics approvals. If you wish to do so, please contact the UAHPEC Ethics Administrators at [humanethics@auckland.ac.nz](mailto:humanethics@auckland.ac.nz) in the first instance.

**Additional information:**

Do not forget to fill in the 'approval wording' on the PISs, CFs and/or advertisements, using the date of this approval and the reference number, before you use the documents or send them out to your participants.

All communications with the UAHPEC regarding this application should indicate this reference number: **UAHPEC23654**.

UAHPEC Administrators  
University of Auckland Human Participants Ethics Committee