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Exploring Young Adults Experiences With Computerized Cognitive Behavioural Therapy: A Qualitative Study of Perceived Reduction in Anxiety

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Abstract

Anxiety disorders are one of the most common mental health concerns affecting young adults (YA), often appearing during a developmental period marked by academic, social, and identity-related transitions. Despite the availability of effective treatments such as cognitive behavioural therapy (CBT), many YA experience challenges to accessing traditional face-to-face services, including low priority, cost, stigma, and limited availability. Digital mental health interventions, including computerised cognitive behavioural therapy (cCBT), have emerged as scalable and accessible alternatives. While quantitative research has demonstrated that cCBT can reduce anxiety symptoms, less is known about how YA subjectively experiences these interventions and what factors influence engagement and perceived benefit.

This qualitative study aimed to explore YA experiences of using a cCBT programme called MoodGYM and their perceptions of its impact on anxiety symptoms. The research addressed four questions: How do YA in Aotearoa perceive the impact of cCBT on their experiences of anxiety? What aspects of cCBT influence engagement, perceived usefulness, and sustained participation? In what ways does using cCBT influence participants sense of coping, agency and self-efficacy? How do participants describe their experience of engaging with a self-guided cCBT programme? Thirteen YA aged 18–26 in Aotearoa New Zealand completed the MoodGYM intervention and participated in semi-structured interviews. Data was analysed using reflexive thematic analysis to capture common patterns and unique individual experiences.

Five key themes were identified: accessibility and convenience of cCBT, engagement and motivation, personal relevance and connection, learning and application of CBT principles, and perceived impact on anxiety and wellbeing. Participants described convenience as reducing practical and psychological barriers to help-seeking, enabling engagement during moments of heightened anxiety. Engagement and motivation varied, with some participants benefiting from autonomy while others reported challenges related to self-discipline and consistency. Personal relevance and emotional connection influenced perceived usefulness, while learning and application of CBT principles supported increased awareness and coping strategies. Participants also described perceived improvements in anxiety management and wellbeing, alongside recognizing limitations such as reduced accountability and limited personalization.

These findings indicate that while cCBT offers supplementary and scalable support to face-to-face therapy, its effectiveness is crafted by personal applicability, motivation, and opportunities for meaningful application of CBT skills. The study highlights the importance of enhancing personalization and incorporating therapist support suggesting that blended or hybrid approaches may enhance engagement and therapeutic outcomes.

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CHAPTER 1

INTRODUCTION

Anxiety disorders, classified by excessive worry, hyperarousal, and constant fear that intervenes with daily life, represent one of the most widespread psychiatric conditions globally (Organization, 2022; Simpson et al., 2010). According to the WHO, an estimated 301 million individuals were affected by anxiety disorders in 2019, a number that has continued to rise, particularly in the wake of the COVID-19 pandemic (WHO, 2022). Among young adults (YA) aged 18–26, this increase has been particularly steep. Rapid transitions associated with emerging adulthood, such as pursuing tertiary education, entering the workforce, or forming independent identities, exacerbate vulnerability to mental health issues, especially anxiety (Arnett, 2000; Auerbach et al., 2016).

Given the exceptional changes and challenges YA face, it is no surprise that many experience mental illness. Emerging adulthood (roughly ages 18–26) is a developmentally sensitive period associated with elevated incidence and burden of anxiety (Arnett, 2000). New Zealand data indicate that anxiety and general psychological distress are particularly common in this age group and have risen substantially over the last decade. The New Zealand Health Survey (NZHS) 2022/23 reported that young people aged 15–24 experienced substantially higher rates of recent psychological distress than older age groups: approximately one in five (>21%) reported high or very high levels of psychological distress in the four weeks prior to the survey (Lockett et al., 2018; Sutcliffe et al., 2023). This increase represents a dramatic rise compared with earlier survey waves and has been highlighted by national reviews as a major public-health concerns (Richmond-Rakerd et al., 2021).

Estimates specific to anxiety disorders in the general adult population provide additional context. Recent clinical summaries estimate that around 15% of New Zealanders experience an anxiety disorder in a 12-month period, a prevalence broadly consistent with international estimates (Health Navigator, 2019; Somers et al., 2006). While population-level surveys typically report distress rather than formal DSM diagnoses, these figures outline that anxiety symptoms and disorder-level problems are common among young people in Aotearoa (Andrews, Bell, et al., 2018).

Large multi-country studies suggest that approximately 30–35% of university students screen positive for at least one common mental disorder. Earlier systematic review data similarly estimated that around one-third of tertiary students report clinically significant symptoms (Samaranayake et al., 2014). These elevated rates are particularly evident for anxiety disorders during the transition into university, a developmental period marked by academic pressure, social change, and increased independence (Auerbach et al., 2018).

New Zealand data mirror these international findings. School and university-based surveys confirm high rates in late adolescence and early adulthood. The Youth19 (Rangatahi) survey series, nationally representative cross-sectional surveys of secondary school students, documented rising emotional symptoms across 2012–2019, with increases in depressive and anxiety-type symptomatology among rangatahi (Clark et al., 2025; Fleming et al., 2020). For tertiary populations, emerging evidence indicates that a substantial minority of students report clinically significant symptoms (Samaranayake et al., 2014), and a New Zealand implementation trial reported that about 31% of students screened positive for a 12-month clinical disorder (Dear et al., 2024).

There are important inequities in prevalence and trajectories. The majority (70%) of NZ's 5 million population is of European descent. Out of which 8% is comprised of Pacific descent. Tucker-Masters and Tiatia-Seath (2017) reviewed the literature on anxiety and depression among Pacific youth in New Zealand, the Pacific Islands and the United States, concluding that Pacific youth were at higher risk of anxiety and depression than other ethnic groups. Māori and Pacific young people, and those living in higher deprivation areas, have experienced disproportionate increases in psychological distress and mental-health need (Fleming et al., 2024). The Auditor-General and public health commentaries have emphasized widening gaps and rising unmet need among 15–24-year-olds (Office of the Auditor-General, 2024). This has implications for intervention design and access; for example, the need for culturally appropriate, low-barrier, and early-intervention options such as scalable digital therapies.

New Zealand evidence indicates that anxiety and high psychological distress are common and rising among emerging adults. Prevalence estimates vary by measure (Kessler psychological distress vs. diagnostic screening), setting (general population vs. student samples), and time (pre- vs. post-COVID trends), but the overall picture points to a substantial public-health burden

among 18–26-year-olds. These epidemiological realities justify investigation of accessible prevention and early-intervention modalities (including self-guided and guided cCBT platforms such as MoodGYM) targeted at YA in Aotearoa.

The prevalence of anxiety among youth in high-income countries is alarming. In the United States, approximately 19% of adults aged 18 and over are affected annually, with higher rates reported among younger cohorts (National Institute of Mental Health [NIMH], 2023). Similar trends are observed in the United Kingdom, Australia, and New Zealand. In Aotearoa New Zealand, Ministry of Health (2022) data reveals that 20.2% of those aged 15 to 24 have experienced an anxiety disorder, with elevated prevalence among Māori, Pacific peoples, and LGBTQ+ youth (Roy et al., 2023). Recent studies confirm a persistent increase in the global prevalence of anxiety disorders since 1990, with a significant spike after 2019. As of 2021, approximately 4.4% of the global population was affected, translating into over 359 million cases worldwide. DALY rates attributable to anxiety disorders have also risen sharply alongside incidence and prevalence metrics, reflecting increased disease burden for affected individuals. Portugal currently records the highest reported prevalence rate of anxiety disorder, with 8,671 cases per 100,000 people, followed by countries such as Brazil, Iran, and New Zealand.

This group is also more likely to encounter systemic barriers that affect access to mental health care, including racism, culturally unsafe services, and geographic inaccessibility (Baxter et al., 2006; Came et al., 2020).

These challenges are compounded by service-level limitations. The New Zealand Mental Health and Wellbeing Commission (2022) reports critical workforce shortages, long wait times, and a lack of youth-specific and culturally responsive services. Despite increased public awareness and policy support for mental health, many YA do not seek help or disengage prematurely due to stigma, confidentiality concerns, or logistical difficulties (Gibson et al., 2021). These treatment gaps points at the urgent need for accessible, youth-friendly mental health interventions that meet young people where they are in both psychological and physical spaces.

Digital mental health solutions have emerged as scalable, cost-effective, and accessible alternatives to face-to-face therapy. Of these, computerised cognitive behavioural therapy (cCBT) has garnered substantial empirical attention. Cognitive Behavioural Therapy (CBT), grounded in well-established theoretical frameworks, focuses on identifying and restructuring

maladaptive thought patterns and behaviours (Beck, 1979; Hofmann et al., 2012). Computerized CBT translates this therapeutic process into digital formats often web- or app-based and has been found to be effective in treating mild to moderate anxiety and depression in both guided and unguided formats (Andersson et al., 2014; Carlbring et al., 2018).

Among the earliest and most rigorously tested cCBT programs is MoodGYM, developed by researchers at the Australian National University. MoodGYM provides a series of interactive modules based on CBT principles, including modules on cognitive restructuring, behavioural activation, problem-solving, and emotional regulation (Christensen, Griffiths, & Jorm, 2004). The program is self-guided and has been accessible online, making it particularly attractive to younger demographics who are comfortable with digital tools and value privacy and autonomy in managing their mental health (Leech et al., 2021; Naslund et al., 2016).

While quantitative studies consistently show that MoodGYM can reduce symptoms of anxiety and depression, there is limited understanding of how users, especially YA, experience the program subjectively. This gap in qualitative research is significant, especially in Aotearoa. Symptom reduction scores cannot fully capture how individuals engage with content, relate to therapeutic exercises, or incorporate digital tools into their everyday lives (Martinez-Martin & Kreitmair, 2018). Moreover, digital interventions are often critiqued for high attrition rates and low engagement, issues that may be better understood through the exploration of user's lived experiences (Eysenbach, 2005).

In the context of New Zealand, few studies have examined the real-world application of MoodGYM or similar interventions among YA. Most local digital initiatives, such as SPARX (Fleming et al., 2012) or Just a Thought (2023), target adolescents or offer clinician-facilitated engagement. There is also little data on how YA in Aotearoa interpret and interact with unguided, standalone e-therapy tools, particularly those experiencing anxiety without concurrent professional support. Cultural responsiveness, digital literacy, internet access, and mental health literacy vary significantly across communities in New Zealand, making it critical to explore how diverse YA experience these tools and whether they perceive them as useful, engaging, and empowering.

Cognitive Behavioural Therapy is designed to assist individuals in addressing, modifying, and challenging maladaptive patterns of thinking and behaviour. Extensive research demonstrates that CBT is an effective intervention across a broad range of psychological disorders, particularly anxiety, where it is considered the preferred treatment with robust and enduring outcomes in young people (Dear et al., 2015). Evidence further suggests that treatment format, whether individual or group CBT, does not significantly influence short- or long-term effectiveness, as both yield comparable effect sizes (Kodal et al., 2018; Saavedra et al., 2010).

The development and persistence of anxiety disorders are closely linked to maladaptive information processing biases (Beck & Clark, 1997). CBT seeks to assist individuals in recognizing recurring cognitive distortions and dysfunctional reasoning patterns, replacing them with more adaptive and balanced beliefs (Beck & Haigh, 2014). Notably, anxiety has also been associated with paranoid ideation, potentially mediated by reasoning biases such as “jumping to conclusions” (Giusti et al., 2018; Lincoln et al., 2010).

Cognitive biases, including overgeneralization and exaggerated threat perception, often contribute to heightened vigilance, autonomic arousal, and worry, which in turn maintain anxious states (Beck & Clark, 1997). Evidence from Giusti et al. (2018) highlights that enriched CBT group interventions can reduce anxiety symptoms while enhancing social functioning and cognitive flexibility. The latter is defined as the capacity to question one’s own beliefs, detect flawed reasoning, reflect objectively, and remain open to corrective feedback (Beck et al., 2004). Cognitive flexibility, therefore, represents a critical metacognitive capacity linked to adaptability and self-regulation, making it a valuable target for cognitive restructuring in anxiety treatment. Instruments such as the Beck Cognitive Insight Scale (BCIS) have been validated as measures of this construct (Beck et al., 2004).

Despite its strong evidence base, CBT faces barriers to accessibility, including therapist shortages, stigma, geographical limitations, long waiting times, scheduling challenges, and financial constraints (Hedman et al., 2016; Olthuis et al., 2016). In response, computer-based CBT (cCBT) has emerged as a scalable alternative. Over the past decade and a half, digital and internet-delivered interventions have been widely developed (Andersson, 2016). Meta-analytic findings indicate that cCBT is as effective as traditional face-to-face therapy for both adults and youth (Adelman et al., 2014; Olthuis et al., 2016), with evidence suggesting that participants may

experience sustained symptom reduction and greater long-term benefits following program completion.

The central focus of the current study was to evaluate the acceptability of the MoodGYM intervention, including its social validity, with YA. Previous studies on MoodGYM and adults have not explored the acceptability of the intervention in as much detail. The current study used both questionnaires and open-ended responses to gather data from the participants on their experiences using the program. This information is crucial in finding out whether YA will complete and benefit from cCBT. The current study also sought to examine adherence rates to cCBT. YA self-reported whether they finished the modules and how much effort they put towards completing the modules. Participants were also asked to time themselves while completing MoodGYM modules to estimate their usage more accurately. This qualitative study aims to address that gap. By centring the voices of YA aged 18 to 26 who have used cCBT, it seeks to explore how they perceive the intervention's impact on their anxiety symptoms and broader mental well-being. It also examines how participants experienced the structure, content, and delivery of the program, including perceived usability, relevance, and emotional engagement. Participants completed pre- and post-intervention assessments and engaged in semi-structured interviews to reflect on their engagement with the intervention and its impact on their daily lives.

Understanding these perspectives is not only essential for improving digital mental health interventions but also for informing future service delivery models that integrate digital tools within broader systems of mental health care. With mental health services under strain globally and particularly in New Zealand, leveraging technology to provide effective, accessible support is an urgent priority (WHO, 2021; Mental Health and Wellbeing Commission, 2022).

This study contributes to a growing body of literature that recognizes the importance of user-centred approaches in the design and implementation of mental health technologies. It highlights the potential of digital interventions to reach underserved populations and offers insights into the subjective factors that influence adherence, satisfaction, and outcomes. Moreover, it situates the findings within the unique sociocultural and service context of Aotearoa New Zealand, aiming to support more equitable and effective mental health care for all young people.

Self-guided internet-based interventions are well-suited for wide-scale implementation across populations or as preventive tools for specific subgroups. Research indicates positive outcomes

in population-based studies targeting anxiety (Christensen et al., 2002; Powell et al., 2013), and similar benefits have been observed among spontaneous users outside structured trials (Christensen, Griffiths, Korten, et al., 2004). A common challenge in self-guided online interventions is attrition. In randomized controlled trials (RCTs), non-usage rates vary from 1% to 50% (Christensen et al., 2009; Cuijpers et al., 2011), while open-access websites report attrition as high as 99% (Christensen, Griffiths, Korten, et al., 2004).

Higher retention is demonstrated during RCTs, likely due to the structured environment compared to spontaneous users on open platforms. The use of "push" strategies, such as email reminders or phone check-ins, have been recommended to boost adherence in online interventions (Cuijpers et al., 2011; McKay et al., 2018; Neil & Christensen, 2009; van Gemert-Pijnen et al., 2011). A systematic review by Kelders et al. (2012) found that RCT design, greater therapist interaction, more frequent intended use, regular intervention updates, and dialogue support (e.g., reminders) predicted better adherence.

Evidence regarding the impact of push factors is mixed. Farrer et al. (2011) reported no difference in adherence to an anxiety-focused MoodGYM intervention between participants receiving weekly 10-minute phone check-ins and those without tracking. However, meta-analytic data indicates that internet-based interventions with reminder systems yield larger effect sizes for symptom reduction (Hedge's $g = 0.49$ versus 0.24) (Cowpertwait & Clarke, 2013). In other health behaviour interventions, such as diet, exercise, and weight loss, periodic prompts generally support positive outcomes, though results are inconsistent (Neff & Fry, 2009). Reminders remain a common feature in online interventions, yet approximately 25% of programs do not incorporate them (Kelders et al., 2012). The ideal frequency and type of reminders for promoting adherence in digital interventions is still undetermined (Cowpertwait & Clarke, 2013; Neff & Fry, 2009).

Effectiveness of cCBT

Computer-delivered CBT has emerged as an effective treatment modality for anxiety disorders, providing accessible, scalable, and evidence-based interventions (Andersson et al., 2012; Warmerdam et al., 2013). Unlike traditional face-to-face therapy, cCBT allows users to engage with structured cognitive and behavioural exercises through online platforms, making it a

particularly useful approach for individuals who face barriers to in-person treatment. Despite its demonstrated efficacy, the precise mechanisms by which cCBT reduces anxiety symptoms remain an area of ongoing investigation.

Research has explored patient characteristics that may predict treatment outcomes. While findings are not entirely consistent across studies, certain factors have been associated with greater benefit from cCBT for anxiety. These include gender, higher educational attainment, employment, and marital status (Donker et al., 2013; Warmerdam et al., 2013). However, psychological variables and baseline severity of anxiety symptoms have produced mixed results. Some studies suggest that individuals with higher initial symptom severity may experience larger gains (Warmerdam et al., 2013), whereas others report no association or even reduced benefit for those with more severe anxiety (Sunderland et al., 2013). These findings highlight the importance of considering individual differences and tailoring interventions to optimize outcomes.

In addition to patient characteristics, the role of the working alliance traditionally recognized as a key factor in face-to-face therapy has been investigated in cCBT. Research indicates that a strong alliance can be established even in online settings, particularly when guided support is provided (Andersson et al., 2012; Preschl et al., 2011). However, evidence suggests that the strength of the alliance may not consistently predict symptom improvement, pointing to potential differences in mechanisms of change between computerized and traditional therapy (Cavanagh & Millings, 2013).

Finally, the interaction between the user, the program, and the therapist appears to contribute to therapeutic outcomes. Baumeister et al. (2014) reported that adding therapist support increased programme adherence by 20–30% and was associated with significantly larger clinical effects. In terms of symptom reduction, guided interventions typically produce moderate-to-large effect sizes ($g \approx 0.78$) compared with small-to-moderate effects for unguided formats ($g \approx 0.36$). Qualitative research has shown that participants develop a sense of trust and personal agency when engaging with programs like MoodGYM, which can enhance motivation, structure cognitive processes, and foster self-efficacy in managing anxiety (Purves & Dutton, 2013; Richards, 2004). These findings outline the need to consider not only the content of online interventions but also the experiential aspects of user engagement.

Overall, evidence suggests that cCBT programs such as MoodGYM offer effective and flexible options for anxiety management, with outcomes influenced by a combination of patient characteristics, program design, and the quality of the user-program interaction. Further research is needed to clarify the mechanisms of change and optimize intervention strategies for diverse populations.

The present research is a qualitative study exploring YA experiences of engaging with a cCBT programme: MoodGYM in a space comfortable to them to manage anxiety symptoms. While most previous MoodGYM studies have examined its use in structured environments such as schools, universities, or health centres (Calear et al., 2009; Ellis et al., 2011; Lillevoll et al., 2014; O'Kearney et al., 2009; Sethi, 2013), little research has investigated how participants experience the program when used independently, in their own time and setting in New Zealand. Allowing participants the flexibility to engage with the program in self-directed ways mirrors how e-health tools are typically accessed in real-world contexts and provides valuable insight into the feasibility and acceptability of digital CBT outside controlled environments.

By focusing on YA, a group navigating significant life transitions and heightened vulnerability to anxiety, this study seeks to capture the unique ways individuals perceive and make meaning of cCBT as a support tool. Understanding how participants experience the program in everyday life contributes to knowledge about barriers, facilitators, and potential cultural considerations in digital mental health delivery. While not designed to test clinical effectiveness, this study highlights the importance of user perspectives, which can guide future adaptations of cCBT and inform its implementation in diverse, multicultural communities.

The focus of this study involves delivering cognitive behavioural therapy through digital platforms like personal computers or the Internet. It generally consists of structured course modules featuring interactive instructional content. Users can engage with cCBT either independently, via online self-help formats, or with therapist assistance, which typically involves support through telephone, emails, or feedback on private forums (Andrews et al., 2010) While cCBT can also be provided via one-on-one sessions, this approach is less common (Palmqvist et al., 2007).

Multiple meta-analyses of RCTs demonstrate that cCBT is effective in treating common mental health problems, such as anxiety, depression, and insomnia (Andrews et al., 2010; Cheng &

Dizon, 2012; Reger & Gahm, 2009; Spek et al., 2007). Additionally, cCBT provides notable advantages including easy access (from home or anywhere with internet), time-saving benefits for clinicians, and relatively low costs (Cuijpers et al., 2009; Proudfoot et al., 2011). However, challenges remain, such as high dropout rates that can reach up to 80% in some studies (Christensen et al., 2006; Cuijpers et al., 2008; Kaltenthaler et al., 2008).

Another key issue is that much of the research has focused on 'efficacy' trials with motivated, self-referred individuals who may not represent broader clinical populations ((Andersson et al., 2009; Twomey et al., 2013).

Computerized CBT represents a recent innovation in mental-health delivery. For the purposes of this thesis, cCBT refers to programmes in which therapeutic content is embedded within the software and clinician contact is minimal (e.g., brief email or telephone support) or absent. Meta-analytic and trial evidence has demonstrated the efficacy of cCBT across a range of problems, including anxiety and depression, substance misuse, post-traumatic stress disorder, chronic insomnia, obsessive–compulsive disorder, and disordered eating; some studies have even found outcomes comparable to face-to-face therapy e.g., (Richards et al., 2015; Spence et al., 2011).

Despite robust evidence and generally high user satisfaction, uptake of cCBT has remained lower than expected. Research suggests that attitudes among mental-health professionals are an important barrier to wider dissemination. International surveys of clinicians in Australia, New Zealand, the UK, USA, Sweden, Norway, Scotland and others reveal common patterns (Becker & Jensen-Doss, 2013; Carper et al., 2013; Fleming & Merry, 2013; Gun et al., 2011; MacLeod & Clarke, 2015; Mora et al., 2008; Perle et al., 2013; Sinclair et al., 2013; Wangberg et al., 2007; Wells et al., 2010): most practitioners continue to view face-to-face therapy as superior, and only a minority (roughly 17–33%) believe cCBT can achieve equivalent outcomes to standard practice. Clinicians commonly regard cCBT as appropriate for prevention and for mild to moderate presentations, but less suitable for severe or complex cases (Waller & Gilbody, 2009). Consequently, many practitioners prefer to use computerized programmes as adjuncts to, rather than substitutes for conventional therapy, with some express concern about making unguided programmes freely available without professional oversight.

Therapists trained in CBT are generally more receptive to computerized interventions likely because CBT’s structured, skills-based format translates readily to digital delivery; whereas

clinicians from other orientations are seldom positive. Studies also identify widespread gaps in clinicians knowledge about available programmes and the research supporting them, which likely contributes to reluctance to recommend or implement cCBT.

Researchers and practitioners have identified clear targets to increase adoption: improve clinician knowledge about effectiveness and availability, provide practical training and legal/ethical guidance, and address logistical barriers (for example, providing suitable access points for patients to complete modules). Encouragingly, sizeable proportions of mental-health workers report openness to using cCBT in future practice, suggesting that with targeted implementation efforts including training, policy clarification, and workplace support, uptake could improve substantially. The role of clinician attitudes therefore remains a critical consideration when seeking to scale evidence-based digital therapies.

The current study involves YA participating in cCBT programme, MoodGYM, to understand its influence and outcome in YA lives, further aiming to evaluate cCBT's effectiveness in reducing psychological distress, depression, anxiety, stress, and functional impairment. This effectiveness trial helped address research gaps left by prior efficacy-focused studies (Andersson, 2009). Self-help cCBT was selected for evaluation due to its minimal demanding nature on practitioner resources.

The cCBT program evaluated was MoodGYM, developed by the Centre for Mental Health Research at the Australian National University (Griffiths et al., 2004). MoodGYM was chosen for several reasons. First, there is substantial, albeit not conclusive, evidence supporting its effectiveness for depression, anxiety, and general psychological distress (Burns et al., 2010; Calear et al., 2009; Ellis et al., 2011). Second, MoodGYM is easily available online with a substantial fee of $45 NZD for the New Zealand population. Third, its design involves only five sessions that can be completed within a few weeks. Fourth, it is suitable for people experiencing depression, anxiety, and general psychological distress, offering a wide pool for recruitment. Fifth, no previous studies had evaluated cCBT, particularly MoodGYM, as an intervention method in New Zealand.

Aims of the Study

Internet-based interventions have gained increasing attention as accessible and cost-effective approaches to the prevention and treatment of anxiety (Andrews, Basu, et al., 2018; Titov et al., 2019). Computerized CBT programs such as the MoodGYM have demonstrated potential in reducing symptoms of anxiety and depression, particularly among YA. (Musiat & Tarrier, 2014). Given the growing mental health needs of young people and the barriers they face in accessing traditional face-to-face therapy, examining the role of such interventions in a New Zealand context is timely and relevant.

The present study adopts a qualitative design to explore YA experiences with cCBT, with a focus on its effectiveness and perceived helpfulness in managing anxiety. Specifically, this study seeks to:

1. Explore participant's perceptions of the helpfulness and usability of cCBT in managing anxiety.
2. Examine the perceived impact of cCBT on anxiety symptoms and coping strategies.
3. Identify factors influencing engagement and adherence, including barriers and facilitators to use.
4. Investigate the potential of cCBT as a preventive and early intervention resource for YA with moderate anxiety.

By addressing these aims, the study intends to provide insights into how digital interventions such as MoodGYM may complement existing services and inform future implementation of internet-based approaches within New Zealand's mental health system (Fleming et al., 2025).

CHAPTER 2

LITERATURE REVIEW

The increasing prevalence of anxiety among YA has intensified the need for accessible, scalable, and developmentally appropriate mental health interventions. YA, in particular, face a mixture of academic, social, and financial stressors that place them at elevated risk for psychological distress, yet many encounter barriers to traditional face-to-face therapy, including cost, stigma, and service availability. Computerised CBT has emerged as a promising response to this treatment gap, offering structured, evidence-based support in a flexible digital format. While a growing body of research demonstrates the efficacy of cCBT for reducing anxiety symptoms, less is understood about how YA especially within the Aotearoa New Zealand context experience and engage with these programmes in real-world settings. This literature review critically examines existing empirical and theoretical work on anxiety in emerging adulthood, the development and effectiveness of cCBT interventions, and the factors influencing user engagement and perceived impact. By synthesizing current knowledge and identifying key gaps, this review establishes the rationale for the present qualitative study exploring YA lived experiences of using cCBT for anxiety management.

Anxiety in Late Adolescent and Young Adulthood

The distinction between adolescence and young adulthood remains a topic of scholarly debate, largely due to variations in developmental, legal, and cultural definitions across contexts. While adolescence is commonly recognized as the period between childhood and adulthood, its precise age range is inconsistently defined in global research. The World Health Organization (2022) continues to define adolescence as spanning ages 10 to 19. However, contemporary developmental frameworks often break this stage further into early adolescence (10–14 years), middle adolescence (15–17 years), and late adolescence/young adulthood (18–24 years) to better reflect social, cognitive, and emotional changes that occur over time (Patton et al., 2016; Sawyer et al., 2018).

A prominent framework that has shaped modern understandings of the transition to adulthood is Arnett's (2015) theory of emerging adulthood. Arnett proposed that the phase between ages 18 and 26 represents a distinct developmental stage, characterized by identity exploration,

instability, self-focus, and a sense of being "in-between" adolescence and full-fledged adulthood. Although age 18 often carries legal and societal implications of adult status, such as voting rights or high school graduation, this does not necessarily coincide with psychosocial maturity (Arnett, 2015; Sawyer et al., 2018). In addition, many researchers now consider emerging adulthood a critical window for studying mental health, as individuals are increasingly vulnerable to psychological distress while navigating education, employment, and relational shifts (Chua & Lee, 2025).

This age ambiguity is reflected in health policy and research. While some agencies continue to treat age 18 as a clear demarcation between adolescence and adulthood, others argue that young people do not uniformly acquire adult capacities at this age, especially in contemporary societies where milestones like financial independence and long-term partnership are increasingly delayed (Viner et al., 2017). The literature therefore supports a flexible approach to defining this developmental period, recognizing that the transition to adulthood is gradual, nonlinear, and influenced by socioeconomic and cultural factors (Foulkes & Blakemore, 2018; Gabard-Durnam & McLaughlin, 2020).

Recent research has highlighted the economic practicality of e-health programs as scalable solutions for addressing adolescent anxiety. A cost-effectiveness study by Lee et al., (2021) evaluated MoodGYM, a computerized CBT program, among Australian secondary school students aged 11–17 years. Using a Markov model over a 10-year horizon, the intervention was compared with “no intervention” and assessed through cost-utility and return-on-investment (ROI) analyses. Findings indicated that MoodGYM was a dominant strategy, generating both health benefits and net cost savings, with an ROI ratio of $3.06 suggesting that for every Australian dollar invested, over three dollars could be returned in economic benefits. These results provide compelling evidence that digital mental health tools can be highly cost-effective at a population level, particularly when embedded in school-based settings.

Despite these promising findings, limitations remain. The model relied on assumptions regarding internet accessibility, which may reduce feasibility in rural or underserved populations. Moreover, while economic analyses provide strong justification for large-scale dissemination, they do not address qualitative aspects of intervention engagement, such as user experience, perceived helpfulness, and barriers to sustained use. Most importantly, the study focused on

adolescents, leaving a gap in understanding how YA particularly those in late adolescence and early adulthood, when anxiety disorders often become more entrenched perceive and benefit from such interventions.

The present thesis addresses these gaps by shifting focus from cost-effectiveness to lived experiences of YA in New Zealand, a demographic facing unique stressors during the transition into adulthood. Specifically, the study explores participants. perceptions of the usability, helpfulness, and potential preventive role of MoodGYM in managing moderate anxiety. By adopting a qualitative design, the thesis builds on the economic evidence for cCBT by providing in-depth insights into individual-level experiences and engagement patterns that cannot be captured through cost models alone.

Given the psychological vulnerability associated with this life stage, particularly with the rise of anxiety and mood disorders among those aged 18 to 26, it is imperative that mental health research and interventions, such as the current study, clearly articulate the unique characteristics and needs of this population.

Emerging Adulthood and Mental Health Vulnerability

Emerging adulthood is increasingly recognized as a distinct developmental stage marked by profound psychosocial transitions. Originally theorized by Arnett, this phase, spanning approximately ages 18 to 25, is considered a unique life period characterized by identity exploration, instability, and evolving independence (Arnett, 2015). Unlike adolescence, which is often bound by formal education and parental dependency, emerging adulthood involves navigating novel responsibilities across areas such as education, employment, relationships, and personal identity, yet without the full commitments typically associated with established adulthood (Nelson, 2021; Tanner & Arnett, 2016).

One of the defining features of emerging adulthood is the postponement of traditional adult roles, such as marriage and parenthood, especially in high-income and industrialized countries. This cultural shift has contributed to a developmental space marked by autonomy, experimentation, and opportunity but also vulnerability (Côté, 2018; Shanahan et al., 2022). Individuals in this age group frequently move between residences, change jobs or academic paths, and report fluctuating social support systems. While many YA perceive this period as one of possibility and

personal growth, it can also be a time of heightened stress, identity confusion, and emotional instability (Schwartz, 2016).

Arnett (2015) proposed five core features of emerging adulthood: identity exploration, instability, self-focus, feeling in-between, and a sense of future possibilities. While these characteristics may foster personal development and optimism, they also reflect the lack of social anchors that can buffer against mental health difficulties. Notably, emerging adulthood is a period when psychological disorders such as anxiety and depression often emerge or intensify. Recent evidence shows that anxiety disorders frequently onset during this life stage and may persist into later adulthood if not addressed (Donald et al., 2019; Kessler et al., 2022).

This psychosocial context is especially relevant to the present study, which explores how emerging adults aged 18–26 engage with a self-guided cCBT program designed to reduce anxiety. Given that many individuals in this age range are navigating instability and identity-related stressors, scalable interventions that can be accessed flexibly and privately may offer significant mental health benefits (Naslund et al., 2016; Peters-Corbett et al., 2024). The current study seeks to understand how these YA perceive their experiences using a cCBT platform (MoodGYM), including how well it supports them during a time when emotional regulation, decision-making, and mental wellbeing are in flux.

While Arnett's model has garnered widespread empirical support, it is not without critique. Some scholars argue that the framework overemphasizes individual agency and does not fully account for cultural, economic, and structural constraints that shape developmental outcomes (Kloep et al., 2015; Syed & Mitchell, 2016). Nonetheless, the theory remains a useful lens for examining how YA experience mental health and treatment engagement during a transitional life phase. It provides an important context for understanding why digital mental health tools may resonate with this demographic, particularly as traditional service models struggle to meet their unique and evolving needs.

Prevalence of Anxiety in Young Adulthood

Many adolescents and YA experience anxiety at high rates as they cope with changing developmental roles. Findings from the New Zealand Mental Health Survey (NZMHS), the Dutch Tracking Adolescents Individual Lives Survey (TRAILS), the US National Comorbidity

Survey (NCS) and its replication NCS-R show 12-month prevalence was between 19.4 and 22.3% for anxiety disorders (including specific phobias) (Garisch & Wilson, 2015). The 12-month prevalence estimates of MDD between 8.3 and 12.4% among people between 18 and 33 years, between 2.5 and 10.3% for alcohol dependence, and between 7.1 and 18.4% for alcohol abuse.

The prevalence of anxiety disorders remains consistently high worldwide, with systematic reviews reporting lifetime rates ranging from 3.8% to 25% across different populations (Remes et al., 2016). Notably, prevalence is especially elevated among women (5.2–8.7%), YA (2.5–9.1%), and individuals with chronic medical conditions (1.4–70%)(Santomauro et al., 2021). These findings highlight young adulthood as a critical developmental stage for the onset of anxiety, aligning with other research demonstrating that symptoms often emerge in late adolescence to early adulthood (Kessler et al., 2005). Furthermore, Remes et al. (2016) emphasize cultural differences in prevalence, with higher rates in Euro/Anglo populations compared to Indo/Asian or African cultures, which suggests that sociocultural and systemic factors may influence both the reporting and manifestation of anxiety.

While this review synthesizes global evidence, significant research gaps remain. Few studies have examined anxiety prevalence in underrepresented and developing contexts, creating a Western-centric understanding of the disorder (Javaid et al., 2023). Additionally, much of the prevalence literature focuses on broad epidemiological estimates rather than exploring how anxiety intersects with factors such as access to digital interventions, treatment adherence, or perceived efficacy in young adult populations. This gap is particularly relevant given the growing reliance on computer delivered cCBT as a scalable mental health solution.

Previous studies indicate that the prevalence of depression is stable over the earliest part of adulthood, whereas Alcohol Use Disorder (AUD) decreases, and findings regarding anxiety disorders are mixed.

In the Dunedin study from New Zealand (Poulton et al., 2023), the 12-month prevalence of any anxiety disorder (including specific phobias) was 20.3% at 21 years and 22.2% at 32 years. The prevalence of alcohol dependence declined (from 18.4 to 8.1%) from age 21 to 32 in the Dunedin study, and the prevalence of AUD declined from 26.7 to 6.0% in the Simmons Longitudinal Study. Furthermore, the rates of psychological distress (as measured by the Kessler

Psychological Distress Scale) are 1.7 times higher in Māori compared with non-Māori/non Pacific and 2.5 times higher for those living in more socioeconomically deprived areas compared with less deprived areas (Ministry of Health, 2024).

Some individuals have long-lasting and recurrent episodes of mental disorders. In the general adult population, about 40% of those who have depression or anxiety at one point, have been found to have at least one of these disorders 7 years later. Having a disorder or mental health problems in adolescence increases the risk of such disorders/problems in early adulthood. Findings from the NCS follow-up (NCS-2) showed that having MDD or generalized anxiety disorder (GAD) in the twenties and thirties predicted having any of these disorders eleven years later (Callaghan et al., 2017).

In summary, despite having higher rates of anxiety, depression and suicidal thoughts, many adolescents and YA go without treatment for anxiety and other serious mental illness, and these populations are vastly underserved when compared to other age groups.

A pivotal population-based study by Goodwin et al. (2020) analysed data from the National Survey on Drug Use and Health (NSDUH) spanning 2008 to 2018, providing strong evidence of a significant and rapid increase in anxiety among adults in the United States particularly YA aged 18 to 25. Using logistic regression analyses adjusted for sociodemographic variables, the study found that the overall prevalence of past-month anxiety among adults aged 18 and older increased from 5.12% in 2008 to 6.68% in 2018. However, the most pronounced rise occurred in the 18–25 age group, nearly doubling from 7.97% to 14.66% over the same period.

This surge in anxiety among YA was statistically significant ($p < .001$) and steeper than any other age group, highlighting emerging adulthood as a period of heightened vulnerability. While significant increases were also observed in the 26–34 and 35–49 age brackets, adults over 50 did not experience any statistically significant change. The findings suggest that young adulthood, already a period of developmental transition and identity exploration, is increasingly marked by psychological distress.

The study also identified sociodemographic variations: the increase in anxiety was more rapid among those who had never married compared to married individuals, and among those with a high school diploma or some college education compared to those who had not completed high

school. Although anxiety prevalence rose across all racial, gender, and income groups, these specific trends point toward growing emotional strain within the younger and more educated segments of the population.

Moreover, while over 40% of individuals with self-reported anxiety had sought mental health treatment within the past year, a significant portion did not. This is consistent with existing concerns around unmet mental health needs. The authors emphasized the potential role of increased social isolation, reduced financial stability, and rising exposure to sociopolitical stressors in explaining these patterns. They also noted that young people today face unique pressures including the pervasive influence of social media and constant digital connectivity that may contribute to chronic stress and anxiety.

Importantly, Goodwin et al. (2020) highlighted the long-term public health implications of rising anxiety in young adulthood, as early anxiety is a strong predictor of later development of mood disorders, substance abuse, and impaired functioning. These findings reinforce the urgency of developing age-appropriate, scalable, and accessible interventions particularly digital mental health tools to address and mitigate anxiety symptoms in this critical developmental period.

Coping Mechanisms and Cognitive Predictors of Anxiety in YA

In an effort to unpack the psychological mechanisms underlying anxiety in YA, Mahmoud et al. (2015) conducted a comprehensive cross-sectional study that examined the relationships between coping strategies, negative thinking patterns, social support, life satisfaction, and anxiety symptoms in a college student population aged 20 to 24. The authors drew on Beck's information processing model of anxiety (Beck & Clark, 1997), proposing that maladaptive cognitive processes and coping behaviours significantly contribute to heightened anxiety levels in emerging adults.

A key finding of the study was the mediating role of negative thinking in the relationship between demographic characteristics (such as gender) and anxiety. Female participants, for example, scored significantly higher on measures of negative thinking, which in turn predicted higher anxiety scores supporting long-standing literature that documents higher anxiety prevalence in women (DeVore & Pritchard, 2013; Simonson et al., 2011). Importantly, this highlights the cognitive vulnerability model, whereby maladaptive cognitive patterns act as a

proximal factor exacerbating anxiety, rather than demographic characteristics themselves being direct predictors.

In addition to cognitive factors, the study emphasized the role of coping strategies. Specifically, the use of maladaptive coping strategies such as avoidance, denial, or disengagement was positively associated with higher levels of anxiety. Conversely, adaptive coping strategies, which included cognitive reappraisal and help-seeking, were not directly associated with reduced anxiety levels, a somewhat unexpected result. The findings suggest that while adaptive coping may contribute to greater life satisfaction and perceived control, its direct buffering effect on anxiety symptoms remains unclear, especially in individuals already experiencing high anxiety (Mahmoud et al., 2015; Trzebiński et al., 2024).

Interestingly, the model proposed by Mahmoud et al., (2015) did not find a direct link between social support and anxiety, diverging from prior descriptive studies that have emphasized its protective role (Conneely & Hughes, 2010). Instead, perceived social support was significantly associated with greater life satisfaction, which in turn may help reduce the negative appraisal of stressors. This indirect pathway indicates that social support may function more as a resilience factor in maintaining emotional well-being, rather than directly mitigating anxiety itself.

The study also called attention to important implications for mental health interventions. Given that negative thinking mediated both demographic and coping pathways to anxiety, the authors argue that interventions targeting maladaptive cognitive patterns may be more effective than those focused solely on stress reduction techniques. Indeed, similar findings from mindfulness research (Jain et al., 2007; Sears & Kraus, 2009) suggest that reductions in negative thinking precede reductions in anxiety, further supporting a cognitive-first intervention approach.

Additionally, the findings challenge assumptions about the universal effectiveness of stress management programs. For instance, students with high levels of anxiety did not significantly benefit from adaptive coping interventions, such as stress inoculation or social skills training (Hirokawa et al., 2002). This raises important clinical questions about the timing and suitability of adaptive coping strategies, suggesting that reducing anxiety may be a prerequisite for effective use of adaptive coping tools.

In summary, Mahmoud et al. (2015) provides a nuanced framework for understanding anxiety in YA by integrating cognitive, behavioural, and social dimensions. Their findings underline the importance of targeting negative thinking and maladaptive coping mechanisms as a primary intervention strategy. These insights have direct relevance for digital CBT programs like MoodGYM, which emphasize self-monitoring, cognitive restructuring, and the development of coping skills. Incorporating these features may enhance the acceptability and efficacy of such interventions for YA navigating anxiety in the digital era.

Barriers of Mental Health Service Use in YA

Stigma Concerns

Stigma remains one of the most pervasive barriers inhibiting help-seeking among YA. Public stigma fear of being negatively judged for needing mental health care alongside internalized self-stigma, significantly lowers the likelihood of seeking professional support. A qualitative study of Saudi YA (ages 18-25) identified stigma as the primary barrier, with many participants reporting anticipation of rejection or shame for seeking help (Noorwali et al., 2022). Similarly, a systematic review finds self-reliance and embarrassment to disclose mental health problems prevent formal help-seeking among youth (Rickwood et al., 2015). In Aotearoa New Zealand, similar concerns are reported. Young people frequently describe fear of discrimination, judgement, or diminished social status as central reasons for not disclosing distress (Garrett et al., 2024). Despite longstanding anti-stigma initiatives such as the *Like Minds. Like Mine* programme, stigma persists as a barrier, particularly for Māori and other groups who already experience health inequities (Kemper & Kennedy, 2021).

Lack of Symptom Recognition, Scepticism, and Fear

Low mental health literacy contributes to delayed help-seeking, as many YA fail to recognize symptoms or attribute them to normative stress. Gulliver et al. (2010) observed that many college students believed they could manage their problems independently, a finding echoed in community college samples where “can handle it by myself” was the most common reason for not seeking care (Coêlho et al., 2021; Ticknor et al., 2026). New Zealand youth similarly report difficulty identifying when distress becomes clinically significant and describe uncertainty about how to access appropriate support (Coughlan et al., 2024). Additionally, scepticism about

effectiveness, doubts whether treatment will help consistently deter individuals from accessing services (Cadigan et al., 2019).

Substance Use Patterns

Substance use both reflects coping with anxiety and complicates service engagement. Data from a national survey (ages 18–23) revealed that YA with unmet mental health needs were significantly more likely to engage in binge drinking, marijuana use or dependence suggesting a link between avoidance coping and under-utilization of mental health services (Goodwin et al., 2013). In Aotearoa, longitudinal research such as the Christchurch Health and Development Study highlights strong associations between substance use and mental health difficulties, showing how comorbidities exacerbate risk trajectories (Fergusson et al., 2015). These findings suggest that substances use both masks underlying mental health concerns and complicates pathways to timely intervention. Such patterns reinforce a self-medication cycle that can delay formal treatment until crises emerge.

Financial Constraints

Cost remains a major practical barrier. In multiple studies, YA who perceived a need but did not access mental health services cited inability to afford care even among insured populations (Kulshrestha & Shahid, 2022). Rising co-payments or absence of coverage significantly reduce the rate of people/emerging adults seeking help. In New Zealand, cost similarly acts as a gatekeeper at a primary care level. Jeffreys et al. (2022) found that 14 % of the population reported not visiting a GP due to cost, with Māori disproportionately affected (22 %). Because GPs often serve as the referral point for mental health services, these financial barriers at the entry stage reduce opportunities for specialist support.

Travel, Time, and Commitment

Logistics such as scheduling conflicts, commuting time, and competing responsibilities create structural challenges. Community college students often juggle work, caregiving, and study, leaving little time for appointments a barrier frequently cited as “no time” to attend therapy sessions. In another qualitative research, youth noted long clinic wait times, inflexible hours, and travel distance as deterrents to accessing care (Rickwood et al., 2015). In New Zealand, transport barriers are a recognised determinant of unmet health needs. Craig (2024) estimated that 159,000 people were unable to access GP services due to lack of transport, disproportionately affecting

Māori and those living rurally. For youth, these barriers are compounded by competing responsibilities, meaning time and travel costs reduce engagement. Although telehealth and online interventions offer partial solutions, connectivity and privacy challenges remain, particularly in rural communities (Babbage et al., 2020).

Symptom Constraints and the Catch-22

High levels of anxiety or depression can paradoxically reduce the ability to seek help. Emotional distress may lead to avoidance, withdrawal, or inability to initiate contact, a phenomenon described as a "catch-22." Rickwood et al. (2015) emphasize that symptoms themselves can suppress motivation to seek treatment. In Koh et al., (2021), emotional distress and privacy concerns further reduced digital and in-person service uptake, revealing how symptom burden acts as its own barrier. New Zealand research similarly indicates that many young people delay engagement until crisis point, suggesting severe distress often undermines proactive help-seeking (Nguyen, 2025). This highlights the importance of low-threshold, youth-friendly services where initial contact is simplified and less demanding.

Non-Responsive or Fragmented Services

YA frequently report dissatisfaction with available mental health systems. Long wait times and care discontinuity especially during transition from adolescent to adult services create critical gaps in support for emerging adults. A news case report described a 10-month wait for a mental health referral, during which a young adult’s condition deteriorated substantially, forcing reliance on emergency services. Moreover, young people perceive the mental health system as fragmented and siloed, discouraging help-seeking (Rickwood et al., 2015).

Workforce shortages amplify these issues. In New Zealand, the psychiatrist-to-population ratio is among the lowest in the Organisation for Economic Co-operation and Development (OECD), resulting in long waits and limited access to specialist care for youth (The Royal Australian and New Zealand College of Psychiatrists [RANZCP], 2019).

Preference for Self-Reliance

Consistent with previous literature, self-reliance emerged as a significant psychological barrier. Participants frequently expressed a desire to manage their mental health on their own, citing values of independence and personal responsibility. While autonomy is developmentally

appropriate in emerging adulthood, it can also reinforce patterns of delayed intervention, particularly when YA feel that reaching out for support contradicts their self-image or coping identity. This aligns with Gulliver et al. (2010), who identified a strong preference for informal or individual coping strategies among youth.

Fear of Negative Outcomes

Anticipated negative consequences of help-seeking constitute another significant psychological barrier. Some young people fear that opening up about their mental health difficulties might distress or burden loved ones, potentially causing worry or emotional upheaval within the family system. Others were concerned that sharing their concerns could exacerbate their distress leading to worsened emotional states or increased vulnerability. These anxieties echo with broader evidence suggesting that perceived consequences of disclosure often outweigh the perceived benefits among young people (Gulliver et al., 2010; Rickwood et al., 2015).

Difficulty Identifying or Articulating Mental Health Concerns

Lastly, the study highlighted how difficulties in recognizing or verbalising distress contributed to help-seeking avoidance. Many respondents admitted they were either unsure how to describe what they were experiencing or were afraid to articulate their symptoms. This aligns with findings on alexithymia and emotional suppression in emerging adulthood, where individuals struggle to distinguish between normative stress and clinical symptoms. This communication barrier suggests that improving mental health literacy must include not only knowledge dissemination but also skill-building in emotional awareness and articulation (Salaheddin & Mason, 2016).

The findings of Salaheddin and Mason (2016) illustrate the complexity of help-seeking behaviours among YA, where psychological, cultural, and systemic factors intersect to create substantial barriers. Stigma, self-reliance, misrecognition of need, fear of consequences, and logistical inaccessibility form a network of deterrents that must be addressed holistically. For interventions like e-CBT programs (e.g., MoodGYM), these insights are crucial. Online and anonymous interventions may reduce some of the barriers related to stigma, time, and cost but they must also incorporate strategies to enhance self-recognition, reduce fears of negative outcomes, and build emotional expression skills to be truly effective.

While barriers to mental health care affect many populations, these challenges can be particularly striking in rural settings. Geographic isolation, limited availability of specialised services, transportation difficulties, and heightened concerns about privacy within small communities often compound the structural and psychological barriers already present in mental health help-seeking. According to the Rural Health New Zealand Snapshot 2024, approximately one in five New Zealanders (around 20%) live in rural communities, highlighting the significant number of individuals whose access to health and mental health services is shaped by geographic distance, workforce shortages, and infrastructure limitations. Consequently, examining anxiety and mental health access within rural New Zealand contexts is essential for understanding how geographic and structural factors shape psychological wellbeing and service engagement.

Anxiety in Rural New Zealand

Rural settings present unique challenges to mental health, including geographical isolation, limited access to specialized services, greater stigma, and socioeconomic fluctuations tied to agriculture or resource economics (Babbage et al., 2020; Batterham et al., 2022). A systematic review of quantitative studies on mental health in rural populations found that rural residents often report higher levels of psychological distress, common mental disorder symptoms (including anxiety), and suicidality than their urban counterparts, although effect sizes and consistency vary by region and methodology (Batterham et al., 2022).

In New Zealand, research on rural mental well-being is limited but revealing. The studies that do exist provide important insight and illuminate the complex ways in which community structures, place-based identity, and structural barriers interact with individual vulnerability to influence anxiety risk and coping in rural settings. Jaye et al. (2022) conducted a qualitative case study in a small rural NZ community, exploring sources of health and well-being. Their findings outlined that rural residents often connect mental health with relational, environmental, and community factors such as strong community cohesion, but also stressors of isolation, limited access to care, and environmental unpredictability (Jaye et al., 2022). These community-level factors likely interact with individual vulnerability to shape anxiety risk and coping in rural settings.

Moreover, rural communities sometimes exhibit less uptake of digital health services due to lower broadband infrastructure, digital literacy, and cultural attitudes. Babbage et al. (2020) examined rural community attitudes in New Zealand towards using online health and wellness

services. They found that while some rural residents welcomed the anonymity and convenience of online tools, barriers such as connectivity issues, scepticism about online care, and preference for face-to-face relationships impeded uptake (Babbage et al., 2020). This is directly relevant to digital interventions (like MoodGYM) which can prove to be highly valuable to the rural population.

The broader national picture in New Zealand also demonstrates rising levels of anxiety and related psychological distress. Data from the New Zealand Health Survey indicate that one in three adults (34.8%) experienced at least mild symptoms of anxiety or depression in the past two weeks in 2021–23, representing a marked increase from 25% in 2016–17 (Ministry of Health, 2024). Younger people are disproportionately affected, with those aged 15 to 24 showing the steepest increases in anxiety symptoms compared to older adults. Similarly, Fleming et al., (2022) reported persistent prevalence of anxiety, low mood, and suicidal thoughts across multiple national cross-sectional surveys, again with higher rates among youth. While these findings establish the increasing burden of anxiety in New Zealand, they seldom distinguish between rural and urban populations, leaving a gap in understanding the rural experience of anxiety specifically.

Internationally, urban–rural differences in anxiety have been the subject of increasing interest, and New Zealand has been included in comparative analyses. Finnemann et al. (2025) examined urbanicity gradients in depression and anxiety across datasets from the United Kingdom, Norway, and New Zealand. In the New Zealand sample, they found that anxiety prevalence was higher in urban areas compared to rural settings, while no consistent rural–urban differences were observed for depression. This challenges the assumption that rurality is universally associated with poorer mental health outcomes, suggesting that specific urban stressors, such as population density and environmental strain, may elevate anxiety risk in city environments. However, such broad-scale analyses risk masking within-rural variation, such as differences between semi-rural and remote communities or between farming and non-farming populations, and they do not capture service access or cultural dynamics (Finnemann et al., 2025). This prompts the need for more refined, localized research on rural anxiety in the New Zealand context.

Another body of literature focuses on the mental health of farming and agricultural populations, where anxiety-related symptoms often arise in the context of financial instability, environmental uncertainty, and work-related stress. Reviews of agricultural mental health internationally highlight higher rates of stress, anxiety, and suicide among farmers than among non-farming rural populations, driven by economic volatility, climate change, and long working hours (RuralHealthInfo.org, 2024). New Zealand evidence aligns with these trends. For instance, qualitative research examining the 2017 Mycoplasma Bovis outbreak documented substantial psychosocial distress among affected farmers, with participants reporting prolonged stress, loss of autonomy, and emotional trauma linked to livestock culling and the disruption of rural livelihoods (Noller et al., 2022). Similarly, the Kellogg Rural Leaders Program report (2022) "Building Mental Wellness in the Rural Sector" noted that 14.3% of New Zealand adults reported a lifetime diagnosis of depression and 6.1% reported lifetime anxiety diagnoses, with rural stressors such as isolation, regulatory pressure, and sleep deprivation identified as major contributors to mental health concerns (Matte, 2022). While these studies connect rural stressors to mental health more broadly, few focus directly on anxiety disorder prevalence or the lived experiences of rural individuals coping with anxiety.

Barriers to mental health care in rural areas extend to digital interventions, which are increasingly promoted to bridge treatment gaps. While digital tools such as cCBT have potential to increase treatment accessibility in rural regions, issues of trust, digital literacy, and infrastructure remain barriers to widespread adoption.

Despite this growing body of evidence, there are several notable gaps in literature. First, while national-level surveys demonstrate increasing rates of anxiety in New Zealand, there is little research disaggregating these data to provide clear prevalence estimates for rural populations. Second, although some studies have explored rural mental health stressors broadly, there has been limited investigation into the specific lived experiences of anxiety among rural New Zealanders. Third, research on digital intervention acceptability in rural contexts remains limited, with few studies focusing on YA in particular. Finally, cultural considerations, especially the mental health needs of rural Māori and bicultural obligations under Te Tiriti o Waitangi, are often overlooked in this research.

Accessing mental health care in New Zealand is often challenging and can present significant difficulties. Gluckman (2017) highlighted that the country's mental health system is fragmented and lacks cohesion. This concern has been reinforced by the New Zealand Ministry of Health (2018, 2021), which reported that existing services are failing to adequately meet the needs of the population, with demand for mental health support exceeding available resources. Nonetheless, focusing solely on deficits overlooks the strengths and assets present within communities. As McKenzie et al. (2018) and Stewart, Jameson, and Curtin (2015) argue, it is essential to adopt a more multifaceted approach that considers the unique characteristics and contexts of local communities.

A recent embedded case study by Ferris-Day et al. (2025) examines the complex interplay of historical, cultural, social, and political factors that shape how rural men access or struggle to access mental health support in one rural region of Aotearoa New Zealand. Their critical discourse analysis, informed by Foucault and Fairclough frameworks, highlights how national policies often misalign with the lived realities of rural communities, perpetuating invisibility and disconnection (Ferris-Day et al., 2025).

Conducted in a geographical area of approximately 8,423 km² with a population of about 35,000 across small towns and villages, the study highlights how geographical isolation and limited structural infrastructure severely hinder access to mental healthcare (Ferris-Day et al., 2025). These structural constraints, including poor transport and unreliable connectivity, create substantial barriers to reaching both in-person and digital services.

The research reveals chronic workforce shortages, with rural areas lacking sufficient mental health professionals and support services. As a result, mental healthcare tends to be crisis-driven and episodic rather than preventive and continuous. This fragmentation reflects a broader systemic disconnection noted by national reviews (Ferris-Day et al., 2025).

Cultural and social norms also play a key role. In the study, men described stigma, gossip, and strong ideals of self-reliance as deterrents to seeking help in tight-knit communities (Ferris-Day et al., 2025). These sociocultural dynamics make it difficult for individuals to express distress or ask for help without fear of social repercussions.

Moreover, the case study illuminates how top-down policy approaches often fail to engage rural users meaningfully. Policies are designed at macro levels yet implemented without sufficient input from local people, leading to services that do not meet local needs and remain underutilized (Ferris-Day et al., 2025). The metaphoric narrative of "Wally hidden in plain sight" further captures how service users can feel unseen and unsupported despite being physically present (Ferris-Day et al., 2025).

The research argues for localized, contextually informed, non-clinical approaches to mental health support. Participants emphasized the need for services embedded within communities in spaces like marae, rural hubs, or shared community venues rather than urban-centric clinical settings (Ferris-Day et al., 2025). Such support systems would potentially reduce stigma, enhance accessibility, and better align with community realities.

Ferris-Day et al. (2025) conclude that critical perspectives on power, policy, and language are essential to reshape rural mental health service delivery. Rather than imposing standardized models, mental health services should be co-designed with rural communities, attuned to local social structures, cultural norms, and lived experience (Ferris-Day et al., 2025).

Computer Based Treatment

Globally, many individuals with mental disorders still lack access to traditional mental health care due to barriers such as limited availability of trained professionals, high treatment costs and lack of awareness. While the majority of this population own mobile phones, positioning digital solutions as a promising pathway to enhance both accessibility and quality of mental health services (Berrouiguet et al., 2016). Internet/computer and mobile-based psychological interventions offer a diverse option of uses, ranging from mobile apps that monitor health behaviours, stand-alone self-help programmes, to blended models that integrate digital elements with face-to-face therapy (Rajeshkumar, 2024). A common thread across these interventions is their use of cognitive, emotional and behavioural change techniques, which allow users to apply therapeutic strategies directly in real-world contexts (Ebert et al., 2018). These computer based mental health interventions can be differentiated by their technological platform (e.g., smartphone vs web), degree of human support (guided vs unguided), theoretical orientation (often CBT-based), and their clinical or preventive indications (Baumeister et al., 2014; Coyle et al., 2007).

Computerized Cognitive Behavioural Therapy for Older Adolescent

Computerized cognitive behavioural therapy (cCBT) has emerged as a promising digital mental health intervention for older adolescents, offering the potential to overcome barriers such as stigma, financial constraints, limited access to trained professionals, and geographic isolation (Stallard et al., 2010). One of the most comprehensive syntheses of evidence in this field is provided by Christ et al. (2020), whose systematic review and meta-analysis evaluated the effectiveness of cCBT in treating anxiety and depression among adolescents and YA. The review incorporated 24 eligible studies from an initial pool of 7,670 records. While most included trials (22/24) were judged to have a high risk of bias, primarily due to reliance on self-report measures and suboptimal handling of missing data, the findings nonetheless indicated significant post-treatment benefits when cCBT was compared with passive control conditions. Specifically, small-to-medium pooled effect sizes were observed for depressive symptoms (g = 0.51, 95% CI 0.30–0.72, NNT = 3.55) and anxiety symptoms (g = 0.44, 95% CI 0.23–0.65, NNT = 4.10). When compared to active treatment controls, cCBT produced similar effects for anxiety symptoms (g = 0.04), whereas the evidence for depressive symptoms remained inconclusive due to high heterogeneity (I^2 = 90.63%). Long-term follow-up analyses indicated a small but significant effect for depressive symptoms against passive controls (g = 0.27, NNT = 6.58), though other follow-up effects were non-significant. The authors concluded that cCBT is beneficial for reducing anxiety and depression post-treatment compared with passive controls but emphasized the need for higher-quality trials with active comparators and extended follow-up periods to better establish its comparative effectiveness and sustainability.

One notable example of a cCBT intervention for adolescents is SPARX (Smart, Positive, Active, Realistic, X-factor thoughts), a gamified self-help programme grounded in CBT principles. Originally developed in New Zealand, SPARX was designed for adolescents with mild to moderate depression, presenting therapeutic concepts within a virtual fantasy world (Khan et al., 2024). User’s complete challenges aimed at overcoming "GNATs" (Gloomy Negative Automatic Thoughts), thereby learning and practicing CBT skills. In its first randomized controlled trial, a non-inferiority study, SPARX was compared with treatment as usual (TAU; face-to-face therapy) among adolescents seeking help for depression. Per-protocol analysis demonstrated that SPARX was not inferior to TAU, with post-intervention reductions in Children’s Depression Rating

Scale-Revised scores of 10.32 for SPARX versus 7.59 for TAU, and these improvements were maintained at three-month follow-up. Importantly, SPARX was reported to be both acceptable and safe for adolescent users (Merry et al., 2012).

Subsequent New Zealand-based trials have reinforced these findings. Fleming et al., (2019) found significantly greater reductions in depression and anxiety symptoms over five weeks in adolescents using SPARX compared to a wait-list control, with benefits persisting at ten-week follow-up in a cohort excluded from mainstream education. Lucassen et al. (2023) adapted SPARX into a "Rainbow" version for sexual minority adolescents, reporting significant pre–post reductions in both depression and anxiety symptoms, high completion rates (81% completed all seven modules), and positive acceptability ratings (80% would recommend to a friend). However, attempts to adapt SPARX for use with youth offenders were less successful; a small-scale trial reported limited engagement and largely neutral or negative feedback, suggesting poor acceptability in this setting.

Evidence from outside Australasia has been more mixed for SPARX benefits. Trials conducted in the Netherlands and Ireland found no significant benefits over no-intervention or monitoring controls, while an Australian resilience-focused adaptation demonstrated short-term reductions in depression symptoms relative to controls, although these gains were not sustained at 18-month follow-up (Khan et al., 2024). Collectively, the literature suggests that SPARX is most effective and acceptable in its original New Zealand context, with variable results when implemented internationally. As digital mental health interventions are often sensitive to cultural, systemic, and contextual factors, further research is required to evaluate SPARX and cCBT more broadly across diverse settings to determine generalizability and to refine engagement strategies for different adolescent subgroups (Del Vecchio et al., 2024).

Wickersham et al., (2022) conducted a systematic review and meta-analysis focusing exclusively on cCBT for adolescents aged 11 to 19 years. Sixteen randomized controlled trials met the inclusion criteria, with 13 contributing to the meta-analysis. Study quality was variable, with 31% rated as good, 13% as fair, and 56% as poor. The pooled results indicated small but statistically significant effects of cCBT in reducing anxiety (SMD = -0.21, 95% CI = -0.33 to -0.09; I^2 = 36.2%) and depression symptoms (SMD = -0.23, 95% CI = -0.39 to -0.07; I^2 = 59.5%) at follow-up compared with control conditions. Secondary analyses suggested cCBT may be

comparable in efficacy to alternative active interventions such as face-to-face therapy or treatment as usual. This review reinforces the potential of cCBT as an effective treatment modality for adolescents and outlines the importance of identifying its active components to enhance both feasibility and acceptability.

Stjerneklar, Hougaard, and Thastum (2019) investigated which factors predict clinical response to therapist-guided internet-based cognitive behavioural therapy (iCBT) among adolescents with diagnosed anxiety disorders. Drawing on a randomized controlled trial framework, the authors followed 65 adolescents (ages 13–17) who received 14 weeks of therapist-guided iCBT and assessed outcomes from pre-treatment through 12-month follow-up. The study examined an array of candidate predictors spanning baseline clinical severity (self- and parent-reported anxiety, clinician-rated diagnostic severity, comorbid depressive symptoms), demographic variables (age, gender, computer comfort), and therapy-process indicators (module completion, therapist contact frequency and duration, parental support, and therapeutic alliance). Outcome measures included both self-reported symptom change and clinician-rated diagnostic severity, allowing a more robust assessment of clinical benefit (Stjerneklar et al., 2019).

Key findings complicate some common assumptions about who benefits most from iCBT. Contrary to expectations that lower baseline severity or greater parent/therapist contact would predict better outcomes, higher baseline anxiety and depressive symptoms were associated with greater symptom improvement over time. Female gender and higher comfort with computers also predicted increased treatment response. Importantly, none of the hypothesized therapy process variables (e.g., number of completed modules, amount of therapist phone contact, degree of parental support, or measured alliance) significantly predicted outcomes. The authors interpret these results as indicating that therapist-guided iCBT can be acceptable and effective even for youths with relatively high symptom levels, and that personal characteristics (gender, symptom profile, and technical familiarity) may matter more than simple metrics of program exposure (Stjerneklar et al., 2019).

Methodologically, the study's strengths include its clinical sample (diagnosed anxiety disorders rather than subclinical symptoms), multi-informant predictors (self, parent, clinician), and long-term follow-up. However, sample size constraints limit statistical power to detect smaller effects, and the single cultural/geographic setting (Denmark) may reduce generalizability to different

health-service contexts. The null findings for process variables particularly adherence also raise questions about how best to operationalize and measure meaningful engagement in iCBT: raw module counts may not capture cognitive or behavioural integration of therapeutic techniques (Stjerneklar et al., 2019).

For research and practice with older adolescents, including university-age cohorts, this study offers two important implications. First, it challenges exclusionary assumptions: higher baseline severity need not automatically preclude iCBT; indeed, those with greater need may show substantial benefit when guided support is offered. Second, it highlights computer comfortability as an actionable moderator suggesting that small investments in onboarding, digital familiarization, or user-centred design could enhance outcomes. For a MoodGYM focused study among New Zealand YA, Stjerneklar et al. (2019) findings outline the value of including participants across a range of symptom severities (with appropriate safeguards), assessing computer/digital literacy as part of baseline profiling, and moving beyond crude adherence metrics to richer measures of how users apply learned CBT skills in daily life.

Computerized Cognitive Behavioural Therapy for University Students

University life often consists of developmental shifts, academic pressures, social change, and financial stress factors that can elevate anxiety symptoms(Gall et al., 2000; Greenfield, 2009; Liu et al., 2019). Increasingly, internet delivered cognitive behavioural therapy (cCBT) has been evaluated as a possible solution to address barriers such as stigma, limited access, or the high cost and time demands of face-to-face therapy (Slimmen et al., 2022). A recent and rigorous contribution to this field is the meta-analysis by Oliveira, Pacheco, Borges, Meira, and Santos (2023), which specifically targeted cCBT for university students experiencing anxiety.

Oliveira et al. (2023) identified 15 randomized controlled trials comprising 1,619 participants, comparing ICBT interventions to control conditions among university students. The included studies ranged in target anxiety profiles, some combining depression and anxiety, others focusing on social anxiety, generalized anxiety, test anxiety, or comorbidity with insomnia. Their pooled analysis demonstrated a small to moderate effect size (Hedges' $g = –0.48$; 95% CI: –0.63, –0.27; $p < .001$) at post-test, indicating that students who received cCBT experienced significantly lower anxiety symptoms compared to controls. Heterogeneity among studies was moderate to

high (I^2 = 67.30%), suggesting variation in effect sizes across interventions, possibly due to differences in guidance, delivery mode, and participant characteristics (Oliveira et al., 2023).

Guided cCBT programs offering human feedback, coaching, or support tended to produce somewhat larger effect sizes than unguided ones, although not all differences were statistically significant. Duration of intervention varied widely: some programs were very short (about 2 weeks), others extended up to 24 weeks. Interestingly, shorter interventions in some cases showed comparably large effects, although consistency was not uniform. Mode of delivery was predominantly web-based; few studies used mobile apps or hybrid models.

The review highlighted consistent challenges: engagement and adherence emerged as common limitations, with dropout and incomplete module usage reducing potential impact. There was also little clarity across studies about which specific components (e.g., relaxation, exposure, psychoeducation) drive the therapeutic change, or how demographic variables (such as academic discipline, baseline anxiety severity, culture) influence outcomes. Moreover, while many studies report post-test improvements, fewer address long-term follow-ups or durability of effect.

Oliveira et al. (2023) provide strong support for cCBT as a viable intervention for anxiety in university students but emphasize the need for further research into optimization: improving adherence, identifying active components, and tailoring interventions to student subpopulations.

A recent Phase IV clinical trial in New Zealand provides particularly strong evidence for the effectiveness and acceptability of iCBT when implemented as part of routine university counselling services. Dear et al., (2024) conducted a single-group prospective trial involving over 1,000 students who were offered the UniWellbeing Course between 2018 and 2023 through a university counselling service. Participants completed standard measures of anxiety and depression weekly during the course, at post-treatment, and a subsample at 3-month follow-up, enabling examination of both immediate and short-term sustained effects.

Results showed significant reductions in both depression (35%) and anxiety symptoms (36%) with moderate to large effect sizes: Hedges' g ≈ 0.56 for depression and g ≈ 0.73 for anxiety. Satisfaction with the intervention was high (>60%), and the rates of symptom deterioration were relatively low (<10%). Follow-up data (3 months) demonstrated that improvements were largely maintained.

This study is especially notable because it reflects real-world implementation rather than efficacy under tightly controlled RCT conditions. It was delivered through existing university counselling services, with students choosing this option among others, and with counsellors receiving training and support. This design increases external validity and relevance for policy and practice. Moreover, weekly monitoring, use of short-form measures (PHQ-2, GAD-2 in later portions), and the tracking of satisfaction and adherence offer insights into both outcomes and processes (Dear et al., 2024).

However, some limitations affected the findings. The single-group design lacks control condition, meaning improvements could be due in part to regression to the mean, natural symptom fluctuation, or non-specific effects of being in counselling. Also, the sample was self-selecting and predominantly female; mild symptom groups showed smaller improvements.

Overall, Dear et al. (2024) strongly support that iCBT can be an acceptable and clinically meaningful component of university mental health services. This indicates that programs like MoodGYM may similarly have potential in real university settings, and it outlines the importance of exploring not just whether change occurs, but how participants perceive the tools, how engaged they remain, and which features are most and least helpful.

Computerized Cognitive Behavioural Therapy for YA

The integration of computerized cognitive behavioural therapy (cCBT) into mental health care has expanded significantly in recent years, with growing evidence demonstrating its effectiveness in reducing symptoms of anxiety and depression among young people. As digital interventions offer scalable, cost-effective, and accessible alternatives to traditional face-to-face therapies, their relevance for YA, who often encounter barriers such as stigma, cost, or limited service availability has become increasingly evident (Ebert et al., 2015; Hollis et al., 2017). This section reviews four recent studies that investigate the efficacy, acceptability, impact and potential of cCBT in youth and young adult populations to align with the aim of the study.

Pennant et al. (2015) conducted one of the most comprehensive systematic reviews and meta-analyses on cCBT for children and young people aged 5–25. Analysing 27 randomized controlled trials (RCTs), they found positive effects of cCBT in reducing both anxiety (SMD = −0.77) and depression (SMD = −0.62) among adolescents and YA aged 12–25. Importantly,

while small effects were observed in general population samples, the strongest benefits were reported among young people with elevated symptoms or risk of clinical disorders. However, effectiveness in younger children (5–11 years) remained inconclusive, highlighting developmental considerations in cCBT application. This large-scale evidence positions cCBT as a promising treatment and preventive tool but also provides insight on the need for further research into program design and sustainability across developmental stages.

A meta-analysis by Ebert et al. (2015) synthesized evidence from 13 randomized controlled trials involving 796 participants aged up to 25 years. The study found a moderate-to-large overall effect size (Hedges' g = 0.72), with cCBT demonstrating superiority over control conditions for both anxiety-focused (g = 0.68) and depression-focused (g = 0.76) interventions, as well as for transdiagnostic programs addressing both conditions (g = 0.94). These findings provide robust support for the efficacy of cCBT as a treatment modality for youth mental health difficulties, with a number needed to treat (NNT) as low as 2.44, suggesting strong clinical utility.

Importantly, the meta-analysis reported low heterogeneity, indicating consistent effects across studies, and highlighted the potential for cCBT to serve as an effective alternative when face-to-face therapy is not feasible. However, the authors noted key limitations, including a lack of research into long-term outcomes, variability in program formats, and the need for individual patient data meta-analyses to better understand which populations benefit most (Ebert et al., 2015).

While meta-analyses confirm the efficacy of cCBT in reducing anxiety and depression among young adults (Ebert et al., 2015), questions remain regarding the feasibility, usability, and acceptability of such interventions in real-world settings. Geirhos et al. (2022) conducted a randomized controlled pilot trial to evaluate *youthCOACH*, a guided internet- and mobile-based CBT designed for adolescents and YA with chronic medical conditions and comorbid anxiety or depression. Findings indicated moderate satisfaction and therapeutic alliance, with intervention completion rates at 60%, comparable to other digital CBT trials. Importantly, no significant adverse effects were reported, and preliminary evidence suggested medium-term benefits for reducing anxiety and depression symptoms. However, the study also highlighted challenges with adherence and engagement, highlighting the need for strategies to improve completion rates and participant motivation.

This evidence reinforces the notion that while cCBT holds promise as a low-threshold, accessible intervention for youth populations, its success depends not only on clinical efficacy but also on user experience, perceived helpfulness, and sustained engagement. These factors have received limited exploration in literature, particularly in qualitative investigations. The current thesis builds on this gap by exploring YA perceptions of cCBT in New Zealand, with a focus on identifying barriers and facilitators that influence adherence and engagement in practice.

Building on questions of user experience, Treanor et al. (2017) conducted an umbrella review examining the acceptability of cCBT among adults with anxiety and depression. Although not limited to youth, their findings provide valuable insights into engagement and adherence, key issues for digital mental health in younger populations. They reported high rates of dropout (34–36%), with guided cCBT (support via telephone, email, or forums) yielding higher adherence compared to unguided formats. Barriers to use included lack of motivation, technical issues, and preference for face-to-face therapy. On the other hand, participants valued the anonymity and flexibility of cCBT. This suggests that while cCBT can be effective, program design must address engagement challenges especially important for YA, who may balance competing academic, social, and work demands.

More recently, Liu et al. (2021) tested a customized cCBT program in a clinical sample of Covid-19 patients with depression and anxiety. Their RCT demonstrated that cCBT, when combined with treatment as usual, significantly reduced depression, anxiety, and insomnia symptoms compared to treatment as usual alone. These findings emphasize the adaptability of cCBT to diverse contexts, including acute health crises, and highlight its utility as a non-pharmacological intervention. Although this study did not focus specifically on YA, it provides strong evidence that cCBT can deliver clinically meaningful outcomes in highly stressed populations, reinforcing its broader applicability as a mental health intervention.

Taken together, these studies demonstrate strong evidence for the efficacy of cCBT in treating anxiety and depression among YA, as well as insights into the challenges of engagement, adherence, and long-term effectiveness. Yet several gaps remain. First, while meta-analyses confirm short-term symptom reduction, little is known about the sustainability of benefits over time. Second, engagement and adherence challenges remain significant barriers, particularly for unguided programs. Third, despite increasing international evidence, few studies have examined

the acceptability and effectiveness of cCBT interventions in New Zealand young adult populations, where unique cultural and systemic factors may influence uptake. Addressing these gaps, the present study explores YA experiences using MoodGYM in New Zealand, focusing on perceived effectiveness, usability, and barriers to engagement.

Computerized Cognitive Behaviour Therapy for Rural Population

People living in rural and remote communities have greater difficulty accessing mental health services and evidence-based therapies, such as CBT, than their urban counterparts (Griffiths & Christensen, 2007). Computerized CBT can be used to effectively treat depression and anxiety and may be particularly useful in rural settings where there is a lack of suitably trained practitioners or other hindering factors (DiNapoli et al., 2017).

Vallury et al., (2015) conducted a systematic review examining the use of cCBT for managing anxiety and depression in rural and remote communities, where access to evidence-based psychological treatments such as CBT is often limited due to a shortage of trained professionals. From an initial pool of 2,594 studies, 11 met the inclusion criteria. Among studies that reported outcomes by geographic location, CCBT demonstrated comparable effectiveness for both rural and urban participants. Findings on adherence were mixed, with rural residence sometimes associated with higher engagement and at other times with lower completion rates. Interestingly, rural participants appeared to view cCBT as more acceptable than their urban counterparts, with less desire for additional face-to-face interaction and greater appreciation for the confidentiality afforded by computerized delivery.

This review synthesizes the global evidence regarding the clinical effectiveness and acceptability of cCBT interventions for preventing or treating anxiety and depression in people who live in rural and remote areas. It provides recommendations for future research and practice with relevance to rural communities in English-speaking countries around the world.

The BiP Anxiety trial investigated the feasibility and potential efficacy of a therapist-guided ICBT program for children with anxiety disorders in a rural outpatient Child and Adolescent Mental Health Service (CAMHS) (Jolstedt et al., 2018). Unlike prior research by the same group, this was the first to be implemented in a rural clinic without direct involvement from the research team in assessment, treatment, or data collection. Both families and clinicians reported general

satisfaction with the program, with clinicians highlighting reduced therapist drift and increased patient self-efficacy as benefits. The dropout was low (11%), and most families who completed satisfaction questionnaires agreed that the treatment reduced anxiety and would recommend it to others.

Treatment adherence varied: 53% of participants completed the first four modules, allowing them to begin exposure exercises, while 63% reached module three. Clinicians noted that ICBT facilitated the identification of further intervention needs, suggesting it could be an effective first-line option in rural settings. Clinician and self-reported measures showed significant symptom and functional improvements, with large effect sizes. At post-treatment, 47% were classified as responders, increasing to 53% at three-month follow-up, and 68% no longer required psychiatric care. These outcomes are comparable to previous university-based trials and other ICBT studies, though somewhat lower than face-to-face CBT response rates. Importantly, the program required only one-third of the therapist time typically needed for in-person CBT.

The findings suggest that ICBT is a promising, time-efficient, and geographically adaptable option for treating paediatric anxiety in rural contexts, potentially easing demand on overstretched CAMHS. However, missing data, variable adherence, and the small, selectively recruited sample limit generalisability. Despite these constraints, the results indicate that around half of participating children achieved meaningful clinical improvement, highlighting cCBT's potential role in improving access to evidence-based care in underserved rural regions.

MoodGYM as Computer-Based Intervention

MoodGYM (https://moodgym.anu.edu.au/moodgym) is widely regarded as one of the most well-researched and evidence-supported computerized cognitive behavioural therapy (CBT) programs for adolescents and adults experiencing symptoms of anxiety and depression. Numerous studies have evaluated its outcomes, particularly in high school and university settings (Calear et al., 2013; Lee et al., 2021; O'Kearney et al., 2006; Robertson, 2017). Developed by the Australian National University Centre for Mental Health Research, MoodGYM is free for Australian population and is available for use in New Zealand for a substantial fee of $45 NZD. It is an interactive, online intervention recommended for individuals aged 16 years and older. Its primary purpose is preventative helping young people learn coping skills and reduce the risk of developing depression

and anxiety rather than providing clinical treatment for those already experiencing severe depressive or anxiety disorders (Perry, 2017).

The program delivers key CBT principles for anxiety and depression through five sequential modules: *Feelings*, *Thoughts*, *Unwarping*, *De-stressing*, and *Relationships*. Each module incorporates in-session exercises, between-session homework activities, and a downloadable workbook to track personal progress. Modules are designed to be completed in order, with an estimated completion time of 30–45 minutes per module (Fleming et al., 2018). Altogether, MoodGYM offers 28 interactive exercises and 13 quizzes.

Its structure reflects adaptations of CBT components for young adult use as recommended in prior literature. Cahil et al., (2009) highlighted the value of teaching young people to identify and evaluate negative thoughts, supported by homework activities that test thought accuracy, skills embedded within the Thoughts and Unwarping modules. To make these concepts relatable, the program uses fictional characters and scenarios. McLean & Woody, (2001) advocated pleasant activity scheduling as a means of improving mood; this technique is incorporated into both the *Unwarping* and *De-stressing* modules. They also recommended training in problem-solving and stress management, which MoodGYM delivers primarily through the *De-stressing* and *Relationships* modules.

Although the clinician's manual describes MoodGYM as an anxiety-prevention program, usage statistics indicate that many users present with above-average anxiety symptoms compared to the general population (Christensen et al., 2004). Some empirical evidence suggests the program can reduce anxiety symptoms in adolescent and YA (Sethi, 2013; Zaidalkilani, 2017). CBT techniques for depression and anxiety share several overlapping elements, such as identifying maladaptive thoughts, emotional regulation, and relaxation strategies (Merrell, 2008) though the tripartite model by Clark & Watson (1991) points out that physiological arousal is uniquely associated with anxiety. While MoodGYM does contain a relaxation component in Module 4, these exercises are not explicitly linked to anxiety symptom reduction, and the manual does not distinguish which modules target depression versus anxiety (Christensen et al., 2004). Nevertheless, given the high comorbidity between depression and anxiety, MoodGYM may still serve as a beneficial tool for individuals experiencing symptoms of both conditions.

MoodGYM Assessments

One of MoodGYM's primary measurement tools is the Goldberg Depression and Anxiety Scales (Goldberg et al., 1988), originally developed for general practitioners to assess the severity of anxiety and depressive symptoms over the past month. Users complete the scales as a baseline pre-test, at the start of each module, and again as a post-test after finishing the program. Completion of these assessments is mandatory before progressing, enabling consistent tracking of symptom change. Both anxiety and depression subscales have scores ranging from 0 to 9. The scales were normed on a community sample of 7,500 Australian adults aged 20–64 (Christensen et al., 2004; Jorm et al., 2003). Normative data are provided by gender and by age points (20, 40, and 60 years), but no adolescent norms are available. Following each assessment, users receive automated feedback placing them into one of four categories for each symptom type: low, middle, middle-to-high, and high-to-very-high. Those scoring the highest categories are encouraged to seek professional support if their symptoms cause significant distress.

Another central assessment is the *Warpy Thoughts Quiz* (Parslow et al., 2006) which evaluates seven domains of dysfunctional thinking identified as "areas of vulnerability": the need for approval, the need to be loved, the need to succeed, the need to be perfect, the sense of deservingness, the belief in controlling all outcomes, and the perception that happiness depends on external factors (Christensen et al., 2004). This 60-item self-report measure is administered at baseline before Module 1, again during Module 2, and finally after program completion. After the initial assessment, participants receive a personalized "total vulnerability profile" expressed as percentages for each domain, highlighting their cognitive strengths and weaknesses. Although means and standard deviations are available for these domains, the percentage scores provided to users are not intended for direct comparison with others. The norms for this measure were based on a small sample of 153 adults aged 22–32, with no adolescent representation.

Completion of both the Goldberg scales and the Warpy Thoughts Quiz is compulsory for module progression, and results are integrated into later module activities. Other exercises within the program are optional, allowing users to move forward without necessarily completing every text-based task. Across its structure, MoodGYM targets dysfunctional thought patterns with the overarching aim of alleviating emotional distress. In its later stages, the program incorporates behavioural strategies such as relaxation training, structured problem-solving, and activity scheduling to reinforce the cognitive skills learned earlier (Christensen et al., 2004).

In summary, MoodGYM represents one of the most extensively validated and widely implemented computerized cognitive behavioural therapy (cCBT) programs for young people experiencing anxiety and depression. By incorporating key CBT principles into a self-guided digital format, MoodGYM offers accessible, structured psychoeducation and skill-building exercises across five modules focusing on feelings, thoughts, stress management, and relationships. Evidence suggests that the program can effectively enhance cognitive restructuring, emotional regulation, and coping strategies, leading to measurable reductions in mild to moderate anxiety symptoms (Calear et al., 2013; Sethi, 2013; Zaidalkilani, 2017). Its strong theoretical grounding, coupled with ease of online access, positions it as a valuable early intervention and mental health promotion tool.

Additionally, existing research has largely examined quantitative outcomes rather than the in-depth, subjective experiences of participants using cCBT. The tripartite model (Clark & Watson, 1991) further highlights the importance of understanding anxiety as a distinct emotional process, suggesting that the mechanisms by which MoodGYM supports anxiety management may differ from those underlying its effects on mood.

For YA, especially university students facing developmental stressors, digital interventions such as MoodGYM offer a promising pathway to accessible, low-stigma psychological support. Yet the extent to which users find these programs usable, engaging, and personally meaningful remains insufficiently explored. Addressing these questions is critical to ensure that cCBT interventions meet the diverse needs of real-world users.

Accordingly, the present study seeks to explore YA experiences of engaging with a cCBT program, examining their perceptions of its helpfulness, usability, and impact on anxiety and coping. Through qualitative design, this research aims to contribute to the growing understanding of how digital CBT tools can be effectively implemented as preventive and early intervention resources in mental health care.

CHAPTER 3

METHODOLOGY

This study explored YA lived experiences of engaging with cCBT using the MoodGYM programme, and how this engagement influenced their experiences of anxiety. With increasing reliance on digital mental health interventions among YA, understanding how individuals experience and make meaning of self-guided online therapy has become increasingly important. This study therefore aims to examine participants who experienced change, but how they understood and interpreted their experiences throughout the intervention.

To address these aims, the study adopted a qualitative dominant design, with reflexive thematic analysis guiding the qualitative component. This approach was selected to prioritize participant's subjective experiences, allowing for an in-depth exploration of how YA engaged with MoodGYM in real-world contexts. Quantitative measures, including pre- and post-intervention GAD-7 scores, were used to provide contextual information about anxiety severity and potential changes over time, while semi-structured interviews captured rich narratives about participants engagement, perceived usefulness, and personal meaning-making. This combination allowed the study to examine both measurable changes in anxiety and the lived experiences underlying those changes.

Participants aged 18–26 years with moderate anxiety symptoms were recruited from across New Zealand and invited to complete the MoodGYM programme over several weeks. Following completion, participants took part in semi-structured interviews designed to explore feasibility, acceptability, perceived benefits, and barriers to engagement. Data from these interviews were analysed using reflexive thematic analysis, allowing themes to be developed inductively through close engagement with participant narratives. This methodological approach enabled the study to generate sophisticated insights into how YA experience digital CBT, while also identifying broader patterns that may inform the development and implementation of accessible mental health interventions for YA in Aotearoa New Zealand.

Research Questions.

The study aims to find out:

1. How do YA (18–26) in New Zealand perceive the impact of cCBT on their experience of anxiety symptoms?
2. What aspects of cCBT do participants identify as most helpful or unhelpful in managing their anxiety?
3. How do participants describe their experiences of engaging with a self-guided e-CBT programme, including barriers and facilitators to use?
4. In what ways does using cCBT influence participants sense of coping, agency, and self-efficacy in relation to their anxiety?

Distinguishing Features of the Study

This is, to the researcher's knowledge, the first study using MoodGYM in New Zealand with YA. Although MoodGYM is a readily available intervention incurring a minor fee of $45 NZD with some research base, it has not been tested in New Zealand in published studies. This is one of the only studies using recruitment and computerized Cognitive Behavioural Therapy (cCBT). Attwood et al. (2012) had school nurses recruit children with emotional problems in a small study using cCBT, while students self-referred to school counsellors in the study by Stasiak et al. (2014). However, in these studies, the schools were pre-selected to participate in the research. In the current study, the researcher used flyers and word of mouth to recruit late adolescent and YA to participate in the study. The study has also used online methods such as Facebook, Instagram and WhatsApp to recruit students for the study. Limited published studies with cCBT in YA have used online recruitment methods. Additionally, YA completed MoodGYM at their preferred location rather than at school or in a clinician's office. This study measured adherence to cCBT in several ways: participants self-reported time spent on modules and the researcher also measured the number of modules completed, the number of exercises completed, and the amount of time spent on the platform. These are more extensive adherence measures than previous studies of cCBT (MoodGYM). This study used qualitative research methods in the form of open-ended survey questions. While some previous studies with YA cCBT have briefly explored acceptability, this study has far more qualitative data. Finally, the extensive focus on social validity makes this study unique among the studies on young adult cCBT.

Design

This study adopted a qualitative dominant design using reflexive thematic analysis to explore young adult's lived experiences of engaging with cCBT, utilizing the MoodGYM platform. This approach was deliberately chosen to capture the novel, subjective, and contextual dimensions of mental health, providing in-depth insight into the processes, meanings, and complexities of participants experience with digital therapeutic interventions in real-world settings (Braun & Clarke, 2019; Palinkas et al., 2019; Pathak et al., 2013). By prioritizing rich, descriptive data over generalizable outcomes, qualitative research facilitated a deeper understanding of how individuals perceive, engage with, and are influenced by psychological interventions.

Reflexive thematic analysis was selected as the guiding framework for this study because it is ideally suited to exploring lived experiences. It allows researchers to investigate subjective experiences of anxiety and their engagement with the cCBT platform, focusing on how individuals perceive and make meaning of these experiences. Thematic analysis provided a lens to understand the essence of participants experiences, acknowledging their personal perspectives, emotions, and interpretations. Reflexive thematic analysis was thus employed to systematically identify, organize, and interpret patterns of meaning across participant's narratives (Braun & Clarke, 2019). This combination enables both deep individual insight and the identification of recurring themes and patterns across participants (thematic analysis), enriching understanding of the broader experiences associated with digital CBT.

Participants were YA recruited from New Zealand communities, all of whom self-identified with moderate anxiety and were screened using the GAD-7 scale. Participants engaged with MoodGYM modules over several weeks and subsequently took part in semi-structured interviews. The interview schedule was designed to elicit reflections on feasibility, acceptability, and personal impact of cCBT, while allowing emergent themes to be explored in depth. Flexibility in interview design enabled adaptation based on participant responses, ensuring that unexpected experiences or recurrent issues could be thoroughly examined. Recruitment continued until sufficient information power was reached, prioritising the richness and diversity of data rather than statistical sample size (Malterud et al., 2016).

Reflexive thematic analysis acknowledges that themes are co-constructed through the interpretive engagement of the researcher rather than simply discovered. This method aligns with

constructivist, interpretivist, and critical realist epistemologies, which focused on generating knowledge through dialogue between researcher and participant. Reflexivity was actively maintained throughout the research process. My positionality as a young immigrant with lived awareness of cultural and language barriers to accessing mental health care informed both study design and interpretation, enhancing understanding of cultural context while requiring careful attention to potential biases.

Therefore, the combination of phenomenologically informed and reflexive thematic analysis prioritizes both the depth of individual experience and the identification of patterns across participants narratives. By centring participant voices, allowing flexible, emergent inquiry, and employing rigorous thematic analysis, the study provides a robust framework for understanding the complex ways in which YA experience and make meaning of digital CBT. This design not only enriches academic knowledge but also offers practical insights for supporting culturally diverse YA in navigating digital mental health interventions.

Participants

For this study, participants were carefully selected to represent YA aged 18 to 26 years who were presented with clinically relevant anxiety symptoms and engaged specifically with the MoodGYM computerized CBT program. Inclusion criteria required potential participants to have scored within the moderate anxiety range on the GAD-7 (Generalized Anxiety Disorder 7-item) scale at screening typically corresponding to a score of 10-14, indicating significant but not severe symptoms that warrant psychological intervention and self-management strategies.

Recruitment focused on identifying individuals with elevated anxiety symptoms who were then recommended to engage with a cCBT program (MoodGYM) based on their GAD-7 scores. Only those who met the age range and anxiety criteria, and who were interested in engaging with online intervention were invited to participate further in the study. This approach ensured all study participants shared the key experience under review: moderate clinical anxiety as identified by a validated screening tool and active engagement with digital CBT.

Diversity within the sample was encouraged along the lines of gender, ethnicity, and context to provide novel perspectives and support the qualitative inquiry. Ethical protocols were strictly followed, including informed consent and the assurance of confidentiality. By specifying the

clinical severity and using a reliable, valid and evidence-based screening tool, the selection process provided a focused yet richly descriptive group for exploring the qualitative impact of computerized CBT on YA anxiety within the New Zealand context.

Ethical approval for this study was obtained from the Massey University Human Ethics Committee prior to participant recruitment. The application detailed the study purpose, design, recruitment procedures, eligibility criteria, and data collection and analysis methods. Given that participants discussed experiences of moderate anxiety, the study was considered to involve potential psychological risk, requiring clear safeguards for participant wellbeing. Procedures included informed consent, confidentiality, voluntary participation, and the right to withdraw at any stage without penalty. The application also outlined distress management strategies and provided information on relevant support services. Following review and requested amendments, ethical approval was granted.

Recruitment Procedure

Development of recruitment materials

Following ethics approval, recruitment materials were developed, including a flyer, participant information sheet, and informed consent form. The flyer briefly outlined study aims, eligibility, and contact details. The information sheet detailed procedures, risks, benefits, confidentiality, and voluntariness. The consent form confirmed participants understanding and agreement, and all materials were ethics approved.

Distribution of recruitment materials

Once finalized, the recruitment flyer was distributed through online platforms and networks likely to reach the target population of YA aged 18–26. Recruitment occurred primarily through social media platforms, university communication channels, community networks, and word of mouth. The flyer invited interested individuals to contact the researcher to express interest in participating in the study.

Expression of interest

Individuals who received the recruitment materials and wished to participate were invited to express their interest by contacting the researcher. At this stage, potential participants were provided with the participant information sheet so they could review the details of the study before proceeding further. This ensured that individuals had sufficient information to make an informed decision about whether to take part.

Informed consent

Eligible participants were then invited to review the informed consent form. The consent form reiterated the purpose of the study, what participation would involve, the voluntary nature of participation, and the right to withdraw from the study at any time without penalty. Participants were required to provide written informed consent before participating in any study activities. Consent was recorded electronically prior to enrolment.

Eligibility screening

After providing their informed consent, potential participants were screened to determine whether they met the study's inclusion criteria. Screening involved confirming that participants were within the specified age range of 18–26 years, were currently residing in New Zealand, scored within the moderate anxiety range on the anxiety screening tool, and were willing to engage with the cCBT programme used in the study. Individuals who did not meet the eligibility criteria were thanked for their interest but were not invited to continue with the study.

Enrolment into the Study

Once participants were formally enrolled in the study, they were provided with instructions for accessing the cCBT programme and information about the next stages of participation. Participants were also informed about the fortnightly check-ins and interview process that would take place following their engagement with the programme.

Ongoing communication

Throughout the duration of the research, participants were able to contact the researcher if they had any questions or concerns regarding the study or the programme. This ensured that participants remained informed and supported throughout their involvement in the research.

Measures

Eligibility Screening Tool

The Generalized Anxiety Disorder Scale-7

The Generalized Anxiety Disorder Scale-7 (GAD-7) is a 7-item, self-rated scale developed by Spitzer et al. (2006) as a screening tool and severity indicator for GAD. It is easily scored and was initially created to increase recognition of GAD in primary care settings. The original validation of the GAD-7 in a large primary care sample revealed that the measure has good reliability, and good criterion, factorial, and procedural validity (based on a comparison of scores derived from the self-report scales with those derived from the clinician-administered versions of

the same scales) (Spitzer et al., 2006). A cutoff score of 10 was identified as the optimal point for sensitivity (89 %) and specificity (82 %). The psychometric properties of the GAD-7 have also been evaluated in other primary care samples (Kroenke et al., 2007), a population-based sample (Löwe et al., 2008), and psychiatric samples (Beard & Björgvinsson, 2014; Kertz et al., 2013). The GAD-7 is a 7-item self-report scale developed to assess the defining symptoms of GAD. Items are rated on a 4-point Likert-type scale (0 = *not at all* to 3 = *nearly every day*). GAD-7 items describe some of the most salient diagnostic features of GAD (i.e., *feeling nervous, anxious, or on edge* and *worrying too much about different things*). Research has suggested that the GAD-7 is a valid screening tool for GAD in a primary care setting and for assessing its severity in clinical practice and research (Spitzer et al. 2006). The average GAD-7 score was 11.60 (*SD* = 5.44) in our sample.

MoodGYM intervention

MoodGYM is one of the most widely researched computerized Cognitive Behavioural Therapy (cCBT) interventions. Originally launched in 2001 by Christensen and Griffiths and further developed in 2004 by the Australian National University's Centre for Mental Health Research (AO). The program is available online and designed for individuals aged 16 years and older, with the primary aim of building coping skills and preventing the escalation of depressive and anxiety-related symptoms (Harrer et al., 2019). Although initially conceived as a universal prevention tool, MoodGYM is often accessed by individuals who are already experiencing elevated levels of psychological distress, especially anxiety and depression (March et al., 2018).

MoodGYM comprises five structured modules Feelings, Thoughts, Unwarping, De-stressing, and Relationships, which integrate key CBT principles such as cognitive restructuring, behavioural activation, stress management, and interpersonal skills training. Each module includes interactive exercises, reflective homework tasks, and quizzes designed to reinforce learning and personal application in everyday life. On average, a single module requires 30–45 minutes to complete, and the entire program encompasses over 25 interactive exercises (Harrer et al., 2018). The modules are sequentially ordered, mirroring the developmental logic of CBT: identifying negative thought patterns, challenging cognitive distortions, integrating relaxation strategies, and cultivating healthier relational patterns.

Module 1: Feelings. The first module, “Feelings”, introduces YA to major principles of Cognitive Behavioural Therapy by exploring the relationships among events, thoughts, emotions, and actions. Participants interact with six relatable characters whose thought patterns and emotional responses reflect a spectrum of adaptive to maladaptive coping. Through engaging scenarios and structured exercises, users practice identifying negative thinking and begin recognizing automatic thoughts encountered in recent weeks, such as persistent pessimism or self-defeating beliefs. They are also prompted to reflect on specific personal experiences of emotional distress, unpacking the preceding situations and their own internal reactions. Homework activities encourage continued reflection, asking participants to track events and associated feelings throughout the following week, while dissecting the links between their thoughts, emotions, and behaviours.

Module 2: Thoughts. Building on the foundation of module one, “Thoughts” equips users to recognize and challenge cognitive distortions referred to in MoodGYM as “warpy thinking”. Participants learn evidence-based techniques to critically evaluate and reshape unhelpful thinking patterns, with practical exercises and quizzes reinforcing the skill of cognitive restructuring. This module also emphasizes positive activity scheduling to support self-worth and emotional well-being, recommending that users dedicate daily time to personally enjoyable activities. Additionally, participants are encouraged to treat themselves with compassion, mirroring the kindness they would offer a friend facing challenges with self-esteem, and to record these self-supportive practices in their digital workbooks.

Module 3: Unwarping. The “Unwarping” module deepens user’s capabilities in challenging distorted thinking, offering the most comprehensive suite of exercises in the program. YA are guided to address personal vulnerability identified in earlier quizzes, with tailored reading and practices designed to bolster self-esteem and adaptive coping. A key exercise includes a “Pleasant Events” schedule, where participants evaluate the frequency and enjoyment of activities over the past month and set intentions to engage in more satisfying experiences that support overall mental health.

Module 4: Destressing. Module four, “Destressing,” helps participants identify underlying stressors including family or relationship conflicts and teaches effective coping methods relevant to YA navigating complex social environments. Exercises such as “Life Whacks” prompt

reflection on significant stressful life events, while quizzes screen for relational stress and history of parental dynamics, providing insight into how these factors may shape emotional well-being. The module also introduces relaxation practices (e.g., progressive muscle relaxation, guided imagery, musical mediation) through interactive audio-visual resources. Importantly, although visualizations such as rapid heartbeat animations illustrate stress responses, the module lacks a direct mechanism for measuring change in physiological arousal, and users are guided to self-monitor potential emotional reactions to relaxation exercises without prescribed self-rating protocols.

Module 5: Relationships. The final module, "Relationships," addresses emotional challenges commonly associated with interpersonal difficulties, such as relationship breakups. Through reflective exercises, users explore typical thoughts and behaviours triggered by social stressors and learn strategies to contest related cognitive distortions. A straightforward approach to problem-solving is modelled through relatable scenarios, equipping participants with practical skills to manage interpersonal difficulties and maintain emotional balance. Although shorter than previous modules, this section offers focused support for issues frequently encountered by YA.

Semi Structured Interviews

A semi-structured, post-intervention interview was conducted with all participants to gain a detailed and comprehensive understanding of their experiences with the MoodGYM computerized cognitive behavioural therapy (cCBT) intervention, as well as any perceived changes in their anxiety and general mental well-being. These interviews constituted a crucial element of the study's thematic analysis design, providing firsthand accounts of how YA engaged with and responded to digital therapy during a period marked by moderate anxiety. The approach allowed the interviewer to explore specific themes while also remaining flexible to participants unique perspectives and lived experiences.

Purpose and Structure of the Interviews. The interview questions were designed to facilitate open and reflective dialogue, focusing on several interconnected domains: participants overall experiences with the MoodGYM modules, perceived feasibility and acceptability of the intervention, observed changes in anxiety and related well-being changes, and the influence of other variables on their outcomes. Each interview lasted between 50 and 60 minutes, generally

scheduled within two weeks of programme completion. The semi-structured format enabled comparability across participant accounts while affording space for spontaneous elaboration on topics of personal relevance.

An interview guide was constructed with a mix of open-ended questions and tailored prompts, to ensure that participants reflected on the key phenomena central to the study.

Participants were asked several open-ended survey questions to gather more information on the accessibility of the process and the MoodGYM intervention. The questions focused on their experiences in the study (what they liked best, what did they like least, what additional information could have been given, etc.) The goal was to gather more information on the experiences of participants to support or augment the quantitative data. Open ended responses allow participants to give voice to any concerns which may affect the practicality of the intervention. These also allow participants to discuss positive experiences in the study, which may inform future research. Data was analysed using the reflexive thematic analysis approach. According to Patton (1980), this "means that the patterns, themes, and categories of analysis come from the data; they emerge out of the data rather than being imposed on them prior to data collection and analysis". Inductive can be described as "data-driven" (Braun & Clarke, 2006). Within that framework, the data was analysed using a thematic analysis approach, using the phases of thematic development as described by Braun and Clarke (2006). Codes were then used to create themes by aggregating and collating similar codes (Braun & Clarke, 2006). According to the phases as described by Braun and Clarke, themes and sub-themes were further defined, named, and reviewed in an ongoing iterative process. Themes were evaluated in terms of how they informed the feasibility research questions.

Gauging Participant Experience with cCBT. Central to the interviews was the exploration of how participants experienced the intervention on a day-to-day basis. Participants elaborated on the structure and sequencing of the modules, the relatability of the character narratives, and their comfort with digital, self-guided mental health support. Many discussed practical aspects such as module length, clarity of instructions, pacing, and the balance between structured exercises and personal reflection.

Participants were encouraged to articulate the facilitators and barriers to engagement. These included technical accessibility, motivational challenges, privacy concerns, and the extent to which MoodGYM felt attuned to their unique anxieties. Importantly, the interviews provided space for participants to voice not only positive experiences but also frustrations or missed expectations, yielding a rich, balanced data set.

MoodGYM Feasibility and Acceptability. Discussions around feasibility considered how easily MoodGYM could be integrated into participants routines, the acceptability of self-guided CBT, and the suitability of the content for a New Zealand-based young adult population. Themes of convenience and autonomy were prevalent, with many participants appreciating the flexibility, privacy, and control inherent to digital interventions.

Acceptability was assessed from multiple angles: subjective satisfaction with the modules, sense of program relevance, clarity, and user engagement. Questions probed the appropriateness of module content to real-life anxiety scenarios, with interviewees commenting on the resonance of exercises and examples with their own lived experiences.

Observed Changes and Score Discussion. A key topic of each interview was the participant's observed changes in anxiety symptoms both during the intervention and post its completion. The interviewer referenced participant's GAD-7 scores at baseline and post interview, facilitating reflection on how (and whether) the numerical change correlated with subjective well-being. Most participants described a subtle gradual improvement, noting reductions in intensity, frequency, or disruptiveness of anxious thoughts and physical symptoms. Some highlighted that their GAD-7 scores improved alongside greater awareness of cognitive and emotional patterns, while others indicated that numerical scores did not fully capture more qualitative changes, such as increased optimism, confidence, or resilience.

Interviews explored the subtleties in the relationship between standardized scores and personal experience. For example, a participant might report a modest decrease in GAD-7 score yet describe profound changes in how they related to anxiety, formulated coping strategies, or sought social support. This interplay between quantitative and qualitative change was a recurrent theme, pointing to the multidimensional impact of cCBT on YA.

Additional Contributing Variables. The interviews also probed other factors that might have influenced anxiety reduction, inviting participants to reflect on contextual changes outside the intervention itself. These included shifts in social support networks, concurrent use of therapies, changes in lifestyle or physical health, academic or occupational transitions, and significant personal events. Participants were asked to consider how these variables interacted with MoodGYM and whether any observed improvements could be attributed to a constellation of influences rather than the program alone.

For those whose scores and subjective experiences had improved, narratives often included the benefits of increased self-efficacy, improved emotional awareness, and the adoption of new coping skills. For those with less pronounced improvements, interviewer prompts sought to elucidate possible barriers such as ongoing stressors, limited engagement, or mismatch between program content and individual needs.

Beyond anxiety reduction, the interview process was attentive to wider changes in mental health, including mood stability, self-confidence, relationship quality, and academic or occupational functioning. Many participants reported supplementary benefits: better mind-set, enhanced motivation, or increased willingness to seek help from others. This holistic perspective was intentionally embedded in interview questions to support the qualitative objective of capturing lived experience in its entirety, not as an isolated symptom change, but as a tapestry of evolving emotional and psychological well-being.

Analytical Considerations and Trustworthiness. Interviews were digitally recorded and professionally transcribed, with identifiable information removed to ensure confidentiality. A thematic analysis was employed, iteratively coding transcripts to generate robust insights into patterns of experience across the cohort. Use of the semi-structured format balanced structure and adaptability, ensuring that all domains relevant to the research questions were addressed while still allowing spontaneous, refined reflections. The process contributed substantially to the trustworthiness and richness of the study's data.

In summary, the semi-structured post-intervention interviews provided an essential platform for understanding not only whether anxiety changed, but how, why, and in what way cCBT contributed to YA multi-layered experiences of mental well-being, feasibility, and change. This

method remains a hallmark of qualitative, person-centred research, and was vital to addressing the aims of this study.

Procedures

Ethical Approval

Before beginning the study, ethical approval was obtained from the Massey University Human Ethics Ohu Matatika 1 committee (Application OM1 25/34). The project was rigorously reviewed to ensure compliance with all national and institutional standards for research involving human participants. Ethical approval ensured that all procedures respected participant autonomy, privacy, and welfare throughout the study.

Recruitment

Once approval was granted, the recruitment process began. Potential participants were reached through a multi-pronged strategy utilizing printed flyers in university settings, posts in university Facebook groups, and word of mouth. All outreach materials included a brief study description, eligibility criteria, and researcher contact details. Interested individuals were invited to share their email addresses for further correspondence. Upon registering interest, each potential participant was emailed an information sheet detailing the study's purpose, procedures, risks, benefits, and data privacy considerations, along with an informed consent form.

Participants were guided to review all documents and instructed to sign and return the consent form if they wished to proceed. Consent forms were stored securely using OneMassey Drive, in compliance with Massey University data storage and confidentiality protocols.

Screening and Baseline Assessment

Following receipt of the signed consent forms, eligible participants were sent a link to a structured screening questionnaire constructed via Qualtrics, a secure, university-recommended online survey platform. The screening survey included the Generalized Anxiety Disorder 7-item scale (GAD-7), enabling standardized assessment of anxiety severity. Qualtrics allowed for tailored messaging based on individual scores, with logic flows to immediately categorize results and provide personalized feedback in real time.

Upon completion of the GAD-7, scores were communicated directly to participants:

- Those scoring below 9 (mild anxiety): Received a reassuring message thanking for their time and informed they would not proceed in the study.
- Those scoring above 14 (severe anxiety): Informed of their high scores and advised to consult their general practitioner. They were also provided with contact details for support organizations including Anxiety NZ, Gumboot Friday, and Youthline, and thanked for their engagement.
- Those scoring between 10 and 14 (moderate anxiety): Notified of eligibility for the full study. These participants received detailed instructions for the next phase, including information about using MoodGYM, a personalized access code, and a recommended timeline for module completion. E-calendar invitations for fortnightly check-ins were provided, allowing participants to communicate preferences for meeting times and adjust the schedule as needed.

Intervention Phase

Participants who met eligibility criteria (GAD-7 score 10–14) accessed the cCBT application using personalized codes. A timeline was provided to encourage structured engagement with the program. The intervention consisted of weekly modules, which participants were expected to complete independently over a six-week period, monitored via automated reminders and check-ins. Fortnightly check-in sessions facilitated ongoing support, addressed technical or motivational barriers, and allowed for real-time documentation of participant feedback and experience.

Post-Test and Qualitative Interview

Upon completion of the MoodGYM modules, all participants undertook a post-test phase. The GAD-7 scale was re-administered via Qualtrics, allowing tracking of changes in anxiety scores relative to baseline. Immediately after the post-test, participants were invited to take part in a semi-structured qualitative interview. This interview explored their experiences during the intervention, module engagement, perceived feasibility, any shifts in anxiety or broader mental well-being, and reflections on contributing variables or contextual factors.

Interview guides were informed by the study's qualitative orientation and developed to elicit rich, detailed narratives about participant journeys. Interviews were scheduled in accordance with participant preferences, conducted via video call or phone depending on individual needs. Each interview was audio recorded with participant consent and professionally transcribed to ensure accuracy and completeness.

Communication of Results

Feedback was a critical component of the ethical conduct of this study. All participants were promptly informed of their GAD-7 outcomes at both screening and post-test phases through personalized Qualtrics messages. Following completion of their interview, participants were given a debrief detailing the overall purpose and preliminary findings of the project. Final summarized results and study insights were shared with all participants via email at project conclusion, respecting confidentiality at all stages.

Data Management

All participant documents, surveys, and interview transcripts were stored securely on the university-approved OneMassey Drive platform. Data was anonymized during analysis, with unique codes assigned to participants instead of personally identifying information. Access to sensitive data was restricted to authorized researchers, in line with Massey University's ethics policies.

Data Collection

Data was collected through individual semi-structured interviews conducted online via Zoom (version 5.10.4) on a Windows 10 laptop. Prior to beginning the MoodGYM program, participants were provided with a one-page guide containing nine reflection prompts (Appendix F) to consider during their engagement with the platform. These prompts were designed to direct attention to specific aspects of their experience and to support richer recall during interviews.

Interviews were scheduled approximately two weeks after participant recruitment, depending on availability, ensuring participants had sufficient time to engage with the MoodGYM modules. Each interview lasted between 45 and 60 minutes and consisted of 25 to 30 open-ended questions (Appendix G), which were aligned with the one-page reflection guide to encourage

thoughtful responses. All interviews were audio-recorded with participants consent and subsequently transcribed verbatim to ensure accuracy.

To enhance validity and transparency, participants were invited to review their transcripts and request amendments where necessary. Upon completion of the interview and return of the transcript release form, 4 lucky participants received an $80 online gift voucher as compensation for their time and contribution.

Method of Analysis

From the perspective of qualitative research, reliability is associated with the researcher's ability to be consistent when documenting and analysing data (Gibbs, 2018). To demonstrate reliability in the research according to Greene (1997), procedures followed in the analyses must be documented, as was done. This, then, ensures that further studies of the use of cCBT, participants experience and coping methods can be replicated in the future. However, as the qualitative analysis of data relied on the researcher's interpretation of participant comments, replication of the study by other researchers may vary due to interpretative differences.

Reflexive Thematic Analysis

For this study, data were analysed utilizing reflexive thematic analysis (RTA), guided by the frameworks established by Braun and Clarke (2006) and later refined by Braun, Clarke, Hayfield, and Terry (2019). Reflexive thematic analysis is a qualitative research technique that involves systematically examining the data set to identify recurring patterns of meaning, referred to as themes (Braun & Clarke, 2006). In this method, the researcher actively engages with the data, with their subjectivity and reflexivity playing a vital role in the production of knowledge (Braun et al., 2019). This approach recognizes that realities are multiple and contextual and treats researcher perspectives as valuable assets that inform analytic and interpretive processes (Braun et al., 2019).

Within RTA, themes are conceptualized as meaning-based patterns emerging through the researcher's critical involvement with analysis and coding. These patterns may be evident at both the semantic level reflecting explicit content of participant responses or at the latent level, which

involves interpreting the underlying assumptions, ideologies, and beliefs embedded within the data (Braun & Clarke, 2006). Semantic analysis assumes that all necessary insight is present in participant words, while latent analysis probes deeper, seeking to theorize the constructs informing expression (Braun & Clarke, 2006).

During the analytic phase, reflexivity influenced theme generating decisions in several ways. Initially, I found myself drawn to developing segments of data that reflected positive engagement with the cCBT programme, particularly where participants described increased coping or insight. This inclination reflected my prior academic exposure to literature highlighting the potential benefits of digital mental health interventions. To address this, I engaged in deliberate analytic slowing, revisiting transcripts multiple times to identify disconfirming evidence and to ensure that the themes also captured ambivalence, disengagement, and unmet expectations. This process involved actively questioning whether emerging themes reflected participants narratives or my own implicit expectations regarding intervention usefulness. For example, early themes clustered participant comments around convenience as an unequivocal facilitator of engagement; however, further reflexive review revealed that convenience also enabled avoidance and irregular use for some participants. Recognising this duality prompted refinement of theme categories to better reflect the complexity of engagement experiences.

Similarly, as someone familiar with navigating mental health support systems in a new cultural context, I initially interpreted references to self-reliance as evidence of empowerment. Subsequent reflection and supervisory discussion encouraged a more detailed interpretation, considering that self-reliance might also signal limited access to culturally responsive services or reluctance to seek interpersonal support. This reflexive process strengthened the analytic depth of the study by allowing multiple interpretive possibilities to be considered.

The process of developing themes in RTA strives to offer interpretations that are coherent and anchored in the data, rather than aiming to eliminate the influence of researcher subjectivity (Braun et al., 2019). In this study, a critical realist stance was adopted, acknowledging that language both articulates and constructs meaning, allowing the researcher to theorize motivations, experiences, and interpretations situated within participants descriptions (Braun & Clarke, 2006). Analysis proceeded not only by organizing and summarizing the content, but by interpreting salient patterns and theorizing their significance (Braun & Clarke, 2006).

Reflexive thematic analysis consists of six distinct phases (Braun & Clarke, 2006):

1. **Familiarization with Data:** The student researcher Ruqayya Cementwala (RC) began by repeatedly reading interview transcripts to familiarize themself with the data, dedicating approximately one week per interview to ensure comprehensive understanding. Multiple readings facilitated the identification of potential meanings and emergent patterns.

2. **Initial Theme Generation:** Each transcript was reviewed, and meaningful portions of text were assigned sub-themes representative of their core ideas. This step was completed independently by RC, with some responses assigned to multiple sub-themes when themes overlapped, and others fitting clearly within a single theme. Transcripts were checked three times during this phase to maintain thoroughness, resulting in an average of 10 - 18 themes per interview.

3. **Theme Identification:** RC then grouped related sub-themes across the entire dataset, constructing clusters of meaning as ‘building blocks’ for candidate themes (Braun et al., 2019). Tentative theme titles were created to encapsulate core clusters, and each candidate theme was discussed and refined in collaboration with the supervising researcher Matthew Shepherd (MS).

4. **Reviewing and Refining Themes:** During this phase, themes and relevant data excerpts were collated under respective theme headings in a single document. The student researcher examined each theme for coherence and checked that data within themes provided a unified narrative. This stage informed the development of a thematic map, which was compared against the entire dataset to ensure comprehensive and accurate representation. Both researcher and supervisor then analysed and discussed the overall structure to confirm the integrity of theme development.

5. **Defining and Naming Themes:** A detailed analytic process followed, defining and naming each theme in relation to one another. RC finalized the thematic map and submitted it for review to the supervisor, after which final adjustments were agreed upon collaboratively.

6. **Producing the Report:** With themes validated and named, RC grouped all relevant data excerpts under their corresponding themes and subthemes, generating a shortlist of illustrative quotations. Both researcher and supervisor reviewed these selections and, when satisfied with the thematic representation, RC proceeded to compile the analytic narrative into the final report.

This iterative, reflexive approach ensured depth, credibility, and transparency, with both student and supervising researchers engaged in cycles of review, collaboration, and interpretive dialogue throughout the analysis, as endorsed by Braun and Clarke (2006) and Braun et al. (2019).

CHAPTER 4

RESULTS

This study aimed to explore how YA in Aotearoa New Zealand perceived and experienced a computerized cognitive behavioural therapy (cCBT) programme for managing anxiety symptoms. Specifically, the research sought to examine participants perceptions of the impact of cCBT on their anxiety, identify which aspects of the programme were experienced as helpful or unhelpful, and understand patterns of engagement, including barriers and facilitators to use. Additionally, the study aimed to explore how interacting with cCBT influenced participant's sense of coping, agency, and self-efficacy in relation to their anxiety. The following section presents the findings dfrom a qualitative thematic analysis of participant experiences.

Demographics

There were 21 participants who volunteered to take part in the study out of which 15 met the eligibility criteria to continue to the cCBT programme. Two participants opted out of the study after completing the first module of the selected cCBT programme. The 13 participants (4 male and 9 female) age ranged from 19 to 26 years old. A thorough semi structured interview was conducted with each participant post the intervention completion along with completion of the GAD-7 to understand their anxiety levels before and after engaging with the intervention.

Participants self-reported demographic

Table 1

Participant Information

Participants	**Age**	**Gender**	**Ethnicity**	**Location**	**GAD-7 Pre-intervention Score**	**GAD-7 Post-intervention scores**	**Modules completed**
P1	19	F	European	Auckland	14	12	5
P2	23	F	Indian	Wellington	12	12	5
P3	24	M	Samoan	Auckland	12	11	5
P4	26	M	Indian	Wellington	10	11	5

P5	26	F	European	Hamilton	13	12	5
P2	25	F	European	Palmerston North	12	14	5
P7	24	F	Māori	Auckland	14	12	5
P8	26	M	European	Auckland	14	11	5
P9	23	F	Asian	Wellington	13	11	5
P10	25	F	Fiji Indian	Auckland	11	12	5
P11	26	M	Indian	Auckland	10	10	5
P12	19	F	Indian	Auckland	14	14	5
P13	20	F	Māori	Auckland	14	13	5
P14	18	F	Indian	Auckland	11	-	2
P15	19	F	European	Auckland	10	-	2

This section presents the findings of the study, with a primary focus on the qualitative data generated through semi-structured interviews and participant reflections.

Reflexive thematic analysis was used to identify patterns of meaning across the dataset, resulting in six comprehensive themes that capture the complexity and variability of participants experiences. These themes reflect both the strengths and limitations of engaging with a self-guided digital mental health intervention, highlighting the interplay between accessibility, motivation, personal relevance, and individual meaning-making processes. It is important to note that the themes are not presented as discrete or fixed categories, but as interconnected domains that collectively illustrate the dynamic and context-dependent nature of engagement with cCBT.

The themes generated include:

- Accessibility and Convenience
- Engagement and Motivation
- Personal Relevance and Connection
- Learning and Application of CBT Principles
- Perceived Impact on Anxiety and Wellbeing

Each theme is supported by a set of subthemes that provide further depth and nuance, capturing the shared patterns and individual differences in participants accounts. These findings offer insight into the feasibility and acceptability of self-guided cCBT for YA with moderate anxiety in a real-world context.

Theme 1: Accessibility and Convenience of cCBT

Throughout the interviews, participants highlighted that one of the most defining features of their experience with cCBT was its accessibility and convenience. This shaped not only their engagement with the intervention but also their overall outlook on mental health support. The flexibility, privacy, and on-demand nature of the digital format were frequently described as significantly more advantageous compared to traditional face-to-face therapy. For YA navigating academic commitments, employment responsibilities, cultural expectations, and fluctuating emotional states, cCBT offered a form of mental health support that could be engaged with on their own terms. This theme comprises of three interconnected subthemes: ease of access and flexibility, reduced structural and psychological barriers to therapy, and enhanced autonomy through self-paced learning. Together, these subthemes illustrate how cCBT uniquely aligned with the lived realities and developmental tasks of emerging adulthood.

While these patterns were consistent across most participants, their meaning was shaped by personal histories, cultural contexts, and varying familiarity with mental health systems. Reflexively, it is important to recognise that my positionality as a young adult immigrant researching digital psychology could shape my sensitivity to themes relating to accessibility, cultural barriers, and autonomy. The resonance of these narratives within my interpretive understanding highlights the importance of acknowledging how researcher subjectivity contributes to meaning making in reflexive thematic analysis.

Ease of Access and Flexibility

A prominent dimension of accessibility described by participants was the freedom to engage with cCBT at any time and in any location. For many, this flexibility contrasted sharply with the limitations of traditional therapy settings such as travel, scheduling, delays, and limited appointment availability. Some students noted that even if they were interested in therapy, expensive therapy sessions, long wait or session times that clashed with academic timetables and

work commitments made it functionally inaccessible. The ability to log in “whenever I felt ready” or “late at night when I actually needed it” was often described as a relief.

One participant explained:

“I liked that I could do it at night, in my room, when everything felt quiet. I don’t think I would've opened up the same way if I had to go somewhere in person at a set time.”

The ability to choose the time and place of engagement contributed to a sense of safety and emotional readiness. Unlike face-to-face therapy, where individuals must present themselves at a decided hour regardless of their state of mind, cCBT allowed participants to access support precisely when distress emerged.

P13 described:

“Some days I didn’t feel like talking to anyone at all, but I still wanted to work on myself. So being able to just log in and do a module without needing to interact with a therapist actually helped a lot.”

The format not only aligns with the rhythms of YA lifestyle which is often overruled by shifting deadlines, social commitments, and late-night study but also aligned with the episodic nature of anxiety. Anxiety intensity can fluctuate rapidly, and participants appreciated having an intervention that could “move with them” rather than require compliance to external structures.

Time flexibility also reduced the emotional strain associated with seeking help. The act of “getting ready for therapy,” travelling, and mentally preparing for interpersonal vulnerability were described as significant mental blocks that cCBT eliminated. For individuals experiencing moderate anxiety particularly, those prone to symptoms include anticipatory worry, self-doubt, or a fear of being judged this reduction in procedural effort made psychological intervention feel more approachable and less intimidating.

Additionally, participants indicated that the digital format supported consistency. Instead of missing a session due to transport issues, illness, or workload, they could simply adjust their schedule accordingly. This flexibility preserved momentum and reduced the guilt or shame that can accompany falling behind in traditional therapy structures.

Taken together, the perceived flexibility of cCBT contributed not only to practical convenience but also to psychological accessibility creating conditions under which participants felt more empowered to start, return to, and continue therapeutic engagement. Some additional key constructs that emerged from the data are highlighted in **Table 1A**:

Table 1A

Ease of access and flexibility

Key Construct	**Evidence**	**Quotes from participants**
Increased autonomy and control	Participants reported feeling empowered by controlling when and how they engaged.	"It felt more like I was picking when to work on myself." (P2)
Gradual and self-paced Engagement	Ease of access meant that participants could engage in small, manageable chunks. Which helped reduce overwhelming emotions related to therapy.	"I didn't have to do everything at once… I could just log in for a few minutes, which felt less daunting." (P9)
Alignment with fluctuating anxiety patterns	Participants highlighted that the flexible format allowed them to engage in response to changing anxiety levels, rather than adhering to fixed session times.	"Some days I wouldn't touch it, and other days I'd do more… it kind of depended on how I was feeling." (P11)

Reduced Barriers to Therapy

A second key advantage highlighted across interviews was cCBT's capacity to reduce both structural and psychological barriers associated with face-to-face therapy. Structural barriers commonly included geographic distance, transportation issues, clinic availability, scheduling conflicts, cost, and long waitlists. Psychological barriers included stigma, fear of judgement, cultural expectations around help-seeking, and discomfort with emotional disclosure.

Several participants described a sense of relief in being able to bypass institutional hurdles:

"Every time I've thought about therapy in the past, it's been like, 'How do I start? Where do I go? How long will it take to get an appointment? Do I really need therapy?' With this, you just log in. No gatekeepers." -(P8)

This point of view reflects the broader appeal of low-threshold interventions programmes that remove administrative, financial, or logistical barriers and allow individuals to access support immediately.

Psychological barriers were equally significant in shaping participants experiences. Several participants described being uncomfortable discussing personal matters in traditional therapy, particularly those from cultural backgrounds that discourage emotional vulnerability or medicalized mental health care.

P4 noted:

"In my culture, we don't really go to therapy. It's seen as something you do only when things are really extreme. So doing this online felt more acceptable, because no one had to know and it didn't feel too intense as a first timer."

The anonymity of cCBT was repeatedly framed as a protective factor, allowing YA to engage with mental health content without social scrutiny or concerns about confidentiality. Even those without cultural constrains reported that cCBT provided a "softer" entry point into psychological work.

As another P13 said:

"I think I would've been too scared to talk about my anxiety in person. This felt more private."

The reduction of interpersonal pressure also allowed some participants to explore emotional topics at their own pace, without the immediate social feedback loop that occurs in therapy. YA who reported social anxiety found this particularly beneficial. The absence of a therapist's watch or perceived expectations meant they could address cognitive distortions with less guilt and guardedness.

The cost of therapy was another major theme. Several students highlighted that traditional counselling is financially inaccessible, especially outside university settings. Paying $45 for a programme like MoodGYM was described as “affordable compared to counselling,” particularly considering that private therapy in New Zealand can range from $120 to $200 per session. For some, cCBT was the only option within reach.

Participants also acknowledged that digital interventions allowed them to evade concerns around cultural mismatches with therapists. For those from ethnic minorities, finding a culturally familiar or sensitive practitioner felt daunting or unlikely. Engaging privately with cCBT allowed them to get around this barrier while still learning therapeutic skills.

Overall, reduced barriers practical, financial, cultural, and social played a critical role in participants willingness to engage with cCBT. The sense of empowerment arising from bypassing these barriers contributed strongly to the therapeutic acceptability of the programme as shown in **Table 1B**.

Key Constructs	Participant Experience	Quotes from Participants
Removal of structural barriers	Participants valued the practicality of cCBT. Getting rid of travel time, high costs making support more immediately available.	“I didn’t have to wait weeks or figure out appointments… it was just there when I needed it.” (P6)
Reduction of stigma and fear of judgement	Participants felt more comfortable engaging with mental health content privately, without concerns about being judged or labelled by others.	“It didn’t feel like I was being judged… I could just go through it without worrying what someone else would think.” (P8)
Cultural accessibility	For participants from culturally diverse backgrounds, cCBT provided an alternative to stigmatized or unfamiliar therapy models.	“Where I come from, you don’t really talk about this stuff or go to therapy… doing it online made it feel more okay.” (P10)

Lower emotional cutoff for seeking help.	The absence of face-to-face interaction reduced the emotional intensity of engaging with therapy, making it easier for first-time help-seekers.	"It felt like an easier first step… not as overwhelming as sitting in front of someone and explaining everything." (P3)

Table 1B: Reduced barriers to therapy

Autonomy and Self-Paced Learning

Autonomy emerged as a prominent psychological benefit of cCBT. Many participants described feeling in control of their therapeutic journey, highlighting how digital interventions empowered them to work at a pace that aligned with their emotional readiness. Unlike traditional therapy which imposes weekly sessions regardless of the individual's state of mind cCBT allowed participants to decide when, how quickly, and how deeply they moved through the content.

A persistent narrative highlighted the relief of not being pressured by external expectations:

"If I needed to take more time on a topic, I could. If I wanted to skip an activity because I wasn't in the headspace, I could. In normal therapy I think you can't really choose that."- (P10)

This self-directed approach supported the developmental tasks characteristic of young adulthood, including identity formation, increasing independence, and establishing personal efficacy. Participants described having more ownership over their mental health, noting that cCBT encouraged them to actively engage rather than passively receive treatment.

Working independently also allowed for deeper reflection. Several participants shared that writing responses online or completing exercises privately gave them more emotional space to process uncomfortable thoughts without feeling rushed. P5 said:

"Sometimes it takes me a while to understand what I feel probably because of my pregnancy brain. Being able to sit with the questions and come back later helped me take it seriously."

This sense of autonomy extended to emotional boundaries. Participants valued being able to stop a module if they became overwhelmed, choosing to return when comfortable. In traditional therapy, the inability to pause or retreat during intense emotional exploration can feel confronting

or unsafe. Digital environments, by contrast, allow users to regulate their exposure, enhancing feelings of control and psychological safety.

Moreover, the self-paced nature of the programme helped participants develop confidence in their coping skills. Several described moments of achievement when they completed modules or understood aspects of CBT reasoning. This inculcated a sense of competence and internal motivation, further reinforcing positive engagement.

For slightly highly anxious individuals, autonomy also lifted the sensory and social load associated with in-person therapy. Without the need to interpret social cues or manage the pressure of performing emotional insight under time constraints, these participants could focus more fully on the therapeutic content.

Across accounts, autonomy was closely linked to emotional safety, engagement, and meaningful learning. The ability to take charge of the process made participants feel respected and capable, which in turn increased their willingness to continue.

Taken together, the subthemes of flexibility, reduced barriers, and autonomy illustrate how cCBT aligns uniquely well with the lived experiences, developmental stage, and psychological needs of YA. Participants were not passively involved with the digital content; they actively understood, adapted, and incorporated the intervention into their day-to-day schedules. The accessibility of the programme allowed participants to engage despite the constraints of student life, cultural expectations, financial limitations, and social anxieties. The convenience of cCBT made mental health support feel feasible rather than farfetched or overwhelming.

These findings highlighted the first research aim of exploring participant's perceptions of the helpfulness and usability of cCBT in managing anxiety. Accessibility was not simply a logistical feature shaped participants' emotional openness, engagement patterns, and willingness to continue. Flexibility enabled deeper internal reflection, reduced barriers allowed safer initial engagement, and autonomy made the learning experience more meaningful.

Furthermore, the perceived convenience of cCBT positioned it as a feasible preventive and early intervention tool. As it can be accessed early in the development of symptoms and before individuals feel "unwell enough" for formal therapy, cCBT bridges the gap between no intervention and higher-intensity professional care. Participants framed it as a "first step," a "try-

out," or a "way to learn before getting help," suggesting strong potential for early support pathways. To further illustrate this, addition key constructs derived from the data are presented in **Table 1C.**

Table 1C

Autonomy and Self-Paced Learning

Key Constructs	**Participants Experience**	**Quotes from Participants**
Sense of Control	Participants described having ownership over when and how they engaged with the programme, enhancing feelings of agency and personal responsibility	"It felt like I was choosing to do it for myself, not because someone told me to." (P1)
Self- Paced progression	Participants value being able to take their time, pause, or revisit information based on their emotional state and cognitive calibre.	"Some parts I had to go over again, and it was good that I could take my time with it." (P6)
Enhanced Self Reflection	Independent engagement allowed participants to process the content thoroughly without any time pressure	"I could actually sit and think about my answers and back to it in a few days." (P8)
Development of self confidence	Completing modules and applying CBT strategies fostered a sense of competence and confidence in managing anxiety	"Finishing a module made me feel like I'd actually done something useful and learnt a lot." (P12)

Theme 2: Engagement and Motivation

Engagement and motivation emerged as another theme in understanding young adult's experiences of cCBT. While theme one captured the ways participants accessed the programme, this theme examines what kept them engaged as well as what hindered their participation across the five-week intervention. Engagement in cCBT was not linear; instead, it reflected a dynamic blend of emotional curiosity, structured learning, accountability, external support, and varying hindrances tied to mood, life demands, and personal circumstances.

Across participants, three subthemes defined their motivational experiences: (a) curiosity and structured learning, (b) accountability and external encouragement, and (c) barriers to consistency. Together, these subthemes illustrate that engagement with cCBT is shaped equally by internal drivers and external support, as well as by the broader demands of young adult life.

Curiosity and Structured Learning

For many participants, engagement with cCBT was initially driven by curiosity either curiosity about their own mental health, curiosity about the intervention itself, or curiosity about what they might learn. This sense of curiosity was elevated by the structured format of the cCBT program, which participants described as "clear," "step-by-step," and "easy to follow," enabling them to maintain motivation across modules.

Several participants explained that they entered the programme wanting to better understand themselves.

One said, *"I was curious to see what I would find out about my feelings… like, how my brain actually works."*

Another described the intervention as a way to learn skills she felt she was missing: *"It felt like learning something new about myself every week, and that kept me wanting to do the next one."*

The novelty of the content also maintained engagement. As one participant expressed,

"It was interesting, like I didn't know some of the things it was explaining… so it made me want to keep going."

This shows that participants were not passively receiving information they were learners actively interested in learning psychological tools.

The structure of MoodGYM played a key role in sustaining this engagement. Many participants indicated that the modular layout made the programme feel manageable and cognitively organised.

P6 noted, *"It was like each module built on the one before, and that made sense to me. It was easy to follow."*

This sentiment was second by P10 who said, *"Because it was step-by-step, I didn't get overwhelmed. It was like, 'Okay, one thing at a time.'"*

For some, the interactive exercises enhanced their motivation to continue. One participant described looking forward to the reflective activities: *"I liked the questions where you had to think… they made me realize things. So I was like, okay, I'll do the next one."*

This suggests that cognitive insight incorporated within structured tasks functioned as a reinforcement.

Importantly, participants emphasised that structure helped negated anxiety-related avoidance. For example, one admitted, *"If it was all over the place, I probably would've stopped. But because it had a path, I kept on track."* The clarity of expectations reduced the cognitive load that often interferes with mental health behaviour change.

Altogether, curiosity and structured learning worked together to create a sense of movement and progress key motivators for YA accustomed to academic task-based environments. Curiosity sparked initial engagement; structured learning sustained it. This is further illustrated in **Table 2A**.

Table 2A

Curiosity and Structured Learning

Key Constructs	**Participant Experience**	**Quotes from Participants**

Curiosity as a driver factor	Participants entered the programme with a natural desire to understand their thoughts and anxiety patterns	"I wanted to figure out why I think the way I do sometimes." (P3)
Psychoeducation as a reinforcing factor	Gaining new psychological knowledge and insight encouraged participants to continue through the following modules	"Each module felt like I was learning something useful, so I kept going." (P7)
Structured format supported cognitive clarity	The step-by-step design reduced overwhelm and helped participants organise their understanding of CBT concepts	"It was laid out in a way that made everything feel simple and not confusing." (P9)
Interactive tasks enhance engagement	Reflective exercises and activities prompted active participation and deeper cognitive processing	"The activities made me actually think about things instead of just reading." (P4)

Accountability and External Encouragement

A second major motivator of engagement was the presence of accountability both internal and external. Even though cCBT is self-directed, participants frequently relied on external encouragement, check-ins with the researcher, and the sense of being part of a study to maintain their motivation across the five-week period. This subtheme demonstrates that engagement with digital mental health tools is not entirely independent; rather, it can be strengthened by interpersonal support.

Many participants framed the fortnightly Zoom check-ins as crucial to staying motivated. One explicitly stated, *"If we didn't have those check-ins, I probably would've forgotten or just put it off."*

Another shared, *"It kept me on track knowing I had to update you… it made me actually do it."* These reflections highlight how external structure, even minimal, can counteract natural dips in motivation.

Participants also described feeling accountable not only to the researcher but to the study itself. One commented, *"Because I signed up, I felt like I should do it properly. Like I owed it to the study."* Another mirrored this sense of duty: *"Being part of research made me take it more seriously."* Here, the research frame appears to have legitimised the process, encouraging sustained engagement.

Some participants specifically mentioned interactive encouragement, not pressure, but gentle support as motivating. For instance, one participant said, *"Talking to you made me feel supported, like I wasn't doing it alone, so that helped me keep going."* This suggests that even in predominantly self-guided interventions, human connection can provide emotional reassurance and reduce the sense of isolation often associated with digital interventions.

Accountability was not only researcher-driven; some participants created their own self-accountability strategies. One explained, *"I set reminders for myself because I wanted to stay consistent."* Another said she kept a mental note each week: *"I'd think, okay, I should do this by Friday… and that helped."*

Family and peer encouragement also came up in a small number of interviews. One participant shared, *"My roommate would ask how it was going, so that reminded me to keep doing it."* This kind of informal interpersonal reinforcement while not universally present appeared to boost motivation for those who had it.

Interestingly, accountability also intersected with identity. One participant said, *"I didn't want to be someone who commits to something and doesn't finish it."* For her, engagement was tied to self-perception and personal values around follow-through.

As shown in **Table 2B**, accountability both external and internal acted as an anchor that sustained engagement despite fluctuating motivation, competing demands, and emotional challenges.

Table 2B

Accountability and External Encouragement

Key Construct	**Participant Experience**	**Quotes from Participants**

Researchers Check-ins enhances consistency	Regular check-ins and the presence of the researcher supported ongoing engagement and reduced procrastination	"Knowing you would ask about it made me actually sit down and do it." (P6)
Sense of responsibility to the study	Participation in a research project increased commitment and seriousness towards completing the programme	"It felt like I had committed to something important, so I didn't want to drop off." (P10)
Interpersonal support reduced isolation	Gentle encouragement and human connection made the process feel less solitary and more supported	"It didn't feel like I was doing it completely alone, which helped a lot." (P11)
Self-regulation	Participants developed personal strategies (e.g., reminders, routines) to maintain engagement	"I made it part of my weekly routine so I wouldn't skip it." (P2)

Barriers to Consistency

Despite high initial motivation, participants reported encountering several barriers to consistency throughout the intervention. These barriers were multifaceted rooted in academic pressures, emotional states, cognitive overload, and life circumstances and frequently disrupted participants weekly engagement patterns.

One of the most common barriers was lack of time or multiple responsibilities. Several participants described struggling to complete modules during busy periods.

As one shared, *"When uni got intense, I'd forget or just not have the energy to do it."* Another said, *"I had work shifts and assignments. Some weeks were just harder."*

These reflections highlight that cCBT competes with significant academic and personal demands in YA lives.

Emotional state also played a considerable role. Participants commonly noted that anxiety itself sometimes made them avoid the modules ironically mirroring the cognitive avoidance patterns that CBT is designed to address.

One participant admitted, *"Some days I just didn't want to think about anything emotional, so I'd skip it."* Another said, *"If I was having a bad week, I didn't feel like doing it, even though that's when I probably needed it."*

This avoidance was not necessarily due to the programme itself but to the emotional effort required to engage with personal reflection. One participant described this tension clearly: *"It was helpful, but it also made me reflect a lot… and some days I didn't have the mental capacity for that."*

Motivational fatigue also emerged over time. While initial curiosity was high, several participants noted that enthusiasm waned by later modules.

One commented, *"By the third week, it felt a bit repetitive, so I wasn't as motivated."* Another expressed, *"It was harder to stay engaged the longer it went on."* This indicates that sustaining motivation in digital interventions may require varied content or increased personalization.

Technical or usability issues, though reported less frequently, also functioned as barriers. One participant described feeling frustrated when the programme froze on her device: *"When it glitched, I just left it for a few days."* Even minor inconveniences appeared to disrupt momentum.

Finally, participants highlighted psychological barriers tied to feeling overwhelmed, burnt out, or emotionally drained. P6 said, *"By the end of the day I was done. Even if it only took 20 minutes, it felt like too much."* Another stated, *"Sometimes I just wasn't in the head space to do it."*

These reflections illustrate that cCBT engagement cannot be understood solely in terms of programme design it is also shaped by the broader rhythms of young adult life and the fluctuating nature of anxiety.

Engagement and motivation within cCBT are shaped by a tricky balance of curiosity, structure, accountability, and challenging barriers. Participants were most engaged when the programme felt interesting, supportive, and aligned with their ongoing life events. Motivation was reinforced by structured learning pathways and timely encouragement suggesting that even self-guided digital interventions benefit significantly from interpersonal scaffolding.

At the same time, barriers to consistency were substantial, reflecting the challenges YA face in managing mental health tasks on top of academic, social, and emotional demands. These barriers highlight the importance of designing cCBT programs that are flexible, user friendly, and supported by small but meaningful human connections as illustrated in **Table 2C**.

Table 2C

Barriers to Consistency

Key Construct	**Participant Experience**	**Quotes from Participants**
Competing life demands	Participants reported difficulty maintaining consistent engagement due to academic workload, employment, and competing responsibilities	"It just wasn't a priority when everything else piled up." (P8)
Emotional avoidance	Participants described avoiding modules during periods of heightened anxiety or emotional distress, despite recognising their potential benefit	"When I felt really anxious, I kind of avoided it instead of using it." (P1)
Decline in motivation over time	Initial engagement driven by curiosity reduced across later modules, with some participants experiencing fatigue or perceived repetition	"At the start I was into it, but later it felt harder to stay interested." (P10)
Mental overload	Participants experienced mental fatigue and reduced capacity to engage, particularly after long or stressful days	"After a long day, even small things like this felt like too much effort." (P6)
Technical problems	Minor technical issues (e.g., glitches, platform usability) interrupted engagement and reduced continuity	"If something didn't work properly, I'd just stop and come back later." (P12)

Theme 3: Personal Relevance and Connection

A critical factor shaping participants experiences of cCBT was the extent to which the programme felt personally relevant, emotionally resonant, and contextually appropriate for their

individual needs. While Theme 1 addressed accessibility and theme two focused on motivational dynamics, this theme explores the perception of cCBT, how participants made sense of the programme in relation to their personal lives and how emotionally connected or disconnected they felt throughout the process.

Across all thirteen interviews, participants expressed varying levels of emotional connection to the intervention, often describing a sense of debate between the convenience of cCBT and the limitations of a self-guided digital format. They frequently compared MoodGYM to face-to-face therapy, viewing traditional therapy as superior for depth and personal connection, yet acknowledging that cCBT offered unique advantages, particularly for early intervention, skill-building, and psychological awareness.

Lack of Personalization

Many participants described the cCBT programme as somewhat impersonal or generic, highlighting that its broad-based content did not always reflect the complexity of their individual experiences. Although they appreciated the conceptual value of the exercises, several felt that aspects of the programme were too generalized or did not adapt to their circumstances, lifestyles, or cultural backgrounds.

A recurring sentiment was that the cCBT provided felt "one-size-fits-all." As one participant put it, *"Some of the examples didn't really match my life… it felt like it was not relevant to me."* Another mirrored this sentiment, saying, *"It was useful, but it wasn't exactly tailored to me. I had to do the work of fitting it to my situation."* These statements demonstrate the cognitive load participants had to undertake to make generalized content personally meaningful.

Others reflected more specifically on the programme's characters or scenarios, which they found dated, simplistic, or unrealistic. One said, *"The characters felt a bit cheesy… like, I couldn't really relate to them."* Another participant shared, *"Some storylines were a bit off for my age group… it seemed more for teenagers than someone in uni."*

These comments reveal a disconnect between cCBT's design and the lived contexts of older adolescents and YA.

Participants also noted that the automated feedback they received while sometimes validating did not always feel accurate or specific enough to be useful. One remarked, *"The results felt very generic. It didn't feel like it understood my anxiety."* Another described the feedback as *"a bit vague… it didn't tell me anything new about myself."*

This perceived lack of personalisation affected emotional engagement. Some described feeling distanced or detached from the content. As one participant noted, *"It wasn't like something specifically addressed to me; it was like a programme talking in general sense."* Without personal tailoring, the intervention felt less relational and more instructional, reducing the perceived depth of therapeutic connection.

Yet, despite these limitations, participants understood the structural constraints of digital programmes. They generally framed their critiques as observations rather than barriers that prevented them from using or benefiting from cCBT. Many acknowledged that some level of generalization is obvious in self-guided interventions and accepted this as part of the trade-off for accessibility and autonomy. This has been discussed further in **Table 3A**.

Table 3A

Lack of Personalization

Key Constructs	**Participant Experience**	**Quotes from Participants**
Perception of "one-size-fits-all" content	Participants felt the programme did not fully reflect their individual experiences, requiring them to adapt content themselves	"I had to kind of make it fit my situation, it didn't naturally feel like it did." (P2)
Limited relatability of examples and characters	Some participants found scenarios outdated, simplistic, or mismatched to their developmental stage	"It felt more basic than what I was dealing with personally." (P9)
Generic feedback	Feedback provided was perceived as broad and lacking depth or specificity	"It gave general responses, but nothing that felt very specific to me." (P5)
Lack of tailored concepts	The absence of personalisation led to reduced emotional engagement	"It didn't feel like it was speaking directly to me,

		more like general advice." (P11)

Desire for Interactivity and Human Connection

Across nearly all interviews, participants expressed a strong sense that human connection is central to therapy and that its absence in cCBT was felt significantly. While participants appreciated the structure, independence, and non-judgemental nature of cCBT, they consistently highlighted that digital programmes could not replace the personal connectedness of face-to-face interaction.

Several participants explicitly compared cCBT to traditional therapy. One stated, *"It's good, but it's not the same as talking to a real person who can respond to what you're saying."* Another elaborated, *"With a therapist, you feel heard and understood. With the programme, it's just you and the screen."* Such comparisons underline that interpersonal resonance validation, empathy, warmth is difficult to replicate digitally.

Participants also noted that interacting with a clinician provides emotional safety and personalised guidance. One commented, *"A therapist can challenge you or explain things better… the programme can't do that."* Another observed, *"Sometimes I wanted someone to tell me, 'Yeah, that makes sense,' or 'Let's dig deeper. This definitely cannot replace therapy'" – (P10)*

This does not indicate rejection of cCBT; instead, it highlights participant's explicit recognition that cCBT serves a different purpose. For instance, one participant shared, *"I wouldn't use it instead of therapy, but I'd use it alongside therapy."* Another said, *"I think it's great for understanding the basics, but for deeper stuff, face-to-face is better."*

Interestingly, although the programme did not provide human contact, the researcher check-ins partially fulfilled this need for some participants. One stated, *"Talking to you made it feel less lonely… it kept me connected."* Another said, *"The check-ins were helpful because I could ask questions or just talk about how I was feeling."* These reflections reinforce findings from prior literature that even minimal human scaffolding increases adherence and emotional engagement in digital interventions.

The desire for human connection also extended to cultural and relational considerations. For example, one participant remarked, *"Sometimes you want someone who understands where you're coming from culturally."* The absence of cultural nuance in digital interventions was a subtle but important point raised by several participants, particularly those from minority backgrounds.

Altogether, this subtheme highlights a key concern which has been further discussed in **Table 3B**: while cCBT offers anonymity, autonomy, and privacy, users still crave relational resonance, emotional responsiveness, and emphatic care all key markers of traditional therapy.

Table 3B

Desire for Human Connection

Key Construct	**Participant Experience**	**Quotes from Participants**
Preference for interpersonal interaction in therapy	Participants emphasised that human interaction provides emotional validation and responsiveness not replicated digitally	"You miss having someone actually respond to you in the moment." (P9)
Need for emotional validation and empathy	Participants expressed wanting reassurance, understanding, and deeper exploration from a therapist	"Sometimes you just want someone to say that what you're feeling is okay." (P1)
cCBT as complementary, not a replacement	Participants viewed digital interventions as a supplement and not a substitute to traditional therapy	"I'd use it as extra support, but not as the main thing." (P7)
Researcher interaction as partial substitute for connection	Check-ins provided some sense of support and reduced isolation during the intervention	"The check-ins made it feel a bit more human and less like just an app." (P6)

Contextual Fit and Relatability

The final subtheme reflects how participants evaluated cCBT in relation to their personal context, therapeutic needs, and expectations. While participants generally positioned face-to-face

therapy as the "gold standard," they nevertheless recognised meaningful benefits of cCBT, especially regarding flexibility, early intervention, and self-reflection. For many, cCBT served as a well-timed, low-pressure introduction to psychological tools they might not otherwise access.

Participants often described cCBT as a "good first step."

One articulated this clearly: *"If someone's not ready for therapy, this is a good way to start… it helps you understand yourself."*

Another echoed, *"It's like an introduction to CBT. It gives you the tools, but it's not the whole therapy experience."*

Several participants emphasized that MoodGYM was contextually appropriate for their level of distress. For instance, one said, *"My anxiety wasn't severe, so this was the right level for me."* Another shared, *"If my anxiety was worse, I'd need more support, but for now this worked."*

This indicates that participants were able to self-assess the intervention's fit with notable accuracy reinforcing the value of cCBT for moderate anxiety and psychoeducation.

Participants also evaluated contextual fit in terms of life transitions, academic pressures, and emotional readiness. One explained, *"It came at a good time… I was overwhelmed with uni and needed something I could do on my own terms."* Another said, *"I wouldn't have made time for therapy, but this I could do."*

Relatability emerged as an important factor in participants assessments. Some appreciated that the programme was age appropriate to some degree. As one described, *"The modules on break up and parental upbringing felt quite useful as these are things I have started to experience and notice."* Another highlighted the predictability: *"It doesn't use outdated jargons. Which is helpful when you're anxious."*

However, contextual fit was not universally seamless. For some, the rigidity of the programme felt mismatched to their fluctuating emotional states. One participant said, *"Some days I needed something different than what the module was talking about."*

Another noted, *"It didn't always match where my mind was at."*

These tensions again reflect the inherent trade-offs of pre-structured programmes: reliability is gained at the expense of flexibility.

Importantly, many participants emphasised that despite these limitations, cCBT still offered meaningful value. One stated, *"It's not perfect, but it helps. That's the main thing."* Another summarised, *"It works for what it's meant to do."*

Across all interviews, participants emphasised that the level of personal relevance and emotional connection they felt toward the programme significantly shaped how they engaged with and benefited from cCBT. While the digital format offered autonomy, privacy, and flexibility, participants consistently outlined that cCBT was most useful when understood as one component within a broader landscape of mental health support rather than a complete substitute for traditional therapeutic relationships. Their reflections reveal a complex and realistic understanding of what cCBT can and cannot offer.

Participants widely described cCBT as a supplement rather than a substitute to traditional therapy, noting that digital modules helped reinforce concepts learned in face-to-face work, such as recognising unhelpful thoughts, practising grounding strategies, or reflecting on emotional triggers. For those who had previous therapy experience, cCBT served as a form of skills consolidation, providing structured reminders and opportunities to apply CBT strategies independently. P8 stated: *"I have been to therapy before, and this felt like a good revision that I can keep coming back to."*

It was appreciated for its predictability and accessibility, allowing participants to revisit tools as needed. However, they also articulated that deeper emotional work particularly exploring trauma, identity, grief, or relational patterns required human warmth and attuned guidance that a programme could not replicate.

For others, cCBT functioned as a stepping-stone into mental health support, especially for participants who were unsure about entering therapy or felt hesitant to disclose personal experiences to a clinician. This introductory experience helped some participants develop the language and confidence to eventually seek formal therapy, demonstrating cCBT's potential role in lowering help-seeking barriers among YA who may otherwise avoid or delay accessing support.

Participants also viewed cCBT as a maintenance tool between therapy sessions or during periods when life circumstances made ongoing therapy difficult to sustain. The ability to revisit modules, redo exercises, and reflect at their own pace provided continuity of care. MoodGYM's consistency though sometimes experienced as generic offered stability, especially for individuals navigating fluctuating anxiety levels.

Finally, many participants considered cCBT an accessible alternative when therapy was not feasible. For these individuals, cCBT filled an otherwise unmet need, offering psychoeducation, coping skills, and cognitive strategies that contributed to observable reductions in worry, overthinking, and emotional distress. Although they still perceived face-to-face therapy as superior for personalisation and relational connection, participants valued cCBT's flexibility and availability, noting that "something is better than nothing," particularly in moments of early distress as noted in **Table 3C**.

Table 3C

Contextual Fit and Relatability

Key Construct	**Participant Experience**	**Quotes from Participants**
An appropriate early intervention tool	Suitable for moderate anxiety and early-stage support	"It's something you can start with before needing anything more intense." (P3)
Alignment with life context and accessibility needs	Participants valued how cCBT fit into their routines and life demands	"It worked because I could fit it around everything else going on." (P10)
Limitations in adapting to fluctuating emotions	Fixed module structure sometimes failed to align with participants immediate emotional needs	"What I needed that day didn't always match what the module was about." (P12)

Overall, Theme three highlights that participants do not view cCBT in simplistic or binary terms. Instead, they position it as a meaningful, context-dependent tool helpful in specific ways, limited in others, and deeply influenced by how personally relevant and emotionally resonant the

material feels. When framed as a supportive component within a wider continuum of mental health care, cCBT becomes a valuable resource for YA experiencing moderate anxiety.

Theme 4: Learning and Application of CBT Principles

Theme four captures how participants engaged with, incorporated, and applied the core principles of cognitive behavioural therapy (CBT) throughout their interaction with cCBT. While the depth of learning varied across individuals, participants consistently described meaningful cognitive insights, behavioural shifts, and a growing sense of self-efficacy as they advanced through the program.

Across the interviews, YA reported that MoodGYM offered a structured, easy-to-comprehend introduction to CBT ideas that helped them make sense of their anxiety and everyday emotional reactions. Although the program was not personalized and lacked therapeutic dialogue (as explored in earlier themes), participant's however, articulated genuine learning and psychological benefit from working through the exercises. Many identified new thought-feeling-behaviour connections, experimented with behavioural strategies, and reflected more purposefully on their internal experiences.

Cognitive Insight and Self-Awareness

A primary way in which participants benefited from cCBT was through enhanced awareness of their thought patterns, emotional reactions, and triggers. Many described learning about the relationship between thoughts and feelings for the first time or in a way that felt more concrete and accessible. The structured quizzes, especially the cognitive distortion tasks and "thinking style" assessments, encouraged reflection on habitual thinking patterns.

Participants frequently mentioned a shift from passive emotional responses to a more observational standpoint, reporting that the program helped them "see what's going on underneath" or "catch" unhelpful thoughts earlier.

For example, a participant described the program as helping him identify and name the negative automatic thoughts that previously felt overwhelming and amorphous:

"*It made me realise, oh, I actually do this thing where I assume the worst… I never labelled it before, but now I see it happening."*

Similarly, P3 reported that the module on unhelpful (warped) thinking helped her recognize thought patterns she had not been knowingly aware of:

"The way it broke down the thinking styles made me go, 'oh wow, that's literally me.' I hadn't connected that before. It was actually kind of confronting but very helpful."

Participants also valued the immediate feedback incorporated into the program's assessments. Although some found the modules repetitive, many emphasized that regular check-ins forced them to reflect on specific thoughts and how these linked to emotional shifts over the week. P2 described this as "pausing to reflect," noting:

"You don't stop and analyse your thoughts during the day, but the program makes you do that. And then I start noticing them outside the program too."

For several participants, this new awareness extended beyond surface level thinking and into a broader understanding of self. They pronounced greater insight into why certain situations provoked anxiety and how long-standing beliefs shaped their reactions. P1, for instance, highlighted how the exercises revealed deeper patterns:

"It showed me that a lot of my anxiety comes from this need to do everything perfectly… I didn't connect that before, but now I can see it's a pattern."

As a whole, these reflections show how cCBT facilitated cognitive insight by providing language, frameworks, and prompts that participants used to make sense of their experiences. **Table 4A** illustrates how the learning was self-directed, the structured environment served as a catalyst for reflective awareness.

Table 4A

Cognitive Insight and Self-Awareness

Key Construct	**Participant Experience**	**Quotes from Participants**
Recognition of cognitive distortions	Participants recognized negative automatic thoughts and "thinking styles"	"This is literally me, I didn't know I was doing that." (P5)

Increased emotional self - awareness	Participants noticed emotions earlier and connected them to thoughts	"I start noticing them outside the program too." (P2)
Identification of deeper patterns	Some participants recognised long-standing beliefs influencing anxiety	"This need to do everything perfectly… I can see it's a pattern." (P1)
Greater sense-making of anxiety	CBT frameworks helped clarify triggers and emotional reactions	"I never labelled it before, but now I see it happening." (P3)

Behavioural Change and Skill Acquisition

Beyond cognitive understanding, participants disclosed tangible behavioural changes that emerged from using the program. These behavioural shifts were often small but meaningful, parallel closely with CBT's focus on experimenting with new actions as a means of disrupting anxiety cycles.

Many participants described trying out the pragmatic exercises such as relaxation techniques, structured breathing, arranging positive activities, or breaking tasks down into manageable steps. For instance, P10 stressed that she began implementing relaxation strategies during overwhelming moments:

"I actually used the breathing thing before a presentation. It helped calm me down. I wouldn't have thought to do that before."

Others mentioned that goal-setting and behavioural activation activities encouraged them to re-engage with neglected activities. P4 reflected on this shift:

"I started going for walks again because the program said to add one thing that made me feel good… it sounds basic, but I realized I'd stopped doing stuff that helps."

Participants also reported skill acquisition in areas such as problem-solving and emotional regulation. The sequential nature of MoodGYM's modules appeared to structure learning

effectively, guiding participants from cognitive insight into concrete behavioural tasks. For example, P1 described integrating both the cognitive and behavioural aspects:

"It wasn't just the thought stuff. It made me try different actions too, like doing small tasks instead of letting everything pile up."

Notably, several participants discussed how behavioural strategies helped them interrupt escalating anxiety. P5 highlighted the usefulness of having "tools I can use immediately," explaining:

"Sometimes I feel anxiety rising and I remember the grounding thing… just doing something physical helps me snap out of the spiral."

Although some participants engaged more deeply in practical tasks than others, the majority reported learning at least one behavioural tool they viewed as personally useful. Several other constructs emerged that further explained these changes. These small shifts are presented in **Table 4B** suggest that cCBT can support behavioural change even without in-person therapeutic guidance.

Table 4B

Behavioural Changes and Skill Acquisition

Key Construct	**Participant experience**	**Quotes from participants**
Relaxation and breathing	Used techniques before stressful events	"I used the breathing thing before a presentation… it helped." (P10)
Activity scheduling	Re-engaging with rewarding or calming activities	"I started going for walks again… I'd stopped doing stuff that helps." (P4)
Problem-solving and task breakdown	Improved ability to manage overwhelming tasks	"Doing small tasks instead of letting everything pile up." (P1)

Grounding and physical coping strategies	Interrupting anxiety spirals	"Just doing something physical helps me snap out of the spiral." (P2)

Empowerment and Self-Reflection

The third subtheme captures how participants developed a sense of autonomy, capability, and control over their anxiety through engaging with cCBT. Many described feeling empowered by understanding their thought patterns, applying coping strategies, and noticing even small improvements in their emotional state.

Participants frequently mentioned a shift from feeling overwhelmed by anxiety to feeling more trained to handle it. P5 expressed this concisely:

"It made me feel like I could manage things myself. Even if it's small, it gave me something to work with."

For others, empowerment came from recognizing their own role in changing their emotional patterns. P3 reflected that the program helped him take ownership of his coping:

"I realised I have more control than I thought… like I can actually do something instead of just waiting to feel better."

This sense of empowerment was often linked with self-reflection. Several participants mentioned that the program prompted them to think about who they were, why they reacted as they did, and what they genuinely needed in moments of stress. P2 described this as "*actually learning about myself*," adding:

"It makes you look at yourself in a way you don't normally… you reflect because the program kind of forces you to."

Even participants who preferred the personal components of face-to-face therapy acknowledged that the self-driven nature of cCBT fostered a specific type of internal reflection that might not emerge in the same way during in-person sessions. As P1 put it:

"With a therapist, you talk it out, but with this, you sit with your thoughts more. It's different, but it made me reflect."

The autonomy participants gained also appeared to enhance their confidence in engaging with future mental health support. Some described cCBT as a "*starting point*" that made them more open to therapy by reducing uncertainty or fear of psychological intervention. P10 explained:

"Doing this made me less scared of therapy. Like, I get the basics now, so I'd feel more prepared."

Overall, the subtheme reflects how cCBT contributed to a growing sense of agency. Despite limitations noted earlier, such as lack of personalisation or relational depth participants consistently described a sense of control and readiness that developed through their engagement with CBT tools as described in **Table 4C**.

Table 4C

Empowerment and Self-Reflection

Key Construct	**Participant Experience**	**Quotes from Participant**
Increased sense of agency	Participants felt more capable of managing anxiety	"It made me feel like I could manage things myself." (P6)
Ownership of coping	Recognising personal role in emotional regulation	"I realised I have more control than I thought." (P3)
Deep personal reflection	Program prompted introspection and self-exploration	"It makes you look at yourself… you reflect." (P2)
Confidence for future help-seeking	Reduced fear of therapy; greater readiness	"I'd feel more prepared for therapy now." (P10)

Theme 5: Perceived Impact on Anxiety and Wellbeing

Theme five focuses on the ways participants evaluated the personal, emotional, and psychological impact of engaging with a cCBT program. Across interviews, participants articulated both direct and indirect outcomes of their engagement, emphasising not only

symptom change but also shifts in self-understanding, coping capacity, and emotional acceptance. The theme reflects how participants made sense of their anxiety over time, how it fluctuated, how it responded to cCBT content, and how the intervention fitted into their broader mental health journeys. They also reflected on the changes noted in their post-intervention GAD-7 scores.

The findings in this theme align closely with contemporary evaluations of digital mental health interventions, which highlight that users tend to derive both symptom-focused benefits and extensive psychosocial effects, such as feeling more empowered or emotionally regulated. However, the degree to which these effects were sustained varied significantly between participants, revealing important nuances relevant to early-intervention models, adherence challenges, and the relational limits of self-guided cCBT.

Immediate vs. Lasting Effects

Participants described a clear distinction between immediate, "in-the-moment" benefits experienced during or shortly after completing modules, and longer-term, sustained effects that persisted after the intervention period. While most participants reported short-term improvements, only some experienced consistent, ongoing benefits. This aligns with existing literature as well as the cumulative mean score obtained on the post intervention GAD-7 tool, showing that self-guided digital interventions often produce early positive shifts but may not maintain symptom reduction over time without continued engagement or supplementary support.

Across interviews, participants frequently described experiencing an "instant" sense of clarity, aid, or emotional anchoring following modules. The structure of the program its guided worksheets, psychoeducation, and cognitive restructuring prompts appeared to reduce cognitive load and emotional uncertainty in the short term.

For example, P1 shared:

"Right after doing a module I felt a bit lighter, like okay, I understand my emotions a bit better."

Similarly, P6 emphasized the physical sense of calm that emerged from applying relaxation or thought-challenging exercises:

"When I did the breathing stuff or wrote down my thoughts, I felt calmer straight away."

P5 described how cognitive awareness reduced sentimental vulnerability:

"It made things feel less chaotic. Just organising my thoughts made me feel better instantly."

These immediate impacts highlight the core strength of cCBT:
it provides instant, structured cognitive framework, helping participants reframe experiences or externalise unhelpful thoughts in a controlled, subtle environment.

Lasting Effects indicated dependence on engagement, reinforcement, and life context. Longer-term effects were more variable and conditional on several factors, including frequency of module completion, level of emotional commitment, relevance of content, readiness for change, and real-world application of strategies.

Participants described that while concepts or awareness appeared to persist, the emotional benefits often faded without deliberate reinforcement.

As P10 articulated:

"The impact was there but temporary. I had to apply what I learnt for it to stay."

P3 noted the difficulty of sustaining new habits:

"It helped me think differently for a few days, but then I got busy and I slipped back into old patterns."

P4 captured the experience of cognitive, rather than emotional, retention:

"I think it planted a seed. The ideas stuck with me, even if the feeling didn't last."

These reflections suggest that lasting benefits require ongoing active engagement, consistent with research showing that behavioural change is strengthened through repetition and reinforcement.

A subtle but meaningful pattern emerged in how participants described the limitations of self-guided cCBT. Several believed the program helped but lacked interpersonal or tailored reinforcement necessary for deeper, long-term change.

P7 reflected:

"If someone was consolidating and helping me apply it, it would've stayed longer. Someone to discuss and go back to what I have reflected on would've made a big difference. On my own, it faded."

This resonates with the wider assessment in digital mental health literature that unguided programs flatten in effectiveness, particularly for users experiencing moderate-to-high levels of anxiety as shown in **Table 5A**.

Table 5A

Immediate vs. Lasting Effects

Key Construct	**Participant Experience**	**Quotes from Participants**
Immediate cognitive relief post module completion	Participants described feeling calmer and emotionally grounded shortly after completing modules	"After finishing a session, my thoughts felt more organised." (P2)
Short-term emotional clarity	Techniques introduced in cCBT provided temporary anxiety reduction	"It helped me slowdown in the moment, even if it didn't last forever." (P8)
Difficulty sustaining benefits without reinforcement	Participants reported that positive effects faded when techniques were not consistently practiced	"If I didn't keep using it, I noticed I went back to my old thinking." (P4)
Long-term benefit dependent on regular engagement	Sustained improvements occurred when participants actively incorporated CBT strategies in daily life	"The more I used the tools, the more they stuck with me." (P11)

Overall, the subtheme demonstrates that cCBT reliably generated short-term gains in clarity, calmness, and cognitive insight, but the sustainability of these effects depended heavily on user engagement, environmental stability, and personal motivation.

Preventive Potential

Participants also discussed the preventive, early-intervention value of cCBT how it helped them identify early warning signs, prepare for stressors, and safeguard against escalation of anxiety. For many, the value of the intervention lay not only in reducing symptoms but in equipping them with tools to manage future episodes.

Early Warning Recognition: “It stopped things from getting worse.”

Several participants shared that cCBT improved their ability to identify early anxiety cues, allowing them to intervene sooner and more effectively.

As P5 explained:

“It stopped small worries about the baby turning into big ones.”

P1 similarly stated:

“I could tell earlier when I was getting overwhelmed, so I didn’t spiral like before.”

This highlights a key benefit of CBT-based interventions: they enhance emotional literacy, enabling individuals to recognise symptom onset before distress elevates.

Participants often discussed the sense of preparedness that emerged from learning structured strategies.

P6 described the program as:

“I felt like I had tools in my back pocket for when things got tough.”

P10 identified increased self-efficacy:

“It made me trust myself more. I know what to do now when I feel anxious.”

These reflections indicate that the preventive function of cCBT lies partly in the confidence and cognitive predictability it offers.

Digital CBT emerged as a stepping-stone to future help-seeking. Additionally, several participants described the program as lowering the threshold for seeking additional mental health support a significant finding given widespread stigma and accessibility issues.

P6 noted: *"It was like a gateway. I think it made me more open to trying proper therapy in the future."*

P2 observed: *"It helped me realise I actually need more support, which was scary but helpful."*

For some participants, the program illuminated the gap between self-management and structured therapeutic support, contributing to more informed and empowered decision-making.

The preventive effects were not universal across participants. A smaller number of participants viewed the preventive impact as limited, reflecting inconsistent engagement or difficulty applying techniques under stress.

P4 shared:

"It helped when I remembered to use it, but I'm not sure it prevented anything big."

Table 5B illustrates how this variability indicates that preventive outcomes may be moderated by baseline anxiety severity, cognitive flexibility, emotional resilience, and external stressors.

Table 5B

Preventive Potential

Key Idea	**Participants Experience**	**Quotes from Participants**
Early recognition of anxiety triggers	Participants reported increased awareness of early warning signs of anxiety	"I started noticing my stress earlier before it got overwhelming." (P3)
Increased coping readiness	Participants described feeling equipped with strategies for managing future anxiety episodes	"I felt more prepared when things got stressful." (P9)
Increased self-efficacy and confidence	Learning CBT strategies enhanced participants confidence in managing anxiety independently	"It made me feel like I had some control over my anxiety." (P1)

Stepping-stone to seeking help	Participants reported increased openness toward seeking professional mental health support	"It made me more comfortable with the idea of getting more help." (P7)

Overall, participants perceived cCBT as an effective preventive, preparatory, and early-intervention tool, even when symptom reduction was not dramatic.

Emotional Normalisation

Perhaps the most meaningful psychological shift participants described was a sense of emotional normalization, the experience of seeing their anxiety as understandable, common, and manageable. This subtheme highlights how cCBT can reduce self-stigma, shame, and anxiety-related fear by validating user's emotions and providing psychoeducation.

Validation Through Knowledge: "I'm not stupid for feeling this way."

Participants frequently spoke about the relief of learning that their symptoms were common among others experiencing anxiety.

P2 described: *"Knowing other people think like this made me feel less weird."*

P8 mentioned:

"It made me realise anxiety is normal and not something wrong with me."

P6 appreciated the scientific framing of emotional responses:

"I liked how it explained why my brain reacts the way it does. It made it feel less scary."

This aligns with evidence showing that psychoeducation reduces self-blame and fosters emotional acceptance.

Feeling safe to explore emotions privately because cCBT is self-paced and non-judgmental, participants reported feeling safe expressing difficult thoughts without fear of stigma.

Participant noted:

"It felt easier to be honest because it was just me and the computer."

Participant added:

"It made me feel heard even though it's online. It didn't judge me for my thoughts."

This highlights a key strength of digital interventions:
they reduce the social risk often associated with discussing mental health face-to-face.

Normalization acted as a catalyst for self-compassion, for several participants, normalisation contributed to broader identity shifts, including increased acceptance, reduced shame, and improved emotional resilience.

P12 described:

"It made me feel like I'm not stupid… just human."

This sense of self-compassion was an important factor in long-term well-being even if symptom reduction was modest. It helped participants adopt healthier internal dialogues and relate to themselves with greater gentleness and understanding.

When systemization felt too general. Some participants felt that while cCBT provided reassurance, its lack of personalisation limited its emotional impact.

Another participant shared:

"It was comforting, but also a bit generic at times."

While normalisation helped participants feel less alone, the absence of tailored emotional feedback meant that for some, deeper feelings went unaddressed.

into broader pathways of care where digital tools complement, rather than replace, human support.

Theme five highlights the varied ways cCBT influenced participants' anxiety and psychological wellbeing. Many reported immediate benefits, including cognitive relief, emotional regulation, and improved understanding of anxiety. These short-term gains suggested that cCBT effectively provided rapid coping support and increased awareness of thought patterns and triggers.

However, the sustainability of these improvements varied. Some participants experienced lasting changes, particularly in cognitive awareness and coping confidence, while others noted that

benefits diminished once active engagement decreased. This pattern reflects a key limitation of self-guided digital interventions, which often require ongoing use or supplementary support to maintain outcomes.

Participants also emphasized the preventive value of cCBT, including early identification of anxiety triggers, improved coping preparedness, and increased willingness to seek further support. Emotional normalization was particularly impactful, reducing feelings of isolation and self-criticism. This has been further broken down in **Table 5C**.

Nevertheless, participants noted limitations, including generic content and reduced emotional depth, reinforcing the importance of integrating cCBT within broader, supportive care pathways.

Table 5C

Emotional Normalisation

Key Construct	**Participant Experience**	**Quotes from Participants**
Reduction in self-stigma and shame	Participants described feeling reassured knowing anxiety was common and understandable	"I realised I wasn't the only one thinking like this." (P10)
Increased emotional acceptance	Psychoeducation helped participants view anxiety as manageable	"It helped me accept that anxiety is something I can work with." (P6)
Private environment for emotional reflection	Participants felt more comfortable exploring difficult emotions independently	"It was easier to be honest when I didn't have to say it out loud." (P5)
Development of self-compassion	Participants described becoming more understanding and less critical of themselves	"I started being less hard on myself when I felt anxious." (P12)

To conclude, theme five focused on the perceived impact of cCBT is complex, layered, and highly individual. While not universally transformative, cCBT holds significant potential as an early-intervention, preventive, and emotionally normalising tool for YA navigating anxiety. The

findings highlight the importance of accessible digital support while reinforcing the enduring value of personalised, relational mental health care.

Participants described a sophisticated and balanced understanding of computerised cognitive behavioural therapy (cCBT), identifying a plethora of strengths such as flexibility, affordability, and privacy alongside a range of structural limitations, including limited personalisation, lack of real-time feedback, and reduced emotional depth. This theme captures these dualities and reveals how YA make sense of the benefits and constraints of digital mental health interventions in relation to their lived experience of anxiety and psychological wellbeing.

In summary, while effective for skill-building and self-management, cCBT was seen as best used alongside therapy. Participants emphasized the value of hybrid models combining digital accessibility with therapist support.

CHAPTER 5

DISCUSSION

This study aimed to understand how YA in New Zealand perceive and experience engagement with a self-guided cCBT programme (MoodGYM) for anxiety. The findings relating to accessibility and convenience address several of the study's research questions, particularly those concerning participants experiences of engaging with a self-guided programme, the aspects they found helpful or unhelpful, and the ways in which cCBT influenced their sense of coping and agency. Rather than functioning merely as a practical advantage, accessibility emerged as a psychologically meaningful feature that shaped engagement, emotional safety, and perceptions of usefulness.

Accessibility and Perceived Impact on Anxiety Experiences

The first research question asked how YA perceive the contribution of cCBT on their experiences of anxiety symptoms. The findings indicate that accessibility indirectly influenced anxiety experiences by reducing anticipatory stress linked with seeking help. Participants did not describe cCBT as directly irradicating anxiety symptoms through accessibility alone; instead, ease of access changed 'how' and 'when' anxiety could be addressed. By enabling engagement at moments of emotional readiness, cCBT appeared to support more responsive self-management of anxiety, specifically during periods of elevated distress.

This aligns with cognitive-behavioural understandings of anxiety as a fluctuating, context-dependent experience rather than a static condition (Beidas et al., 2014; Clark & Beck, 2010). Traditional therapy models, which rely on fixed appointments, may fail to coincide with moments when anxiety is most prominent or when individuals feel capable of reflective engagement. Contradictorily, participants in this study experienced cCBT as allowing intervention to occur closer to the point of distress. This temporal responsiveness may enhance perceived relevance and effectiveness, even when symptom reduction is gradual (Mewton et al., 2014).

Previous quantitative research has demonstrated that cCBT can reduce anxiety symptoms (Andrews et al., 2018; Richards & Richardson, 2012), but fewer studies have examined how

users subjectively experience this impact. The present findings expand existing literature by suggesting that perceived symptom reduction may be moderated by reductions in avoidance, anticipatory worry, and emotional overload associated with accessing support. In this way, accessibility functions as a contextual facilitator that shapes the emotional conditions under which therapeutic work occurs. In contrast, some participants reported that accessibility did not reduce anxiety, as the self-guided format reduced accountability and allowed avoidance of difficult content. For these individuals, flexibility contributed to inconsistent engagement, suggesting that accessibility alone may not facilitate symptom improvement without structured support or interpersonal guidance.

Accessibility as a Facilitator of Engagement

Accessibility and convenience were repeatedly framed as helpful, particularly in comparison to face-to-face therapy. However, the importance of these components lies less in their novelty and more in how they collaborate with participant's psychological needs and life circumstances.

Participants described accessibility as decreasing the threshold for engagement, especially for those who were hesitant about therapy, concerned about shame, or experiencing moderate anxiety rather than severe distress. According to previous studies around stepped-care models, low-intensity interventions can be suitable and effective for individuals who may not yet require or desire specialist treatment (Bower & Gilbody, 2005). Computerized CBT's accessibility allowed participants to engage without committing to the identity of being a "therapy client," which may be specifically prominent for YA exploring identity formation and independence (Gulliver et al., 2010).

The findings also resonate with literature on help-seeking barriers among YA, which highlights cost, time restrictions, stigma, and fear of judgement as major hinderances (Gulliver et al., 2010).While studies conducted by Zhu et al., (2025) have recognized these barriers, this study contributes a more specific understanding of how removing them can encourage psychological safety and willingness to participate. Participants did not simply appreciate convenience; they experienced handiness as validating Mulder et al., (2022) their distress and making self-care feel permissible rather than excessive.

Engagement with a Self-Guided Programme: Barriers and Facilitators

The study explored how participants narrated their experiences of engaging with a self-guided cCBT programme, including barriers and facilitators. Accessibility emerged as a main facilitator, while traditional therapy structures were often indirectly framed as barriers. This contrast emphasizes how engagement is shaped not only by intervention content but by digital delivery format.

Participant's dialogue suggests that self-guided engagement allowed them to avoid both institutional and interpersonal gatekeeping. The absence of waiting lists, referrals, and initial assessments allowed instant access, which participants noted as empowering. This promptness is relevant in the context of findings from service-based research in New Zealand, which has documented significant delays in acquiring subsidized mental health care (Mulder et al., 2022).

Psychological barriers were also noteworthy. Participants described how anonymity and privacy reduced fears of judgement, especially for those with social anxiety or from cultural backgrounds where therapy is stigmatized. This finding is in line with research suggesting that digital interventions may be particularly compelling to individuals who are apprehensive to seek face-to-face support (Knowles et al., 2014). The present study adds depth by demonstrating how reduced interpersonal exposure allowed participants to engage more candidly with therapeutic material, rather than managing feelings or emotional performance.

At the same time, accessibility did not mitigate all barriers. Some participants acknowledged that self-guided formats require self-motivation and may not deliver sufficient support during times of high distress. This elucidates the importance of viewing cCBT as one component within a broader mental health system rather than a single solution.

Autonomy, Agency, and Self-Efficacy

The final research question examined how using cCBT guided participants sense of coping, agency, and self-efficacy in relation to their anxiety. Autonomy and self-paced learning were central to these experiences. Participants described feeling more in command of their therapeutic journey, which appeared to amplify confidence and engagement.

From a theoretical perspective, these findings align with self-determination theory, which characterized autonomy as a key factor in intrinsic motivation and psychological well-being (Vallerand, 2000). By allowing participants to decide when and how to engage, cCBT supported

a sense of ownership over mental health work. This is particularly applicable for emerging adults, for whom developing independence and self-regulation are central developmental tasks.

Participants experience of being able to pause, reflect, and return to material suggest that self-paced learning may promote deeper cognitive processing. This challenges assumptions that therapeutic change requires synchronous interaction with a clinician. While face-to-face therapy offers relational depth, the findings indicate that autonomy and control can also be therapeutic, particularly for individuals who find interpersonal contexts overwhelming (Salaheddin & Mason, 2016).

Importantly, participants did not describe autonomy as isolating; rather, it fostered a sense of competence and self-trust. This suggests that cCBT may support self-efficacy by enabling individuals to practice coping skills independently, reinforcing the belief that they can manage anxiety outside of professional clinical settings.

While previous research has established that cCBT is effective and accessible, this study contributes a more in depth understanding of why accessibility matters from the user's perspective. The findings highlight accessibility as a psychological mechanism that shapes readiness, safety, and engagement, rather than a neutral logistical feature.

This perspective is particularly valuable for clinical psychology, where access is often discussed in structural terms. By highlighting participants lived experiences, the study suggests that improving access is not only about increasing service availability but about creating conditions that feel emotionally safe and developmentally appropriate.

The study also contributes to the New Zealand context, where YA face increasing anxiety alongside constrained mental health services. Understanding how cCBT can function as an early intervention or entry point into care has implications for service design and policy, particularly within stepped-care and youth mental health systems (Ferris-Day et al., 2025) .

One of the most novel contributions of this study is the conceptualization of psychological accessibility as a vital therapeutic value. Rather than using accessibility as a neutral delivery point, participants accounts suggest that ease, flexibility, and autonomy actively shape emotional engagement, learning, and perceived benefit.

This insight encourages a revaluation of how digital interventions are evaluated. Traditional outcome measures focus on symptom reduction but may miss experiential factors that influence whether individuals engage at all. The present findings suggest that accessibility itself may facilitate therapeutic processes by lowering threat, enhancing agency, and increasing emotional openness.

From a reflexive thematic analysis standpoint, this theme reflects participants meaning making rather than targeted efficacy claims. It focuses on lived experience and highlights how YA arrange mental health support within real-world limitations.

In addressing the research questions, this study illustrates that accessibility and convenience are central to young adult's experiences of cCBT, shaping engagement, perceived adequacy, and psychological safety. Rather than operating solely as practical advantages, flexibility, reduced barriers, and autonomy influenced how participants related to their anxiety and to the therapeutic process itself. These findings highlight the importance of designing mental health tools that align with the lived realities of emerging adults and position cCBT as a meaningful element of early and available anxiety support.

Motivation and Engagement

Motivation and engagement is a primary factor in the success of digital mental health interventions: sustaining engagement and motivation over time. While accessibility may promote initial understanding, engagement decides whether therapeutic content is meaningfully executed and applied. In relation to the present study's research questions, the theme of engagement and motivation provides insight into how YA experience self-guided cCBT, what facilitates or hinders their continued use, and how engagement influences their sense of coping and agency in controlling anxiety.

Rather than conceptualizing engagement as a simple matter of completion, participants account revealed engagement to be dynamic, emotionally driven, and linked to personal reflection. This finding supports a growing body of qualitative research that challenges narrow, usage-based definitions of engagement in digital therapy (Yardley et al., 2016).

A key contribution of this study is its conceptualisation of engagement with cCBT as dynamic rather than static. Participant's motivation was not completely driven by the observed usefulness

of the programme, nor was disengagement simply a matter of lack of interest. Instead, engagement appeared as a fluctuating process shaped by internal states like curiosity, anxiety, fatigue along with external structures like regular check-ins, reminders, and broader life contexts typical of emerging adulthood.

This finding aligns with growing analysis of adherence-focused models in digital mental health, which often frame engagement as an individual responsibility or a binary outcome (completed vs. dropped out). Previous research has highlighted that YA engagement with digital interventions is occasional and context-dependent, influenced by academic stress, social commitments, and emotional capacity (Baumel et al., 2019; Yardley et al., 2016). The present study extends this literature by demonstrating how these contextual pressures interact with motivational drivers over time, particularly in relation to anxiety-related avoidance and emotional effort.

By considering participants lived experiences, this study progresses beyond quantitative metrics of module completion to emphasise meaningful engagement including reflective effort, emotional readiness, and perceived relevance. This perspective supports calls for more refined models of engagement that acknowledge disengagement not as failure but as part of a cyclical process of use (Kelders et al., 2012).

Curiosity and Structured Learning as Catalysts for Initial and Sustained Engagement

In relation to the research question examining how participants experience engaging with a self-guided cCBT programme, the findings suggest that curiosity and cognitive structure worked as primary encouraging entry points. Participants were drawn to cCBT not only as a means of symptom reduction but also as a chance for self-understanding and psychological learning. This intention positions users as active learners rather than passive recipients of therapeutic information.

This finding can be associated with CBT theory, which emphasises the role of cognitive insight in fostering motivation for change (Clark & Beck, 2011). However, the present study extends this understanding by demonstrating how structured learning can evoke curiosity and self-reflection in a digital context. For YA, who are accustomed to consuming information through online

platforms, cCBT may feel familiar and intellectually accessible, reducing resistance to engagement.

Additionally, this can be aligned with self-determination theory (Ryan & Deci, 2000), which stresses how intrinsic motivation such as curiosity and interest as a key driver of sustained engagement. Prior studies have shown that individuals who perceive digital interventions as informative or skill-building are more likely to continue with them (Beatty & Binnion, 2016). However, the present study adds depth by expressing that curiosity alone was inadequate; it was the combination of curiosity and structured learning pathways that sustained engagement over time.

The structured, modular design of MoodGYM appeared to reduce cognitive burden and anxiety-related avoidance factors that are particularly prominent for individuals experiencing anxiety. This supports earlier findings that clear guidance, predictable improvement, and manageable task demands enhance engagement in digital CBT (Donkin et al., 2011). Importantly, the present study highlights that structure did not feel limited to participants; instead, it was experienced as containing and supportive. This challenges presumptions that YA prefer entirely flexible or non-linear digital experiences and suggests that structure may serve a regulatory function, particularly for those with anxiety (Ganzer, 2013).

A specific contribution of this study is the finding that structured learning also functioned as a protective factor against emotional overload. By breaking content into gradual steps, cCBT may reduce the emotional burden of self-reflection, making engagement feel more achievable. This insight has implications for intervention design, suggesting that structure is not merely a usability feature but a psychologically meaningful component of engagement.

Accountability and the Role of Human Element

One of the most significant contributions of this study is its identification of accountability as a central mechanism of engagement, even within a self-guided intervention. Participant's reliance on researcher check-ins, study participation, and interpersonal encouragement challenges the impression that cCBT operates effectively in isolation from human contact.

This finding corroborates previous research showing that guided or minimally supported digital interventions tend to have higher adherence and better outcomes than fully unguided

programmes (Baumeister et al., 2014; Richards & Richardson, 2012). However, the present study extends this literature by showing that accountability need not take the form of clinical guidance to be effective. Instead, relational presence, perceived support, and a sense of being "held in mind" were enough to sustain motivation.

From a theoretical perspective, this can be understood through the views of social accountability and relational motivation (Hess et al., 2001). Knowing that progress would be discussed even concisely appeared to validate engagement and counteract avoidance. This is particularly relevant for YA with anxiety, who may struggle with self-initiation and follow-through in the absence of external structure.

An essential and fresh insight from this study is that accountability to the study was experienced as supportive rather than forceful. Participants did not describe feeling pressured; instead, they felt encouraged and accompanied by the researcher. This distinction is critical, as overly controlling forms of accountability may threaten autonomy and intrinsic motivation (Ryan & Deci, 2000). The findings suggest that minimal, relationally attuned check-ins can strengthen engagement without compromising the self-directed nature of cCBT.

This has important implications for application. Placing minimal human support such as periodic check-ins, automated but personalised reminders, or peer accountability mechanisms may notably improve engagement while maintaining scalability.

Anxiety, Avoidance, and the Paradox of Need

In addressing the research question concerning barriers to engagement, the findings highlight a contradiction central to anxiety-focused interventions: participants were often at least able to engage at precisely the moments when support was most needed. Emotional avoidance, cognitive fatigue, and low mental capacity emerged as significant hurdles, demonstrate prominent features of anxiety itself.

This aligns with CBT theory, which conceptualizes avoidance as a maintaining factor in anxiety disorders (Clark & Beck, 2010). The present study adds an important experiential dimension by illustrating how avoidance operates not only in relation to feared situations but also in relation to therapeutic engagement. This suggests that disengagement from cCBT may, in some cases, represent a symptom-related response rather than a dismissal of the intervention.

An alternative explanation of these findings is that barriers to regularity reflect broader challenges in YA help-seeking courses rather than limitations of cCBT per se. Academic pressures, work demands, and emotional fatigue are well-documented stressors in this developmental period (Arslan et al., 2023). From this perspective, inconsistent engagement may be an expected outcome of delivering mental health interventions within complex, taxing life contexts.

However, the study also raises important questions about how cCBT programs might better accommodate shifting motivation and emotional capacity. The findings suggest that fixed, linear designs may not align with the lived realities of YA. Adjustable pacing, flexible deadlines, and just-in-time support may help bridge this gap.

This study makes several important contributions to the literature on digital mental health engagement. First, it emphasizes on engagement as interpersonally and contextually located, even within self-guided interventions. Second, it highlights structure as emotionally inclusive, rather than solely organizational. Third, it positions accountability towards the researcher as a form of care rather than control.

Unlike many studies that focus on engagement as a predictor of outcomes, this research centres engagement as a phenomenon worthy of exploration. By using reflexive thematic analysis, the study captures the refined, sometimes contrasting experiences of YA navigating cCBT alongside anxiety and life demands.

The findings also offer a counter-narrative to deficit-based interpretations of disengagement. Rather than framing inconsistency as lack of motivation or oversight, this study interprets it as an understandable response to emotional overload, competing priorities, and anxiety-related avoidance. This perspective has ethical implications for how digital interventions are evaluated and utilized.

In summary, the findings related to engagement and motivation tell us that cCBT use among YA is shaped by curiosity, structure, accountability, and significant contextual barriers. Involvement is neither linear nor solely self-sufficient; it is relational, emotionally dependent, and fixed within the broader patterns of young adult life. By highlighting these processes, this study contributes novel insights that can inform the design, delivery, and evaluation of digital mental health

interventions, ultimately supporting more responsive and compassionate approaches to cCBT engagement.

While engagement and motivation shape whether YA continue to interact with cCBT, they do not fully account for how such engagement turns into meaningful psychological change. Participants use of cCBT was dynamic and dependent on curiosity, structure, accountability, and contextual barriers. However, sustained engagement alone does not guarantee therapeutic impact. The question that follows is not only whether participants engaged in the program, but how they related to its content and integrated it into their understanding of themselves and their anxiety.

This shift in focus highlights the significance of personal relevance and emotional connection in digital mental health interventions. Participant's motivation to engage was often reinforced when the programme resonated with their lived experiences, values, and self-identity. Alternatively, moments of disengagement were frequently linked to perceptions of emotional distance, broad content, or difficulty seeing oneself reflected in the material. These observations suggest that engagement and perceived usefulness are closely interlaced with the degree to which participants felt understood, validated, and emotionally aided by the intervention.

Personal Relevance and Connection

Theme three builds on the discussion of engagement by examining the qualitative nature of participants experience with cCBT content. It talks about how YA made sense of the therapeutic content, the extent to which they felt personally addressed by the programme, and how this sense of connection influenced their coping and self-efficacy in relation to anxiety. In doing so, Theme three moves past behavioural engagement to consider the deeper psychological processes that liaise therapeutic impact in self-guided digital interventions.

By shifting from how participants stayed engaged to how the intervention felt meaningful or distant, the next theme provides a critical link between use and outcome. This progression reflects a broader understanding of cCBT effectiveness, one that recognises that digital interventions must not only be attainable and engaging, but also emotionally resonant and idiosyncratically relevant to support lasting change.

This deepens the understanding of how YA in Aotearoa New Zealand perceive the impact of cCBT by shifting the analytical focus from behavioural engagement to experiential intentionality.

While earlier themes showcased that accessibility and motivation shaped whether YA use cCBT, the present theme reveals that how participants emotionally relate to the program deeply influences its perceived usefulness. This discussion interprets these findings in relation to the study's research aims on how YA perceive the impact of cCBT on anxiety; what aspects are experienced as helpful or unhelpful; how they describe engaging with a self-guided programme; and how cCBT influences coping, agency, and self-efficacy.

Collectively, Theme three demonstrates that cCBT is evaluated not only in terms of symptom change or convenience, but through the lens of interpersonal resonance, contextual fit, and perceived personal relevance. The reflections illuminate a central tension in digital mental health: the trade-off between scalability and personalization.

Personalization and the Experience of Generic Design

One of the most important interpretive insights from this theme is that perceived "generic" design did not necessarily invalidate usefulness, but it required additional mental load. Participants described actively incorporating generalized CBT content into personally meaningful insights. In doing so, they engaged in a process of interpretive adaptation. This finding complicates simplistic assumptions that lack of personalisation automatically reduces effectiveness (Nye et al., 2023).

Existing literature consistently identifies personalisation as a key determinant of engagement and outcomes in digital interventions (Kelders et al., 2012; Yardley et al., 2016). Automated feedback and tailored content are often associated with higher adherence and perceived authenticity. However, this study extends that literature by demonstrating that YA can compensate for limited tailoring when they perceive underlying conceptual value. The programme's structure enabled insight, even when examples did not perfectly match lived experience.

This suggests that personalisation operates on multiple levels. Surface-level tailoring (e.g., age-specific characters, culturally layered examples) may enhance emotional connection, but deeper personalization may occur through self-reflection and meaning-making. From a CBT framework, this aligns with the idea that therapeutic change requires individuals to actively examine and reframe their own insight. The necessity to "fit" content to one's own situation may oddly strengthen cognitive engagement, though it may simultaneously reduce emotional immediacy.

An alternative interpretation of participant's comments about generic content is that these critiques reflect heightened expectations among digitally aware YA. Emerging adults are used to algorithmically personalised online environments (e.g., social media feeds, streaming platforms). When mental health programmes do not match this standard of adaptive responsiveness, they may appear outdated. Thus, perceptions of impersonality may reflect broader technological norms rather than purely therapeutic shortcomings.

Nevertheless, cultural nuance emerged as a particularly important dimension. Participants from minority backgrounds noted the absence of culturally resonant narratives. This aligns with critiques that many digital CBT programmes are developed within Western, individualistic frameworks that may not adequately reflect collectivist values or culturally specific stressors (Chu et al., 2016). In the Aotearoa context where multicultural obligations and increasing multicultural diversity shape health provision, this finding relays the need for culturally responsive digital mental health tools.

The Centrality of Human Connection

A dominant interpretive thread in theme three is the enduring importance of human connection. Participants consistently positioned face-to-face therapy as the "golden standard," not because cCBT lacked utility, but because it lacked interpersonal connection. This difference is critical. Participants were not dismissing CBT principles; they were articulating the therapeutic value of empathy, validation, and co-regulation.

This aligns highly with decades of psychotherapy research underlining the therapeutic alliance as a powerful indicators of outcomes across modalities (Horvath et al., 2011). Even in CBT, where structured techniques are central, relational factors contribute significantly to treatment effectiveness. Digital interventions, by design, weakens this relational dimension. The present findings confirm that this weakness is subjectively felt.

However, participants did not conceptualize cCBT as contending with therapy. Instead, they framed it as supporting. This supports stepped-care models in which low-intensity digital interventions serve as entry points rather than replacements (Bower & Gilbody, 2005). The data indicates that YA intuitively understand this position.

The partial fulfilment of relational needs through researcher check-ins reinforces existing literature, indicating that minimal human support enhances digital intervention outcomes (Baumeister et al., 2014). Interestingly, even brief contact appeared to reduce feelings of isolation. This finding highlights the psychological significance of being "held in mind." It suggests that interpersonal presence, even when limited, may transform the experiential quality of digital therapy.

An alternative interpretation could be that participants preference for human connection reflects a social desirability bias toward traditional therapy models. However, given that participants simultaneously praised the autonomy and privacy of cCBT, their evaluations appear balanced rather than idealized. Their comparisons were pragmatic, not nostalgic.

Importantly, this theme intersects directly with the research question regarding how cCBT influences coping, agency, and self-efficacy. Participants demonstrated agency in selecting when and how to use the programme. Yet their reflections suggest that agency does not eliminate the human need for relational validation. Digital autonomy and relational connection are not mutually unique; rather, they coexist in tension.

Contextual Fit and the Stepped-Care Perspective

Participant's evaluation of contextual fit provides significant understanding of how YA perceive the impact of cCBT on anxiety. Many accurately assessed that the intervention was appropriate for moderate levels of distress but insufficient for severe or complex difficulties. This demonstrates meta-cognitive awareness and supports the idea that YA can distinguish treatment intensity needs.

This finding is particularly important in addressing the research question regarding perceived helpfulness. Computerized CBT was viewed as helpful when matched to emotional readiness and symptom severity. When aligned with life situations such as academic stress it was experienced as timely and empowering. When emotional states fluctuated beyond the scope of structured modules, limitations became more apparent.

This reflects stepped-care theory, which promotes matching intervention intensity to symptom severity (Bower & Gilbody, 2005). Participants intuitive positioning of cCBT as a first step,

supplement, or maintenance tool suggests that digital programmes may function best within integrated care pathways rather than as standalone solutions.

Relatability and predictability also emerged as psychologically meaningful. Participants reported that when examples, scenarios, and language reflected experiences similar to their own, the content felt more relevant and easier to engage with. The program's stability was described as reassuring. This aligns with CBT principles emphasizing structured routines and predictable frameworks as anxiety-reducing mechanisms (Smits et al., 2006). However, when content felt generic, culturally distant with participants lived realities, engagement was reduced. In these instances, participants described difficulty applying strategies to their personal contexts, suggesting that relatability played an important role in shaping both engagement and perceived effectiveness of the programme.

Implications for help-seeking and Early Intervention

Theme three also addresses the research question concerning barriers and facilitators to engagement. The data suggest that cCBT lowers psychological barriers to help-seeking by offering a low-pressure, private environment for initial exploration. For participants hesitant to pursue therapy, the programme functioned as a bridge.

This is particularly significant evidence given that emerging adults often delay formal mental health support due to stigma, cost, or uncertainty (Gulliver et al., 2010). By providing psychoeducation and CBT vocabulary, cCBT may enhance mental health literacy and reduce stigma-related avoidance. The finding that some participants felt more ready to seek therapy after using the programme highlights a potentially underrated function of digital interventions, that is preparatory socialization into therapy.

This preparatory role represents a new contribution of the study. While prior research has examined symptom reduction, fewer studies have explored how cCBT influences readiness for traditional therapy. The present findings suggest that digital interventions may foster reflective capacity and self-efficacy, thereby facilitating future engagement with higher-intensity care.

While the findings support the importance of relational connection, it is possible that participants emphasis on human warmth reflects broader societal narratives that acclaim traditional therapy. Digital therapy remains relatively new; preferences may shift as technology evolves.

Additionally, the version of cCBT used may not represent current advances in adaptive AI-operated personalization.

Another alternative explanation is that participants moderate anxiety levels influenced their evaluations. Individuals with severe anxiety might perceive greater limitations, whereas those with milder distress might require less relational depth.

Theme three exhibits that YA do not interpret cCBT in black and white terms. Instead, it plotted it within a broader mental health ecosystem valuing its accessibility, structure, and psychoeducational benefits while recognizing its relational limitations. Personal relevance and emotional resonance significantly shape perceived impact. When framed as a supplementary, introductory, or maintenance tool within stepped-care models, cCBT emerges as a meaningful and contextually valuable intervention for moderate anxiety among emerging adults.

Learning and Application of CBT Principles

Theme four addresses a key question highlighting the effectiveness of cCBT beyond accessibility and engagement, meaningful therapeutic learning occur? The findings suggest that YA are not only engaged with CBT concepts but internalized and applied them in ways that influenced their sense of coping, agency, and emotional regulation. This theme points towards the study's research aims particularly how YA perceive the impact of cCBT on their anxiety, what aspects they find helpful, and how the programme influences their sense of self-efficacy.

Rather than functioning as passive recipients of psychoeducation, participants described active cognitive and behavioural shifts. These shifts, although sometimes subtle, indicate that even in the absence of a mental health professionals involvement, structured CBT frameworks can accelerate awareness and behavioural experimentation. This discussion explains these findings within broader CBT theory, digital mental health literature, and developmental considerations relevant to emerging adulthood.

Cognitive Insight as a Mechanism of Change

One of the most significant contributions of Theme four is the evidence that participants developed improved cognitive insight and self-awareness. From a CBT perspective, this creates a foundation as cognitive restructuring begins with identifying automatic thoughts and maladaptive

schemas. Participant's descriptions of "catching" thoughts earlier or recognizing cognitive distortions suggest that core CBT mechanisms were activated.

Importantly, many participants reported that they had experienced anxiety for years without previously interpreting it within a cognitive framework. The introduction of terms such as "warped thoughts" or "negative automatic thoughts" provided language that organized previously scattered experiences. This aligns with cognitive theory's emphasis on psychoeducation as a mechanism that increases meta-cognitive awareness (Beck, 2011). When individuals can label and observe thoughts, they create psychological gaps from them, facilitating cognitive resilience.

The findings are consistent with research indicating that cCBT can produce significant improvements in cognitive reassessment and thought monitoring (Andrews et al., 2018). However, this study adds qualitative depth to those outcomes by demonstrating how YA subjectively experience this shift. Rather than reporting abstract "symptom reduction," participants described moments of recognition and confrontation. The process of recognizing misinterpretations was sometimes uncomfortable, yet meaningful. This suggests that digital CBT can elicit reflective engagement comparable, in some respects, to therapist-guided interventions.

An important nuance emerges here: the structured and self-paced nature of cCBT may uniquely support cognitive processing. In face-to-face therapy, insights often emerge within dialogue. In contrast, cCBT requires individuals to independently pause, read, and reflect. Several participants indicated that this solitude heightened self-analysis. This challenges the assumption that therapist presence is crucial for cognitive restructuring. While relational support enhances emotional safety, the absence of immediate dialogue may allow for slower, internal mediated meaning-making.

However, alternative perspectives must be considered. It is possible that participants who reported strong insight were already predisposed toward reflective thinking. Those with higher basic knowledge or psychological literacy may derive more cognitive benefit from self-guided programmes.

Behavioural Experimentation and Applied Skill Development

CBT is not solely cognitive; behavioural activation and exposure-based techniques are central to disorganizing anxiety cycles. Theme four shows that participants translated cognitive awareness into tangible behavioural shifts. While many of these changes were small, such as trying breathing exercises or scheduling walks, their psychological significance should not be underestimated.

Behavioural activation research underlines that gradual changes in activity can produce cumulative mood improvements (Dimidjian et al., 2011). Participants account of re-engaging with valued activities suggest that cCBT encouraging behavioural momentum. Notably, these actions were self-initiated rather than therapist-directed, indicating internalization rather than adherence.

These findings address one of the study's research questions of what aspects of cCBT do participants find helpful? The practical exercises breathing techniques, grounding strategies, organized task breakdown were regularly cited as instantly useful. In contrast to concerns raised in Theme three about common content, behavioural tools were seen as concrete and adaptable. This suggests that while reported examples may require personal interpretation, skills-based exercises may go beyond contextual differences more readily.

The organized structure of MoodGYM appears to have supported skill acquisition. Participants described moving from understanding thought-feeling links to experimenting with actions. This progression mirrors CBT's structured session format and supports the idea that well-designed digital interventions can mimic therapeutic sequencing.

However, behavioural engagement varied across participants. Some engaged deeply with exercises, while others reported more restricted utilization. This variability aligns with adherence literature indicating that self-guided digital interventions depend heavily on intrinsic motivation (Kelders et al., 2012).

Another interpretive consideration is the developmental stage of participants. Emerging adulthood (18–26 years) is characterised by identity exploration and increased autonomy (Arnett, 2000). A self-directed programme that focuses on experimentation and self-initiated action may resonate strongly with this developmental need for independence. Thus, the behavioural

empowerment observed may reflect a collaboration between programme structure and developmental context.

Empowerment, Agency, and Self-Efficacy

Participants described shifts from feeling overwhelmed to feeling capable of intervening in their anxiety. This directly underlines the research aim exploring how cCBT influences coping, agency, and self-efficacy.

Bandura's (1997) theory of self-efficacy indicates that mastery experiences are the most powerful source of effective beliefs. When participants successfully applied a breathing technique before their anxiety spiralled with grounding, they experienced mastery. These moments likely reinforced beliefs in their ability to manage distress.

The self-guided nature of cCBT may enhance this effect. In therapist-led settings, improvement may be partially attributed to the therapist's expertise. In contrast, improvements achieved independently may strengthen internal locus of control (Zaidi, 2013). Several participants articulated this explicitly, noting that they realized they could "actually do something" about their anxiety. This shift from helplessness to agency renders a meaningful psychological outcome beyond symptom reduction.

Importantly, empowerment did not invalidate the desire for interpersonal support. Instead, it suggests that digital independence and relational need to coexist. Participants valued learning skills independently while still acknowledging the added depth of human therapy. This detailed disposition reflects mental maturity and aligns with stepped-care frameworks where self-help and guided therapy operate complementarily.

An alternative interpretation could be that empowerment was partly influenced by participation in the research process itself. Being interviewed and reflecting on experiences may have elevated participant's sense of growth. Reflexive thematic analysis acknowledges the co-constructed nature of meaning (Braun & Clarke, 2019). Thus, the articulation of empowerment may reflect both programme impact and narrative reconstruction during interviews. Future studies using longitudinal designs could examine whether reported agency remain over time.

The findings align with meta-analytic evidence that cCBT is effective for mild-to-moderate anxiety (Andrews et al., 2018; Richards & Richardson, 2012). However, most quantitative studies measure symptom depletion without capturing experiential learning processes. This study contributes by illustrating how change is perceived through insight, skill acquisition, and agency.

Furthermore, prior research often debates whether digital interventions can replicate traditional therapy outcomes. The present findings suggest that replication may not be the most relevant contrast. Instead, cCBT may facilitate specific forms of learning that differ qualitatively from face-to-face therapy. The solitary, reflective format may foster self-observation in distinctive ways.

This also intersects with digital literacy research. YA, as frequent users of online learning platforms, may be particularly receptive to structured, modular content. The educational framing of CBT concepts within MoodGYM may resonate with academic learning styles common in university populations.

Theoretically, theme four reinforces core CBT assumptions: awareness precedes change, behavioural experimentation reinforces cognitive shifts, and proficiency builds efficacy. Clinically, it supports the integration of cCBT within stepped-care systems, particularly for YA experiencing moderate anxiety.

The findings suggest that clinicians might frame cCBT not merely as a low-intensity alternative, but as a skill-building platform that strengthens client preparedness. For individuals hesitant about therapy, cCBT may function as a preparatory intervention, enhancing emotional literacy and reducing anxiety.

Additionally, the empowerment described indicates possible preventive value. Early attainment of CBT skills may buffer against escalation of anxiety symptoms. This aligns with preventive mental health models supporting resilience-building in emerging adulthood.

Several limitations need to be evaluated. The sample consisted of YA willing to engage in a research-based digital programme; thus, findings may not generalize to individuals with severe anxiety or low motivation. Additionally, self-reported behavioural change does not automatically equate to sustained long-term change.

It is also possible that novelty effects guided perceived learning. Participants encountering CBT concepts for the first time may report strong awareness simply due to exposure to new language. Longitudinal follow-up would clarify whether these insights translate into enduring cognitive restructuring.

Investigating integration of interactive elements such as adaptive exercises or AI-guided cognitive restructuring may further skill consolidation while preserving autonomy.

Theme four indicates that cCBT can enable meaningful therapeutic learning among YA. Participants grew cognitive insight, applied behavioural strategies, and experienced increased self-efficacy. These outcomes extend beyond symptom management, reflecting shifts in how people understand and react to their anxiety.

While digital interventions may lack relational depth, they possess strengths in structured skill channelling and independent reflection. When positioned within a broader continuum of care, cCBT emerges not only as an accessible option, but as a psychologically empowering tool that provides YA with foundational CBT skills.

Perceived Impact of cCBT on Anxiety and Well Being

Theme five deepens understanding of the study's central research question by demonstrating how YA interpreted the psychological impact of engaging with cCBT. Importantly, participants did not frame cCBT into terms of "worked" or "did not work." Instead, their accounts reflected layered assessment of partial benefit, situational usefulness, and selective impact. This intricacy indicates important insight into how YA in real-world contexts make meaning of digital mental health tools and speaks directly to the research question regarding how cCBT influences anxiety experiences and psychological functioning in this population.

Participants scores derived from the GAD-7 were reported descriptively to contextualize baseline anxiety levels and confirm the appropriateness of the sample, rather than to evaluate intervention effectiveness. This approach aligns with the qualitative design of the study, where quantitative scores were used to support interpretive understanding of participant experiences rather than to determine causal outcomes.

Participants dialogue further reinforced this positioning, as several individuals reflected that the cCBT programme appeared most suitable for those experiencing moderate levels of anxiety. Participants suggested that individuals with low anxiety levels may not be motivated to engage with the programme, while those experiencing more severe anxiety symptoms may require professional support, clinical monitoring, or more intensive therapeutic intervention. These reflections provide additional contextual support for the sample characteristics, suggesting that participants baseline anxiety levels were consistent with the perceived target population for self-guided cCBT interventions.

A key interpretive pattern across the data was the distinction participants made between immediate cognitive or emotional relief and the sustainability of these effects over time which was also reflected in the post intervention assessment of the GAD-7. Many described experiencing short-term reductions in distress, improved mental clarity, or a sense of emotional organisation following module completion. These reports align with cognitive-behavioural theory, which posits that psychoeducation and cognitive restructuring can produce relatively rapid shifts in perceived controllability and emotional understanding (Larsson et al., 2015). Prior quantitative trials of digital CBT have similarly documented early symptom improvements, particularly in mild-to-moderate anxiety presentations. The present qualitative findings extend this literature by showing how YA subjectively experience these early gains often as moments of "mental sorting," "stepping back," or "getting perspective."

However, participants concurrently demonstrated refined awareness that these benefits were sometimes weak. Several noted that developments required active effort to maintain and could decrease when program use diminished. This observation is theoretically consistent with behavioural learning principles, which emphasise practice and contextual reinforcement for consolidation (Daunton et al., 2016). It also resonates with emerging digital mental health research conducted by Leung et al., (2022) suggesting that unguided interventions may produce significant but less durable effects compared with supported frameworks. Importantly, participants did not interpret declining benefits as programme failure; rather, they framed them as part of the reality of self-directed change. This informative stance itself may represent an important psychological shift toward greater self-observant and metacognitive awareness,

suggesting that engagement with cCBT may foster awareness even when symptom change is moderate.

The difference in sustained outcomes also highlights the interaction between intervention design and the developmental context of emerging adulthood. Participants were navigating demanding academic schedules, employment pressures, and shifting life transitions, all of which shaped their capacity to continue practicing CBT skills. This finding extends previous research conducted by Christ et al., (2020) about compliance in digital interventions by considering the nature of young adult life rather than viewing engagement solely as an individual motivation problem. From a developmental psychopathology perspective, the uneven strengths of benefits observed here may reflect normative shifts in executive functioning, emotional regulation capacity, and competing role requires characteristic of this life stage. The present study therefore contributes to a more circumstantially sensitive understanding of why maintenance of digital CBT gains can be challenging for YA.

Another important interpretive insight emerging from Theme five is the presence of what may be conceptualized as a digital ceiling effect (Yeo, 2024). This finding aligns with broader psychotherapy process research emphasizing the importance of relational factors such as empathy, atonement, and collaborative meaning-making (Sethi, 2013). It also converges with meta-analytic evidence showing stronger outcomes for guided versus unguided digital CBT. Crucially, participants did not reject cCBT on this basis. Instead, they positioned it realistically within a supplementary framework, as highly useful for early insight and skill exposure but less sufficient for complex emotional work. This specific positioning represents a strength of the current study, as it moves beyond simplistic efficacy narratives toward a more naturally valid understanding of how digital tools are used and valued.

Preventative Potential

Theme five also provides compelling evidence for the preventive and preparatory potential of cCBT among YA. Many participants described increased ability to recognize early signs of anxiety escalation and to intervene sooner using CBT strategies. This suggests that the programme enhanced emotional literacy and interoceptive awareness, key mechanisms in cognitive-behavioural models of anxiety prevention (Brightmore., 2016). Prior research has often focused on symptom reduction outcomes, but the present findings highlight the importance of

early detection capacity as a meaningful benefit. For YA, who frequently delay formal help-seeking, this preventive function may have significant public mental health implications. Computerized CBT may operate not only as a supplementary treatment but also as a form of psychological booster, strengthening self-regulatory skills before difficulties reach clinical intervention.

Closely related to this preventive function was participants description of cCBT as a pathway to further help-seeking. Several reported that engaging with MoodGYM reduced uncertainty about therapy, increased psychological vocabulary, or made professional support feel less intimidating. This finding is particularly noteworthy because it extends the impact of cCBT beyond immediate symptom outcomes into the broader help-seeking pathway. Within youth mental health literature, barriers such as stigma, low mental health literacy, and uncertainty about therapy are well documented obstacles to care. The present findings suggest that cCBT may help lower these barriers by providing a low-pressure entry point into psychological concepts. Conceptually, this positions cCBT as both an intervention and an engagement tool within mental health services. Future service models may benefit from directly capitalizing on this gateway function rather than evaluating digital programmes solely on symptom change metrics.

Emotional Normalization

One of the most psychologically meaningful findings within Theme five was the process of emotional normalization reported by many participants. Learning that their anxiety responses were understandable and shared by others appeared to reduce self-blame and emotional isolation. This aligns strongly with CBT's psychoeducational aims but is particularly significant given the absence of live therapeutic validation in a self-guided format. The fact that participants nevertheless experienced meaningful normalisation suggests that well-structured psychoeducation can evoke powerful destigmatizing effects even without human support (Musiat & Tarrier, 2014).

Importantly, emotional normalisation in this study often appeared to open the door to emerging self-compassion. Participants described becoming less self-critical and more accepting of their emotional experiences. Although self-compassion was not an explicit target of the intervention, this emergent process agrees with third-wave CBT perspectives emphasising decentring and acceptance (Hayes, 2017). The finding introduces a potentially important new research direction

of cCBT programmes may indirectly influence identity-level processes such as self-concept and emotional self-relationship. Future studies could usefully examine whether increases in self-compassion mediate longer-term outcomes in digital interventions for YA.

At the same time, participant's reflections also revealed important boundary conditions. For some, particularly those with prior therapy experience or more complex emotional histories, the programme's normalizing messages sometimes felt overly generic. This critique highlights the central design tension in scalable digital interventions: standardisation enhances accessibility but may dilute emotional specificity (Park et al., 2022). Rather than viewing this solely as a limitation, the present findings suggest it is better conceptualised as a calibration issue. Different user groups may require different levels of personalisation, emotional depth, and relational scaffolding. The study therefore contributes to ongoing debates in digital mental health about optimal matching between intervention intensity and user need.

Several alternative interpretations of the findings must be considered to maintain analytic accuracy. First, some of the reported immediate benefits may reflect expectancy effects associated with engaging in any structured wellbeing activity. Second, the attenuation of gains over time may partly reflect natural fluctuations in anxiety rather than insufficient intervention potency. Third, the sample may reflect a degree of self-selection bias, as individuals who completed the programme and interviews may have been more motivated or psychologically minded than the broader young adult population. Acknowledging these possibilities strengthens confidence in the interpretive claims while highlighting areas for future empirical testing.

Theme five makes several important contributions to literature. It highlights YA own meaning-making processes regarding digital mental health impact, highlights the temporal layering of change (immediate versus sustained), and provides qualitative support for positioning cCBT within blended and stepped-care models. It also surfaces the psychologically significant role of emotional normalisation and the underexplored gateway function of digital CBT in facilitating future help-seeking. Within the Aotearoa New Zealand context, where youth mental health access remains uneven, these insights carry service design relevance.

This demonstrates that YA experience the impact of cCBT as meaningful but conditional. The programme appears particularly effective in generating short-term cognitive clarity, enhancing emotional literacy, and strengthening early self-management capacity. It also shows promise as a

preventive and gateway tool within youth mental health pathways. However, the sustainability and depth of change are shaped by engagement patterns, developmental pressures, and the relational limits of fully self-guided digital support. These findings reinforce the value of accessible digital CBT while reflecting on the continued importance of personalisation, reinforcement, and human connection in supporting enduring psychological change among YA.

Future Research Directions

The findings of this study highlight several important directions for future research aimed at strengthening the effectiveness, accessibility, and cultural responsiveness of cCBT for YA. Across themes, participants experiences indicated that engagement with digital mental health interventions is shaped by a complex interplay of accessibility, motivation, personal relevance, and perceived therapeutic depth. Future research should therefore move beyond evaluating effectiveness alone and instead examine the contextual and experiential factors that influence how YA interact with cCBT.

First, future studies should explore how accessibility interacts with individual and contextual factors such as symptom severity, cultural identity, personality traits, and prior therapy experience. Understanding these interactions may help identify which groups benefit most from self-guided digital interventions and which may require additional support. Comparative research across rural, Māori, and Pacific populations would be particularly valuable in the Aotearoa New Zealand context, given existing inequities in access to mental health services. Additionally, research focusing on individuals who disengage or withdraw from cCBT could provide insight into barriers to sustained engagement and inform strategies to improve accessibility and retention. Additionally, exploring blended models that combine accessibility with human support may help balance autonomy with relational needs, particularly for individuals with more complex presentations.

Second, findings related to engagement and motivation suggest a need for research examining optimal forms of accountability and support. Experimental comparisons between fully self-guided, lightly guided, and blended cCBT formats could help determine appropriate levels of human scaffolding for YA. Longitudinal research is also needed to explore how engagement patterns change over time, including fluctuations in motivation and sustained use beyond short-term interventions. Studies investigating adaptive reminders, behavioural prompts, and

adjustable engagement supports may further enhance consistency and real-world implementation. Mixed-methods research could integrate qualitative insights with usage data to develop more holistic models of engagement that reflect both behavioural and experiential aspects.

Third, participant's emphasis on personal relevance highlights the importance of culturally responsive and personalized interventions. Future research should prioritize co-designed cCBT platforms that incorporate culturally grounded metaphors, diverse lived experiences, and relational worldviews. In the New Zealand context, examining how cCBT aligns with Māori and Pasifika perspectives of wellbeing and relationality may enhance cultural safety and engagement. Technological advancements also offer opportunities to explore adaptive personalization, such as mood-tracking algorithms or modular systems that allow users to select content based on emotional state rather than fixed sequencing. Future research could examine personality traits such as openness or baseline meta-cognition moderate learning outcomes in cCBT. Additionally, research examining how developmental stage interacts with digital learning styles may clarify why emerging adults respond positively to structured CBT modules.

Finally, several broader research directions emerge regarding the role of cCBT within stepped-care mental health systems. Longitudinal studies are needed to examine whether early engagement with cCBT influences future help-seeking behaviour, resilience, and uptake of formal therapy. Comparative research across different levels of anxiety severity may also clarify for whom cCBT is most appropriate. Additionally, implementation research examining hybrid delivery models, mobile app formats, AI-adaptive systems, and light-touch clinician or peer support may help optimise the balance between scalability and relational depth identified as important by participants.

Together, these future research directions highlight the importance of advancing culturally responsive, adaptive, and integrated digital mental health interventions. By examining how accessibility, engagement, and personal meaning intersect, future studies can support the development of cCBT programmes that are not only effective but also responsive to the diverse needs of YA in Aotearoa New Zealand.

The study demonstrates that YA hold a mature and contextually grounded understanding of cCBT's role in anxiety support. They value its flexibility, affordability, privacy, and clarity,

recognizing these features as powerful enablers of early engagement and skill acquisition. Simultaneously, they remain acutely aware of their structural limits, particularly the absence of responsive human feedback, tailored depth, and relational warmth. Rather than viewing these tensions as contradictions, participants integrated them into a coherent evaluation that positions cCBT as a meaningful but bound tool within the broader mental health landscape. These insights reinforce the importance of designing digital interventions that preserve accessibility while strategically incorporating personalization and human connection to maximize psychological impact for emerging adults.

Strengths of the Present Study

This study offers several key strengths that contribute meaningfully to the growing body of literature on cCBT and young adult mental health. First, a major strength of this research lies in its focus on lived experience and subjective meaning-making. While much of the existing literature on digital mental health interventions prioritizes symptom reduction and adherence metrics, this study moves beyond these outcomes to explore how YA interpret, engage with, and make sense of their experiences using cCBT. By highlighting personal relevance and emotional resonance as mediators of engagement and perceived benefit, the study advances understanding of how digital interventions function in real-world contexts.

A second strength of this study is its contribution to culturally contextualised research within Aotearoa New Zealand. Digital mental health interventions are often developed and evaluated in international contexts, with limited exploration of how these tools are experienced within culturally diverse populations. By examining young adult's experiences within Aotearoa New Zealand, this study provides valuable insights into the importance of cultural resonance, accessibility, and inclusivity. Participant's reflections emphasised the significance of representation, relatability, and contextual fit, contributing to broader conversations around culturally responsive digital mental health design and implementation.

Another important strength is the use of reflexive thematic analysis, which allowed for the capture of complexity, nuance, and ambivalence in participant experiences. Rather than presenting cCBT as universally helpful or ineffective, participants described layered and conditional evaluations of MoodGYM. This methodological approach enabled the identification of both benefits and limitations, such as the tension between accessibility and lack of human

connection, or autonomy and reduced accountability. Capturing these nuanced perspectives strengthens the credibility and depth of findings and contributes to a more sophisticated understanding of digital mental health engagement.

Additionally, the qualitative dominant mixed-methods design enhanced the study's overall rigor. The inclusion of both quantitative measures, such as pre- and post-intervention GAD-7 scores, alongside in-depth qualitative interviews allowed for a more comprehensive understanding of participant outcomes. This approach revealed that meaningful improvements often extended beyond measurable symptom change, including increased self-awareness, coping skills, and emotional insight. The integration of multiple data sources therefore strengthened the credibility and richness of the findings.

Finally, this study offers strong ecological validity through its real-world implementation. Participants engaged with MoodGYM independently, in their own environments, without structured clinical supervision. This naturalistic approach reflects how YA are likely to use digital mental health tools outside of research settings. As a result, the findings provide practical and applicable insights for clinicians, service providers, and policymakers seeking to implement cCBT within accessible and scalable mental health support systems.

Together, these strengths position the present study as a meaningful contribution to the literature, offering culturally contextualised, experience-focused, and methodologically rigorous insights into how YA in Aotearoa New Zealand engage with and experience computerized Cognitive Behavioural Therapy.

Limitations of the Present Study

A critical evaluation of this thesis requires unbiased reflection on the methodological, procedural, and conceptual limitations that may have shaped the findings. While the study achieved its aim of generating in-depth qualitative insight into YA experiences of cCBT, several challenges emerged during design, recruitment, data collection, and analysis. Acknowledging these limitations is essential for situating the conclusions appropriately and identifying priorities for future research.

Several methodological limitations should be considered when interpreting the findings of this study. First, participants were recruited through community-based and online self-selection

methods, which may have resulted in a sample characterised by higher motivation, digital literacy, or openness to psychological self-help interventions. Although the final sample size (n = 13) is consistent with reflexive thematic analysis and allowed for rich experiential depth, recruitment proved more challenging than anticipated. In addition, although the GAD-7 scale was used as a screening tool to identify participants with moderate anxiety symptoms, the absence of formal clinical diagnostic assessment limits the extent to which the sample can be considered representative of a clinical population.

Future research would benefit from more strategic sampling methods, such as recruitment through primary care, university counselling services, or community mental health providers, where a broader clinical spectrum could be accessed. Oversampling individuals who discontinue or avoid digital interventions would also provide critical counter-narratives that are currently underrepresented.

The sample diversity was more limited than originally intended. While the study included participants from varied backgrounds, the small cohort constrained the ability to conduct meaningful subgroup analysis (e.g., by ethnicity, gender, prior therapy exposure, or anxiety severity). Given the New Zealand context and the importance of culturally responsive mental health care, this represents a significant interpretive boundary. Although the study remained attentive to cultural considerations during analysis, it cannot claim culturally specific conclusions.

Second, participants were provided with reflective prompts prior to engaging in the intervention. While this strategy was intended to support recall and depth of interview responses, it may have influenced participants attention to specific aspects of their experience and thereby shaped the nature of the data generated. Similarly, the researcher’s ongoing contact with participants during check-ins may have functioned as a minimal supportive element, potentially influencing engagement levels and perceptions of the intervention.

Third, the relatively short intervention period and reliance on self-reported adherence measures limit conclusions regarding sustained engagement and longer-term impacts of computerized cognitive behavioural therapy. The inclusion of a quantitative symptom measure provided useful contextual information; however, the study was not designed to evaluate treatment effectiveness, and any observed changes in anxiety should therefore be interpreted cautiously. Finally,

consistent with reflexive thematic analysis, the findings represent interpretative constructions shaped through the researcher's analytic engagement with the data. Although strategies such as reflexive journaling and supervisory assistance were used to enhance rigour, alternative interpretations remain possible.

Another important limitation concerns the research context influencing engagement. Participants completed MoodGYM within the structure of a research study that included periodic researcher contact. While this approach was ethically and practically necessary to support retention and participant safety, it may have inadvertently enhanced adherence and motivation relative to fully unguided real-world use. Several participants indicated that reminders and check-ins helped them persist.

This issue was acknowledged during interpretation; however, it remains a methodological constraint. Future studies should consider three-arm comparisons (unguided vs. minimally guided vs. blended care) or include passive usage analytics in naturalistic deployments to better approximate real-world behaviour. Embedding digital trials within routine care pathways rather than stand-alone research participation may also improve ecological validity.

The study is further limited by reliance on self-reported qualitative accounts of perceived impact. While reflexive thematic analysis is well suited to exploring meaning-making, it cannot independently verify symptom change or behavioural outcomes. Participants may have been influenced by recall bias or effort justification particularly given their awareness of the study's therapeutic focus. Although the interview style emphasised neutrality and invited critique, it is possible that some participants limited negative feedback.

Future research would be strengthened by methodological triangulation, including validated anxiety measures, behavioural engagement metrics, and possibly ecological momentary assessment (EMA) to capture in-the-moment change rather than retrospective reflection (Shiffman et al., 2008; Stone et al., 2023).

A further methodological challenge involved variation in participant engagement levels with the programme. Not all participants engaged with equal depth. While this variability reflects real-world use and was analytically valuable, it also complicates interpretation of perceived impact.

Some participants commented on features they had only briefly encountered, which may limit the completeness of their evaluation.

This issue was managed by transparently contextualizing participant exposure during analysis; however, future studies could improve methodological precision by tracking and stratifying findings based on completion level, or by setting clearer minimum engagement thresholds for inclusion in outcome-focused analyses.

The timeframe of follow-up represented another limitation. Interviews captured relatively proximal reflections following programme engagement, which restricts conclusions about long-term maintenance of benefits, delayed help-seeking effects, or sustained behavioural change. Participants themselves frequently questioned the durability of gains. A longer follow-up window (e.g., 3–6 months) would have provided stronger insight into whether cCBT functions primarily as a short-term cognitive scaffold or supports enduring change.

From an analytic standpoint, the use of RTA brings both strengths and constraints. RTA appropriately foregrounds researcher subjectivity as part of the analytic process; however, it also means that theme construction is interpretive rather than purely descriptive. Although reflexive analysis and iterative coding were employed to enhance thoroughness, is possible that alternative analysts may have emphasised different thematic boundaries.

Researcher positionality and role proximity also warrant candid reflection. The researcher's background in psychology and interest in digital mental health likely shaped both interview dynamics and interpretive lens. Additionally, because the researcher conducted participant check-ins, there is potential that some participants moderate criticism out of politeness or perceived relational expectations. Efforts were made to minimise this through explicit invitations for negative feedback and reassurance that critique was valuable; however, some social desirability influence cannot be ruled out.

There were also platform-specific limitations that affect interpretation. The study evaluated a single cCBT programme (MoodGYM), which, while historically well-validated, represents an earlier generation of digital CBT design. Several participant frustrations particularly regarding outdated visuals, limited adaptivity, and repetitive structure may reflect platform design constraints rather than inherent limitations of all cCBT. This is an important interpretive caution.

Finally, as with many exploratory qualitative studies, the findings prioritise depth over generalizability. This is appropriate to the methodology but limits the extent to which firm service-level recommendations can be made. The study is best understood as hypothesis-generating and theory-informing rather than definitive evidence of effectiveness.

CONCLUSION

This study aimed to explore young adults lived experiences of engaging with computerized Cognitive Behavioural Therapy (cCBT) via the MoodGYM program, and how participation influenced anxiety, coping, and self-efficacy. With increasing use of digital mental health interventions, particularly among young adults, this research aimed to understand not only whether cCBT is effective, but how individuals experience and engage with self-guided therapy in real-world contexts.

The study examined young adults in Aotearoa New Zealand, focusing on perceived impacts on anxiety, helpful and unhelpful programme features, barriers and facilitators to engagement, and changes in coping, agency, and self-efficacy. Reflexive thematic analysis identified that experiences of cCBT were shaped by accessibility and flexibility, motivation and engagement, personal relevance of content, and perceived psychological change.

Participants valued the convenience and autonomy of engaging with therapy at their own pace and in private settings. However, challenges included fluctuating motivation, inconsistent use, and the absence of therapist support. Engagement was enhanced when content felt personally meaningful and relatable, whereas culturally or contextually distant material reduced perceived relevance and benefit.

Despite variability in engagement, most participants reported increased emotional awareness, improved coping strategies, and a stronger sense of agency in managing anxiety. These perceived gains were not fully reflected in the post intervention scores of symptom change, suggesting that subjective outcomes such as insight, confidence, and resilience are important alongside symptom reduction. Participants also described broader improvements in wellbeing, including better self-reflection, relationships, and help-seeking behaviour.

Overall, findings suggest cCBT programmes like MoodGYM can offer accessible, low-cost early intervention options for young adults experiencing moderate anxiety, particularly where barriers to traditional therapy exist. However, engagement may be strengthened through periodical therapist support, culturally responsive content, and structured strategies to maintain motivation. Integrating cCBT within traditional mental health services may enhance accessibility while fostering independent coping skills. This study contributes to the literature by emphasising the

importance of user experience, meaning-making, and contextual factors in digital mental health implementation in Aotearoa New Zealand.

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APPENDICES

APPENDIX A

FLYER



APPENDIX B

PARTICIPANT INFORMATION SHEET

Project Title: **Exploring Young Adults Experiences with Computerized CBT: A Qualitative Study of Perceived Reduction in Anxiety.**

Researcher: Ruqayya Cementwala

Supervisor: Dr. Matthew Shepherd

Email: [redacted]@massey.ac.nz

Kia ora,

My name is **Ruqayya Cementwala**, and I am a Master of Arts in Psychology student at **Massey University**, supervised by **Dr. Matthew Shepherd**. This project is part of my thesis research.

What is this study about?

This study looks at how using an online program called MoodGym, which is based on Cognitive Behavioural Therapy (CBT), might help young adults manage feelings of anxiety. We are interested in hearing about people's personal experiences with the program—what they find helpful, what works well for them, and how it affects their wellbeing.

Invitation to participate

You are invited because you are aged between 18–26 years and may experience moderate anxiety. We are looking for 12-15 eligible participants. Your participation can help researchers understand how digital mental health tools: MoodGym can benefit emotional well-being.

Who can take part?

To participate, you must:

● Be aged 18–26 years,

● Experience moderate anxiety, and

● Be willing to complete online CBT modules and anxiety screening tool.

Do I have to take part?

No. Participation is completely voluntary. You can choose to withdraw at any time, **up to two weeks after your interview**, without providing a reason and without any consequences. If you withdraw during this time, all your data will be deleted.

Please note you will be unable to withdraw post two weeks following the interview.

What happens if I choose to take part?

Participation will involve the following:

1. **Initial assessments**: You'll complete a brief **anxiety screening** questionnaire called the Generalized Anxiety Disorder 7-item scale (GAD-7). Your score will determine your eligibility to participate.

2. Once you are eligible you will then be briefed on the intervention that you will be working on.

3. **MoodGym**: You'll be given access to the MoodGym program and asked to complete **5 modules** (self-paced).

4. **Final assessments**: After completion, you'll repeat the **anxiety questionnaire** to assess any changes.

5. **Check-in sessions**: You'll attend **two short Zoom check-ins** (15 minutes each) every two weeks. Note that the session will be recorded and will be part of the data collection of the study. These support your engagement and address any concerns, whether you have completed the modules, check if you have any concers, anything you would like the researcher to note regarding the intervention that these check ins are not part of therapy and are required to access participation progress.

6. **Interview**: A one-off Zoom or Teams interview (approx. 60 minutes) will be conducted to discuss your experience with MoodGym and any perceived changes in your moderate anxiety scores. Note that the interview session will be recorded and transcribed for research analysis.

Where and when will this happen?

All sessions (assessments, check-ins, and the interview) will be conducted **online** via Zoom or Microsoft Teams, scheduled based on your convenience and availability. The sessions will take conducted from **a private place comfortable to you** using a computer or mobile device.

What are the benefits of participating?

● **Free access** to MoodGym (worth NZD $45 annually). You will have access to the programmee for a year post signing up.

● Opportunity to reflect on your anxiety and memory and learn evidence-based coping skills.

● Entry into a **lucky draw to win a $80 voucher** as appreciation for your time.

About MoodGym

● Mood Gym is owned and operated by **eHub Health Pty Ltd**, an Australian digital mental health provider (and spin-off from the Australian National University). All data entered into the MoodGym platform is owned and retained by eHub Health in perpetuity, subject to their **Terms of Use and Privacy Policy**, which outline how information is stored, used, and protected. MoodGym collects usage data (e.g., module completion, quiz responses, time spent on activities), which the organisation may use in an anonymised or aggregated format to monitor user engagement and improve service delivery.

Participants please be informed that the researcher **does not have access** to identifiable MoodGym data. Instead, participants may self-report their experiences during interviews. Participants are advised to read MoodGym's Terms and Conditions and Privacy Policy carefully before registering. They will also be explicitly informed that they may choose to register using either their own name or a pseudonym to protect their privacy.
MoodGym's policy seeks indemnity from responsibility should data breaches (e.g., hacking) occur. This will be explained to participants so they can make an informed decision about participation.

Are there any risks or disadvantages?

There are no known major risks. However, if any emotional discomfort arises, you can pause or withdraw from the study.

Information for support services is provided below.

https://www.gumbootfriday.org.nz/

AnxietyNZ: Helpline: 0800 269 438 (0800 ANXIETY)

Can I use a different name for MoodGym?

Yes. You may register on MoodGym using a **pseudonym** or alias. Please note researchers do not have access to Moodgym data.

How long will the study take?

Participation will require approximately **3–4 hours** over a period of 5 weeks, including:

● Completing MoodGym modules,

● Two short check-ins,

● Pre/post anxiety questionnaire,

● One interview.

How will my information be kept safe?

● Interview data will be **recorded** (with consent) to ensure accuracy and then transcribed and deidentified.

● All personal data will be **deidentified or pseudonymized**. However, due to the nature of qualitative data, complete deidentification cannot always eliminate reidentification risk. All efforts will be made to remove identifiable details.

● Data will be stored securely on Massey OneDrive and only accessed by the researcher and supervisor.

● Check-in sessions will be recorded for study purposes.

What will happen to the MoodGym data?

The data will be collected by the MoodGym database; however, the study will not be collecting the data from the organization due to limitation of the study. This data is used only to monitor engagement and is not shared publicly. The data is managed and stored securely by the Australian National University (MoodGym's developer) under strict privacy laws.

What if I become distressed during the study?

If you feel upset or overwhelmed at any point, the researcher is here to help and can guide you to support services such as Youthline or Gumboot Friday. This study is not a replacement for therapy, and the researcher cannot provide medical or anxiety treatment. If you have concerns about your anxiety, it's important to speak with your GP or another qualified health professional.

You can also choose to skip any question or part of the study if you don't feel comfortable answering. This will not affect your participation in the study, you remain free to take part at your own pace and in a way that feels safe for you.

Ethics approval

- "*This project has been reviewed and approved by the Massey University Human Ethics Ohu Matatika 1, Application OM1 25/34. If you have any concerns about the conduct of this research, please contact the Chairperson, Massey University Human Ethics Ohu Matatika 1, email* humanethics1@massey.ac.nz*."*

Who do I contact if I have any other questions, or wish to take part in this study?

Researcher	Supervisor
Name: Ruqayya Cementwala	Name: Dr. Matthew Shepherd
Email: [redacted]@massey.ac.nz	Email:M.Shepherd1@massey.ac.nz

APPENDIX C

Participant Consent Form

Project Title: Evaluation of Computerized Cognitive Behavioural Therapy (e-CBT) in Reducing Anxiety Symptoms and Its Indirect Effects on Memory Function in Young Adults

Researcher: Ruqayya Cementwala
Supervisor: Dr. Matthew Shepherd, Senior Lecturer, School of Psychology, Massey University
Ethics Approval: This project has been reviewed and approved by the Massey University Human Ethics Ohu Matatika 1, Application OM1 25/34. If you have any concerns about the conduct of this research, please contact the Chairperson, email: humanethics1@massey.ac.nz.

Thank you for taking the time to read this consent form.

I am inviting individuals aged 18 to 26 years to participate in Phase 1 of this study. If you meet the inclusion criteria (moderate anxiety symptoms, within the age range), you may proceed with the remaining phases of the study.

By signing this form, you are confirming that you understand the following:

1. I understand that the purpose of this study is to investigate the effects of an online cognitive behavioural therapy program (MoodGym) on anxiety and memory in young adults.
2. I understand that I will be asked to:
    - Complete a short anxiety screening test and memory test.
    - Participate in 5 self-paced MoodGym modules over 5 weeks.
    - Participate in two short check-ins with the researcher.
    - Complete a final anxiety and memory test.
    - Take part in a post-intervention Zoom interview (optional).

3. I understand that I will receive **free access** to MoodGym (valued at $45) and be entered into a draw for one of four **$80 gift vouchers**.
4. I understand that participation is voluntary. I can withdraw at any time without giving a reason, up to **two weeks after my interview**. If I withdraw before this time, my data will be destroyed.

I understand that I may choose to skip or decline to answer any specific question at any stage of the study (e.g., during assessments or interviews), and that doing so will not affect my ability to continue participating.

5. I understand that any data I provide will be kept confidential, stored securely, and de-identified to the greatest extent possible. My name will not be used in any reports or publications.
6. I understand that I may use a pseudonym when registering.
7. I understand that the check-in sessions are not therapeutic and will be recorded.
8. I may ask questions about the study at any time and can request a summary of the results at the end of the project.
9. I understand that this project is part of a Master's thesis in Psychology and that the findings will be submitted to Massey University.

Participant Declaration:

I have read and understood the information provided above. I understand what is being asked of me and I voluntarily agree to take part in this research.

Name: _____

Signature: _____

Date: _____

Contact Information:

Researcher: Ruqayya Cementwala

Email: [redacted]@massey.ac.nz

Phone: +64 [redacted]

Supervisor: Dr. Matthew Shepherd

Email: M.Shepherd1@massey.ac.nz

APPENDIX D

GAD-7 Questionnaire

GAD-7 Anxiety Over the last two weeks, how often have you been bothered by the following problems?	Not at all	Several days	More than half the days	Nearly every day
	0	1	2	3
1. Feeling nervous, anxious, or on edge				
	0	1	2	3
2. Not being able to stop or control worrying				
	0	1	2	3
3. Worrying too much about different things				

	0	1	2	3
4. Trouble relaxing				
	0	1	2	3
5. Being so restless that it is hard to sit still				
	0	1	2	3
6. Becoming easily annoyed or irritable				
	0	1	2	3
7. Feeling afraid, as if something awful might happen				

If you checked any problems, how difficult have they made it for you to do your work, take care of things at home, or get along with other people?

Not difficult at all	Somewhat difficult	Very difficult	Extremely difficult
☐	☐	☐	☐

Source: Primary Care Evaluation of Mental Disorders Patient Health Questionnaire (PRIME-MD-PHQ). The PHQ was developed by Drs. Robert L. Spitzer, Janet B.W. Williams, Kurt Kroenke, and colleagues. For research information, contact Dr. Spitzer at ris8@columbia.edu. PRIME-MD® is a trademark of Pfizer Inc. Copyright© 1999 Pfizer Inc. All rights reserved. Reproduced with permission

Scoring GAD-7 Anxiety Severity

This is calculated by assigning scores of 0,1,2 and 3 to the response categories, respectively, of "not at all," "several Days," "More than half the days," and "nearly every day". GAD-7 total scores range from 0 to 21.

0-4: Minimal Anxiety

5-9: Mild Anxiety

10-14: Moderate Anxiety

15-21: Severe Anxiety

APPENDIX E

Steps to Register for the MoodGYM Programme

1. Go to the MoodGYM website: https://www.moodgym.com.au/
2. Click **Register**. *(Please ignore any messages about payment — you will not be charged.)*
3. Select **Continue to register**.
4. Complete the required fields and create your account.
5. After creating your account, you will be taken to the subscription page.
6. Click **Redeem a token**.
7. Enter your unique token number: **YC5Z-RYSD**.
8. You can now begin working through the modules.

APPENDIX F

MoodGYM Observation Log

(Please complete as you work through each module, this will help me discuss your experiences during follow-ups.)

Module Information

- Module number: _____
- Date completed: _____
- Time spent on this module (approx.): _____ minutes

Experience During Module

1. How easy was it to navigate this module?
   ☐ Very easy ☐ Easy ☐ Neutral ☐ Difficult ☐ Very difficult

2. Did you complete the module in one sitting, or across multiple sittings?

   ☐ One sitting ☐ Multiple sittings

3. How engaged did you feel?

   ☐ Very engaged ☐ Engaged ☐ Neutral ☐ Disengaged ☐ Very disengaged

Learning & Reflection

4. What was the main idea or strategy you took away from this module?

5. Did you apply or try any of the strategies in your daily life?

   ☐ Yes ☐ No

   If yes, please give an example:

6. How useful did you find this module overall?

   ☐ Very useful ☐ Useful ☐ Neutral ☐ Not useful ☐ Not at all useful

7. How did you feel while completing this module? (e.g., calm, frustrated, motivated, tired)

8. Were there any challenges (time, internet, motivation, content difficulty) that made it harder to complete?

Notes for Discussion

Anything else you'd like to remember or talk about at our next follow-up.

APPENDIX G

Interview Schedule

Title: Post-Intervention Interview
Researcher: Ruqayya Cementwala
Supervisor: Dr. Matthew Shepherd
Format: Semi-structured interview
Estimated Duration: 30–60 minutes
Mode: Zoom or Microsoft Teams

(read aloud prior to recording)

Thank you for participating in this study. Before we begin, I'd like to confirm that you're comfortable proceeding with the interview and that you understand this conversation will be recorded for transcription purposes. You may skip any questions or stop the interview at any time. Do I have your consent to continue?

Section B: Interview Questions

1. How do you feel after completing the study?
2. How did you find the overall experience of using the cCBT program?

- Was it easy or difficult to navigate and understand?
- Were there any specific features or activities that stood out to you as particularly helpful or unhelpful?

3. Can you describe a moment or activity in the program that made a difference in how you thought or felt about your anxiety?

- What about it was meaningful or helpful for you?
- Were there parts that you found confusing, frustrating, or irrelevant?

4. How did you feel about completing the program online rather than in person?

- Did you find the online format more convenient or challenging?
- Did you feel supported or alone while working through it?

5. Since taking part in the program, have you noticed any changes in your anxiety or the way you manage it?

- What kind of changes have you experienced (e.g., thoughts, emotions, physical sensations, behaviour)?

- How lasting do you feel these changes have been?

6. Support and Check-ins

- What was your experience like during the check-in sessions with the researcher?
- Did these sessions make you feel supported, or help you stay on track with the modules?
- Were there any additional types of support you wish had been available?

7. Have you developed or discovered any new coping strategies through the program?

- How do you use these strategies in your everyday life now?
- Were there techniques that didn't work for you and why do you think that might be?

8. In what ways, if any, has engaging in the program affected your self-awareness or understanding of your mental health?

9. What motivated you to participate in this study and complete the cCBT modules?
10. Did your motivation change over time? If so, how?
11. Were there any challenges or barriers to completing the program (e.g., time, motivation, content)?
12. How did you feel about the pacing, structure, and overall length of the program?
13. Were there times when you felt like giving up or skipping parts of the program?

- What influenced that feeling - time, mood, relevance, or difficulty?
- What helped you overcome that or get back on track?

14. How did external factors like your environment, workload, or support system — affect your ability to engage with the program?
15. Do you feel that cCBT helped you manage your anxiety in a meaningful way?
16. Looking back, how do you see this program fitting into broader mental health support for young people?
17. Would you consider using cCBT again in the future or would you recommend it to someone else?

18. If you had the chance to change or improve anything about the program, what would that be?

19. Do you think programs like this could be helpful as a first step for those struggling with anxiety?

- In what ways could it be improved to better support young adults like yourself?

20. How likely are you to recommend this kind of program to others experiencing anxiety?

- What type of person do you think would benefit the most and who might not?

21. If you could redesign or change one thing about the cCBT experience, what would it be and why?

22. Is there anything we haven't talked about that you think is important for me to understand about your experience?

23. How did it feel for you to reflect on your experience in this interview today?

Once the study is complete, we will send you a summary of the findings if you've indicated interest. If you have any questions or thoughts after this interview, please feel free to reach out.