Description and evaluation of a programme aimed at teaching social skills to adolescents with level 1 autism spectrum disorder.

A thesis

submitted in partial fulfilment

of the requirements for the degree

of

Master of Applied Psychology

(Behaviour Analysis)

at

The University of Waikato

by

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THE UNIVERSITY OF
WAIKATO
Te Whare Wānanga o Waikato

2020

Abstract

Autism spectrum disorder (ASD) affects approximately 1 in every 100 people in New Zealand. Those that fall on the milder end of ASD who have level 1 ASD with or without comorbid intellectual disability (ID), find social skills to be their biggest challenge. A lack of social skills has been shown to have a variety of negative effects on individuals which include reducing the likelihood of attaining employment, to have friends and stable relationships, less likely to be living independently, and more likely to suffer from depression and anxiety than their typically developing peers. Research shows that this population struggle with their transition into adulthood, and often can regress due to a lack of support. This mixed methods study described and evaluated a programme aiming to increase the social skills and independent living skills of males aged between 16 and 24 years old. Data was collected over 13 weeks. Quantitative and qualitative data was collected through observations that were centre based and in the community. Interviews with facilitators, students and their mothers provided an accurate description of the programme and determined social validity. Results show that the programme increased independent living skills, as well as social and communication skills in students. Results also show the skills are generalisable and the programme is appropriate, acceptable and feasible.

Acknowledgements

Firstly, I would like to thank my supervisor, Associate Professor Angelika Anderson, for her constant support and encouragement that I received throughout this research project. I have learnt a lot from the guidance and feedback that you provided, and so I want to thank you for the valuable experience that this has been.

I would also like to offer a special thanks to the participants who took part in this study, including their families, the facilitators and the organisation, who offered their time for this research and supported me throughout the study. Their input was invaluable and without them, this thesis would not have been possible.

I would like to express my sincere appreciation to my mum, Sue, for teaching me to work hard and to never give up on my dreams. Thank you for your constant love and support.

Finally, I would like to give a special thanks to my friends as well as the team at Emerge Aotearoa. Thank you for your constant motivation and reassurance that you gave me over the last year. You are all greatly appreciated.

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Introduction

Autism spectrum disorder (ASD) is a developmental disorder that occurs on a spectrum with symptoms ranging from mild to severe (Centres for Disease Control and Prevention, 2016). A person with ASD exhibits behaviours considered restrictive and repetitive; as well as deficits in their social and communication skills (Gantman et al., 2012; Laugeson et al., 2012). The prevalence rates for ASD are increasing worldwide, including here in New Zealand (Anderson et al., 2016; Chien et al., 2011). In New Zealand, ASD is thought to affect as many as 1 in 102 people (Bowden et al., 2020). As the numbers of ASD are increasing, so too are the number of individuals requiring appropriate services. Research is evolving around the best way to meet the needs of this cohort, however there is still a huge gap regarding interventions to support this population (Shattuck et al., 2018).

Individuals with level 1 ASD with or without comorbid ID, are on the milder end of the autism spectrum. They are likely to find social situations challenging, and there is some concern around their restrictive or repetitive behaviours (Afsharnejad et al., 2020; Choque-Olsson et al., 2016; Howlin, 2000; Jonsson et al., 2016; Laugeson et al., 2012). This population requires support in these areas, however not a substantial amount of support as those with more severe ASD do (de Giambattista et al., 2019). As this population do not show severe symptoms like other individuals with disabilities, and they are seen as capable of everyday tasks, this often leads to a negative stigma surrounding them, and increased societal pressure to perform to a higher standard (Shattuck et al., 2018). This is due to the fact they do not look particularly disabled, however have some distinctly disabling skill deficits that severely affect their everyday lives (Howlin, 2000).

The challenges in social skills experienced by this group of individuals is associated with negative impacts on a number of important areas in their lives, including employment, friendships and mental health (Choque-Olsson et al., 2016; Gantman et al., 2012; Gates et al.,

2017; Herbrecht et al., 2009; Laugeson et al., 2012; Shattuck et al., 2018; Shattuck et al., 2012; Walsh et al., 2018; Wehman et al., 2016). Research has identified that the most likely cause for these negative impacts is the lack of social and communication skills within this population (Test et al., 2014; White et al., 2019).

The DSM V has defined ASD on a spectrum with a level associated to the level of support the individual needs, with level 1 requiring support and with level 3 requiring substantial support (Lobar, 2016).

The transition from being a teenager to an adult has long been recognized as a very challenging time for all adolescents (Test et al., 2014). This transition is much more difficult for those with level 1 ASD, as they require extra support to address their skill deficits (K. Anderson et al., 2018; Peters & Brooks, 2016). Without appropriate services to address their needs, research has shown that the skills of this population often plateau and can even regress after high school (Anderson et al., 2016; Roberts, 2010; Thompson et al., 2018; Wehman et al., 2014).

This population has been identified as having a high level of unmet needs and there is a lack of appropriate services to address these needs (Shattuck et al., 2018). There is also a gap in the literature describing evidence based interventions, that increase the social skills of adolescents and young adults with level 1 ASD as they transition into adulthood (Walsh et al., 2018). Therefore, this study aims to describe and evaluate an existing programme aimed at increasing the social skills in males aged between 16 and 24 years of age, with level 1 ASD with or without comorbid ID.

Literature Review

Autism is a lifelong neurological developmental disorder that occurs on a spectrum, with symptoms ranging from minimal to severe (Centres for Disease Control and Prevention, 2016; Ministry of Health, 2020). Autism spectrum disorder (ASD) affects a person's social functioning, communication skills, cognitive flexibility and emotional regulation (Ministry of Health, 2020). A diagnosis of ASD requires a person to have limitations in social and communication skills, as well as restricted and repetitive behaviours (Lobar, 2016). These behaviours must be occurring from an early age, the symptoms must cause marked disturbances in important areas of the individuals life, and these symptoms must not be due to another disorder (Lobar, 2016).

Leo Kanner was a prolific child psychologist around the 1940's, who published a paper called "Autistic disturbances of affective contact" (Masi et al., 2017). This paper was considered to be the first systematic introduction and description to autism in 1943 (Harris, 2018). This paper described eleven children as having delayed echolalia, an autistic aloneness and an obsessive desire for the maintenance of sameness and routine (Harris, 2018). The children were lacking the use of appropriate social communication, had restricted interests and their patterns of behaviour were often repetitive. Therefore, as a result of his findings, Kanner described autism as a disorder where we "must assume these children have come into the world with the innate inability to form the usual, biologically provided contact with people, just as other children come into the world with innate physical or intellectual handicaps" (Harris, 2018, p. 3).

Interestingly, in 1944, only one year after Kanner released his pioneering paper describing autism, Hans Asperger wrote his findings describing an "autistic psychopathy" (Masi et al., 2017). Asperger described children that did not possess a cognitive delay, and had similar communication and social deficits to Kanner's case studies (de Giambattista et al., 2019). As

Asperger's work was published in German during the Second World War, it was not discovered in the English-speaking world until the 1970's.

Lorna Wing, a notable autism researcher in the early 1980's, first described autism as a continuum ranging from mild to more severe symptoms (de Giambattista et al., 2019). This was an important admission as Wing was stating that autism affects each individual differently, at different severities. Wing noticed similarities between Kanner's and Asperger's work in 1981, and described Kanner's autism on the more severe end of the spectrum, and what she labelled "Asperger's syndrome" at the other, mild end. It is important to note that Asperger himself did not agree that Asperger's syndrome belonged on the autism spectrum as he believed there were small but significant differences between the two (de Giambattista et al., 2019).

Changing Definition of ASD

In the first *Diagnostic and Statistical Manual of Mental Health Disorders* (*DSM*) that was published in 1952, there was no real indication of autism spectrum disorder. Due to the lack of clarity around Kanner's concept of autistic disorder, the word 'autism' was only used once under the definition of childhood schizophrenia (Lord & Jones, 2012). Although there were some similarities, Kanner was clear that the two disorders were separate. His reasoning being that autistic symptoms appeared to be present at birth, whereas in childhood schizophrenia, typical development occurs before the onset of schizophrenic symptoms (Harris, 2018).

The American Psychological Associations second edition of the *Diagnostic and Statistical Manual of Mental Health Disorders* (*DSM II*) was published in 1968, and again any indication of autistic disorder was only considered under the definition of childhood schizophrenia (Harris, 2018). Around this time, Kolvin (1971) released research papers identifying clear differences between autism and childhood schizophrenia. This research

would prove to be imperative in assisting with the expanding definition and diagnostic criteria of autism.

The American Psychological Association's third edition of the *Diagnostic and Statistical Manual of Mental Health Disorders* (*DSM III*) was published in 1980. Autism is recognised to be a separate disorder to childhood schizophrenia, termed "infantile autism", and falls under the umbrella diagnosis of Pervasive Developmental Disorder (PDD) (Harris, 2018). All children that are diagnosed with a PDD have delays in social and communication skills, as well as delays in imaginative activity and play (Kabot et al., 2003).

The American Psychological Association released the revised version of the *DSM-III* (*DSM III-R*) in 1987, where there were four disorders under the umbrella of PDD: autistic disorder, Rett's syndrome, childhood disintegrative disorder and pervasive developmental disorder- not otherwise specified (PDD-NOS) (Harris, 2018). The definition for autistic disorder now showed the triad of impairments commonly associated with those that have autism: social deficits, communication/language deficits and restricted/repetitive behaviours (de Giambattista et al., 2019; Wing et al., 2011).

The American Psychological Association released the fourth edition of the *Diagnostic and Statistical Manual of Mental Health Disorders* (*DSM IV*) published in 1994, and the only notable change is that Asperger's syndrome is added under the umbrella of PDD.

There was a lot of confusion between Asperger's syndrome, PDD-NOS and autistic disorder. Some literature considered Asperger's syndrome to be a milder form of autism (Kabot et al., 2003). There was some debate about whether autism with mild symptoms without a cognitive delay (commonly referred to as high functioning autism), and Asperger's syndrome were the same (Wing et al., 2011). The need for clarification of the definition of each disorder was essential in order to shape each diagnostic criterium, therefore each disorder could be used more consistently by clinicians.

The American Psychological Association published the fifth and current edition of the *Diagnostic and Statistical Manual of Mental Health Disorders* (*DSM V*) in 2013, where autism is recognised as a spectrum disorder, with the diagnosis ranging from mild to severe. Autism spectrum disorder (ASD) is its own category and the *DSM V* eliminated Asperger syndrome, PPD-NOS and autistic disorder, as they all now fall within this spectrum (Centres for Disease Control and Prevention, 2016).

There are two groups of features that characterize an ASD diagnosis: "persistent impairment in reciprocal social communication and social interaction", and "restricted, repetitive patterns of behaviour" (Lobar, 2016). The *DSM V* combined the social and communication deficits, that were originally two of the three triads of impairment (Wing et al., 2011). The *DSM V* requires each diagnosis of ASD to have a level associated with it determining the amount of support required; Level 1 ASD: requiring support, Level 2 ASD: requiring substantial support or Level 3 ASD: requiring very substantial support (Lobar, 2016). The levels of support can be understood to mirror what was commonly known as high functioning or low functioning ASD; where Level 1 can be compared to high functioning ASD and Level 3 can be compared to lower functioning ASD (Lobar, 2016; Wing et al., 2011). Each diagnosis must specify if ASD is occurring with or without a comorbid intellectual disability (ID), as well as occurring with or without an accompanying language impairment (Lobar, 2016). "Symptoms must be present in early childhood (but may not become fully manifest until social demands exceed limited capabilities)" (Wing et al., 2011, p. 770), therefore this includes slightly older children that may not present with severe symptoms from a young age.

The *DSM V* removes the diagnostic labels of Asperger's syndrome and PDD-NOS, though if one already has a diagnosis of either of these, they are still able to continue to use it (Lobar, 2016). This allows them to still access services and treatment.

Prevalence

Prevalence rates are calculated by a random sample of the entire population the researchers would like to describe at a given time. They help predict the likelihood of specific diseases and illnesses in different cohorts, by distinguishing between many different significant factors, such as sex, age, ethnicity or socio economic status (Davidovitch et al., 2013). Prevalence rates help predict the number of individuals that will need to be treated for the disease or illness, which helps ensure there are enough vaccines and medication available for the amount of people likely to be accessing them. They also ensure that clinicians and professionals can determine that there are enough specialist facilities to cope with the amount of people that will need to access them, as well as there are enough trained staff and professionals to deliver these treatments. Prevalence rates also determine whether prevention measures are working or if they need to be updated.

This research project was conducted simultaneously to the outbreak of the Covid-19 pandemic; where “the estimation of the total confirmed cases and possible new cases in the future is vital for managing and directing the demand to the health system” (Ceylan, 2020, p. 2). Covid-19 had a prevalence rate of nil at the end of 2019, however as community transmission began to spread and become uncontrollable in some countries, the prevalence rates increased exponentially over a very short period of time (Ceylan, 2020).

The prevalence rate for ASD has been calculated in many different countries over different age ranges over different times. This makes it difficult to compare studies as the populations and methodologies often differ slightly, however it does give an indication on how certain areas or countries are faring. Overall, the prevalence rates of ASD appear to be rising (Alshaban et al., 2019; Centres for Disease Control and Prevention, 2016; Chien et al., 2011; Christensen et al., 2015; Davidovitch et al., 2013; Eapen et al., 2007; Elsabbagh et al., 2012; Fombonne, 2018; Heussler et al., 2001; Isaksen et al., 2012; Kim et al., 2011; Lauritsen

et al., 2004; Lobar, 2016; Matsuishi et al., 1987; Papanikolaou et al., 2009; Paula et al., 2011; Perera et al., 2007; Webb et al., 1997; Weintraub, 2011; Yeargin-Allsopp, 2008). This is a fairly consistent finding over the last 30 to 50 years across many different countries and many different ethnicities.

Recent data from the United States gathered by Christensen et al. (2015) have found that the prevalence of ASD in the United States increased from 4.2 per 1000 in 1996 to 15.5 per 1000 in 2010. That is an increase of 269% over 14 years. This also represents a 9.3% average annual increase. The latest statistics show approximately one child in 68 is diagnosed with ASD in the USA each year (Shattuck et al., 2018).

Australia have also seen significant increases in prevalence. The Australian Bureau of Statistics (2014) estimate that there was a 79% increase in prevalence for ASD from 64,400 people in 2009 to 115,400 people 2012. In New Zealand, there are approximately 93,000 people thought to have ASD currently in 2020 (AutismNZ, 2020). New Zealand's ASD prevalence rates are suggested to follow those around the globe (Anderson et al., 2016; AutismNZ, 2020).

Incidence

Incidence rates refer to the probability or risk of developing a disease (Chien et al., 2011). The incidence rates are calculated by using the number of new cases of the disease, and the population who have the potential to develop the disease over a specific period. Chien et al. (2011) argues that incidence rates provide a more accurate statistic of the occurrence of a disease or illness over prevalence rates. This is due to incidence rates studying the population as a whole, rather than only a sample of the population which is used in prevalence rates.

There are several studies regarding the incidence rates of ASD in different countries around the world (Davidovitch et al., 2013; Powell et al., 2000). Similar to the reports of

prevalence rates, all these studies use different methodologies for different time periods over different age ranges, making them difficult to compare and contrast. These reports still however show an increase of incidence rates of ASD around the world (Lauritsen et al., 2004; Powell et al., 2000).

Covid-19 shows how the incidence rate can change drastically over a very short period. The incidence rate for Covid-19 was nil in the United States until early 2020, where through unmanageable community transmission, the incidence rate increased to 119.6 per 100,000 on April 7th, 2020 (Centers for Disease Control and Prevention-Covid-19 Response Team, 2020). This number has been changing dramatically within a very short amount of time in different countries depending on which countries have the disease under control. As ASD is a developmental disorder and is not contagious, the prevalence rates for ASD provide a more accurate projection of the disorder and how many people will be affected by it (Powell et al., 2000).

From the statistics being recorded globally, it is clear that the rates for ASD are increasing across different countries and different cultures such as the United States, Sweden, Japan, Taiwan, Israel, Wales, South Korea, France, Australia, Denmark, and United Kingdom (Australian Bureau of Statistics, 2014; Chien et al., 2011; Christensen et al., 2015; Cialdella & Mamelle, 1989; Davidovitch et al., 2013; Heussler et al., 2001; Kim et al., 2011; Lauritsen et al., 2004; Matsuishi et al., 1987; Powell et al., 2000; Steffenburg & Gillberg, 1986). This shows that ASD affects a range of countries from a range of different ethnicities and cultures. Therefore, it is easy to assume that New Zealand is no different and will see the same consistent increase of levels that the rest of the world has. There is no evidence that suggests those with ASD being raised as bilingual will have additional language delays (Hambly & Fombonne, 2012), which is applicable to New Zealand where there are three national languages.

Male/Female ratio

Males are diagnosed with autism around four times more than females (Alshaban et al., 2019; Davidovitch et al., 2013; Lauritsen et al., 2004; Matsuishi et al., 1987; Perera et al., 2009; Powell et al., 2000; Treffert, 1970; Webb et al., 1997; Yeargin-Allsopp, 2008). Therefore, it is expected that there will be significantly more males needing to access services in future.

The Triad of Impairments

The triad of impairments discussed by Wing et al. (2011) describe the three areas of impairment that embody ASD: communication impairments, social impairments and restricted, repetitive behaviour. As defined in the *DSM V*, communication impairments have been combined with social impairments, as they often can be difficult to separate as they occur simultaneously (Lobar, 2016). DeRosier et al. (2011) suggest that social skill deficits can be noticed in children as early as preschool age, however for those with Level 1 ASD, these deficits sometimes only become evident when the social exchanges become more complex. Social and communication skills usually develop naturally through play activities, engaging in conversations and interacting with others (Geller & Greenberg, 2009; Laugeson et al., 2012). These are not normally skills specifically taught to children without any structured teaching.

Social Skill Deficits

Non-verbal communication is a type of communication between people that does not involve spoken language (DeRosier et al., 2011). One of the more common ways to test for verbal behaviour is by using B.F Skinner's Verbal Behaviour Milestones Assessment and Placement Program (VB-MAPP). This assessment is based on Applied Behaviour Analytic principles and shows the importance of non-verbal communication and the way language is used, rather than focussing on just spoken words (Cooper et al., 2020). Non-verbal

communication becomes especially important once the social situations become more complex, which is usually during teenage years (Test et al., 2014). This non-verbal information can include body language, tone of voice, eye contact and gestures. Non-verbal communication is an extremely important aspect of social interactions as it gives both the listener and speaker important cues to how the other person is feeling and the direction of the conversation. Being able to notice these cues and respond accordingly to them is a common skill deficit for those with ASD, as it is not acquired naturally it must be specifically taught to this population (Gantman et al., 2012). Non-verbal communication is also an important aspect when comprehending humour and making jokes. Being able to understand the thoughts and emotions of others by reading these non-verbal cues, allows people to make and understand appropriate jokes that will be received well by the audience (Geller & Greenberg, 2009). For example, attempting to joke about the way a person looks or their style can be accomplished, however it needs to be done carefully to ensure the person's feelings are not hurt.

In addition to struggling to understand non-verbal cues, is those with ASD struggle to see things from another person's perspective and interpreting other people's emotions (Gantman et al., 2012). This often leads to difficulties in engaging in conversations and being able to respond appropriately (Laugeson et al., 2012). Furthermore, they often lack an of understanding of irony, humour and metaphors (Geller & Greenberg, 2009). This is a consequence of literal thinking combined with difficulties reading non-verbal cues (White et al., 2019).

As a result of these challenges described above, common conversational skills such as entering and exiting conversations appropriately are not often displayed by those with ASD. These types of behaviour are seen as rude and interruptive, and regularly deter people from engaging in conversation with them (Chen et al., 2015; Gantman et al., 2012). Often those

with ASD have awkward body language, talk loudly and stand too close (Gantman et al., 2012). This population also have difficulties in regulating their emotions, which can lead to frequent angry outbursts or increased frustration when demands are not met (White et al., 2019).

In conclusion, those with ASD are less likely to attend to the subtle feedback that shapes our behaviour; therefore, these socially appropriate skills have not been learned (Wehman et al., 2014). As a result of these skills not being learnt, peers will often avoid this person if they display such behaviours as they feel uncomfortable or irritated (Test et al., 2014).

Transition

The transition from teenage years to adulthood has long been known to have challenges. Navigating through puberty, developing independence and shifting from secondary schooling into employment or post-secondary schooling, are all part of this transition process (Kuo et al., 2018). Struggles with self-esteem and self-confidence are common during this period amongst teenagers, as they find their way through identity struggles, new relationships and becoming more independent (Geller & Greenberg, 2009).

For youth with ASD, these challenges are amplified by the delays in communication and social skills, as well as their restricted and repetitive behaviours (Baker-Ericzén et al., 2018; Geller & Greenberg, 2009; Peters & Brooks, 2016). Research shows there is a need for extra support for this population of young people transitioning into adulthood, however there are many barriers hindering those in need of accessing suitable programmes (C. Anderson et al., 2018).

In terms of young people being a part of their own transition process, Elias et al. (2019) found that those with ASD were not active participants in their transition programmes. Kuo et al. (2018) found only 14% of young adults with ASD had discussed their transition to

an adult provider with their paediatrician. Griffin et al. (2014) looked at student engagement and transition planning, and found that students with ASD found transition planning challenging due to the social and communicative demands it requires and were less likely to be involved.

Demand for Services

Evidence shows when youth with ASD leave high school there is a loss of appropriate services available (C. Anderson et al., 2018; Kuo et al., 2018; Shattuck et al., 2012) and the demand is high for the services that are available (Chen et al., 2015; Test et al., 2014; Thompson et al., 2018). Those from a low socio economic area may not be more susceptible to developing ASD, but they have fewer resources to be able to access appropriate services to manage the skill deficits associated with ASD (Chen et al., 2015).

Research has also shown that youth and adults who have ASD have fewer resources available to access than other developmental disabilities, such as Down syndrome (Baker-Ericzén et al., 2018; Test et al., 2014; Thompson et al., 2018). The services that are available, families have described as chronically underfunded (C. Anderson et al., 2018).

Recently, Shattuck et al. (2018) discussed the need for interventions to address the needs of youth with ASD of all different abilities. This would be especially beneficial for those with level one ASD with or without comorbid ID, as they often do not meet the criteria for services as they are seen as functioning and academically able (C. Anderson et al., 2018). Taylor and Seltzer (2011) found that almost one third (29.4%) of young adults with ASD without a comorbid intellectual disability (ID) were not participating in any type of employment or college experience which is consistent with other research (King & Merrick, 2020). Not participating in any activities can exasperate the challenges those with ASD already experience (Peters & Brooks, 2016).

Sosnowy et al. (2018) found two primary themes for young adults with ASD transitioning to adulthood: independence is a key aspect to establishing autonomy; and this population are aware of the challenges they face due to their ASD and wish there were services to address these specific issues. Services aimed at addressing the issue of increased autonomy in youth with ASD are of exceptional importance. This population is often aware they are different to their peers but also aspire to be like them, in particular when they get to their teenage years (Sosnowy et al., 2018). Skills that have been shown to be beneficial for youth with ASD to learn during their transition to adulthood are daily living skills (Roberts, 2010), social and communications skills (Test et al., 2014) and functional vocational skills (Roberts, 2010). Youth with ASD are shown to struggle in these areas and this appears to be a direct result of their lack in social skills.

This population often doesn't meet the criteria for services that are available and struggle to find support services that are suitable for their needs (Baker-Ericzén et al., 2018). The decline in available services once the individual leaves school combined with the inability to access what services that are actually are out there, is what parents and the young person with ASD find the most concerning (K. Anderson et al., 2018; Baker-Ericzén et al., 2018; King & Merrick, 2020). The services that are available struggle to meet the deep and diverse needs of those with ASD for all different levels (Test et al., 2014). The mother-child relationship has also been found to decline after the child with ASD leaves high school. This is likely to be impacted by the child's unmet service needs and lack of behavioural support (Griffin et al., 2014).

Impacts

This population with level 1 ASD with or without a comorbid ID can be unfairly discriminated against due to higher social expectations and lack of understanding from peers and society (Geller & Greenberg, 2009; Kuo et al., 2018). Many of these individuals might

not look particularly disabled but still have skill deficits that have a huge impact on their life. Those with level one ASD without a comorbid ID often do not struggle academically (Peters & Brooks, 2016), therefore peers and adults can place greater social expectations on them (Gantman et al., 2012). The intelligence they possess often can mask the significant challenges they face (Gantman et al., 2012), and "the potential for success can be overestimated for these individuals, leading to a lack of preparation and support for a realistic transition to adulthood" (Geller & Greenberg, 2009, p. 93). Socially, these deficits become more evident in teenage years as the "typical peer social interactions become more complex" (DeRosier et al., 2011, p. 1033).

There are many areas of a young person's life that research shows can be negatively impacted by ASD. They have less friendships than their typically developing peers and are less likely to have romantic relationships (Afsharnejad et al., 2020; Anderson et al., 2016; Gantman et al., 2012; Wehman et al., 2014). This population are less likely to be living independently (Afsharnejad et al., 2020; Jozkowski et al., 2019), less likely to be employed (Chen et al., 2015; Rosales & Whitlow, 2019), higher feelings of loneliness (King & Merrick, 2020; Wehman et al., 2014), less sense of self-worth (Peters & Brooks, 2016), and higher rates of depression and anxiety (Anderson et al., 2016; Gantman et al., 2012; Laugeson et al., 2012) when compared to their typically developing peers.

Research tells us that youth with ASD that aren't involved with any services aimed at the transition from high school into adulthood, can regress due to lack of stimulating activities and positive support available (Taylor & Seltzer, 2011; White et al., 2019). These impacts if they are not addressed, lead to outcomes that have an ongoing cost to society as well as puts tremendous stress on families (Anderson et al., 2016; Buckley et al., 2013).

Research is beginning to emerge about how these negative effects of ASD not only impact the individual but also their family (Gantman et al., 2012). Parents of children with

ASD are more likely to be stressed, take sick leave and have higher rates of anxiety and depression when compared to parents of typically developing children (Choque-Olsson et al., 2016; Choque-Olsson et al., 2015).

Employment

Evidence suggests that a lack of social skills is the biggest impact for those with ASD to successfully obtain or maintain employment (Chen et al., 2015; Geller & Greenberg, 2009; Rosales & Whitlow, 2019; Walsh et al., 2018). Employment is associated with many positive outcomes for individuals including those with ASD, such as increased self-esteem and general wellbeing (Anderson et al., 2017), financial independence (Chen et al., 2015), improvements in communication skills and peer relationships (Walsh et al., 2018), and can help reduce negative behaviours related to ASD such as maladaptive behaviours (Taylor & Seltzer, 2011). One study interviewed supervisors that employed individuals with ASD and found that there was a direct link between deficits in verbal and non-verbal communication, and job prospects and performance (Hagner & Cooney, 2005). A lack of employment has been shown to have a negative impact on an individual's self-esteem, decreased independence and an increased likelihood of depression (Lee et al., 2018).

The area of impairment for those with ASD, 'restricted and repetitive behaviours', can prove to be beneficial in the employment area. Skills that are common for those with ASD can be highly valuable in the workplace such as attention to detail, meticulous planning (Geller & Greenberg, 2009), and a "high tolerance for repetitive abilities" (Hagner & Cooney, 2005, p. 91).

Quality of Life

The overarching goal of applied behaviour analysis is to increase an individual's quality of life by increasing socially appropriate behaviours (Cooper et al., 2020). Quality of life can be difficult to measure as each individual will have different thoughts and feelings

about what aspects of life are important (Buckley et al., 2013). For those with ASD, quality of life often means "meeting the normative standards of the society in which he or she lives" (Knüppel et al., 2018, p. 267). This overall aim can be made up of many different aspects that are important to the individual such as living independently, having friendships and relationships, as well as having meaningful employment (Chen et al., 2015; Wehman et al., 2014).

As research suggests there will not be a decrease in the prevalence for ASD therefore suitable support systems need to be accessible and feasible in order to address the needs of this population (C. Anderson et al., 2018; Chen et al., 2015). In order to improve employment opportunities and overall quality of life for those with ASD, support services are needed to help develop these skills deemed necessary to increase the likelihood of living an independent and social life. A transition equipped with resources targeting these social, communication and independent living skills gives the individual the best means to live a thriving and meaningful life. ASD is a lifelong disorder however with correct treatment, its debilitating aspects can be managed over time. Ruble et al. (2018) believe if services teach self-determination and acting voluntarily, which consists of skills such as problem solving, goal setting and choice making, this can help an individual with ASD learn to self-manage and make more independent choices (Test et al., 2014).

Social Skill Interventions

Over recent years, research has increased around programmes that focus on developing the social skills of youth with level 1 ASD with and without comorbid intellectual disability. The following are examples of types of group social skill intervention programmes. Research is limited regarding the age range of 16 to 24 years of age, one systematic review found no evidence based social skill interventions for individuals with ASD with a comorbid ID over 17 (Reichow et al., 2013). However, there is slightly more

recent literature although not an abundance regarding youth over 17. Therefore, these examples focus on evidence based social skill interventions in children as young as eight, but with a diagnosis of ASD with or without comorbid ID, to provide a description around how the literature describes social skill interventions for those with ASD.

Overall Format

Literature shows that most social skill intervention programmes follow a group size of less than 30 students, with the ideal group size of around ten to 15 (Afsharnejad et al., 2020; Choque-Olsson et al., 2016; Gantman et al., 2012; Herbrecht et al., 2009; Jonsson et al., 2019; Laugeson et al., 2012; Marriage et al., 1995; Rose & Anketell, 2009). The group sessions that were closer to 30 students, found that the facilitators didn't get to spend the same amount of quality one on one time with all students. This can lead to some students not gaining as much from the programme as others, as they are less likely to obtain the amount of quality feedback and practise time required to develop the skills (Gantman et al., 2012).

Group-based sessions rather than one on one sessions were used to develop the generalisation of skills to other people (Choque-Olsson et al., 2016; Wyman & Claro, 2019). This was effective as the skills being developed were practised with multiple people in multiple sessions throughout the course of the programme (Laugeson et al., 2012).

DeRosier et al. (2011) attempted to address generalisability of skills by including community-based activities during certain sessions. This element hoped to encourage students to practise new skills in a more naturalistic environment. Parents were invited along to these sessions, as common feedback from previous studies found that parents felt as if they did not have much involvement with the programme (DeRosier et al., 2011; DeRosier, 2004).

Weekly sessions over 14 to 16 weeks were observed to be the most common length of social skill intervention programmes for children and adolescents with ASD (Choque-Olsson et al., 2016; Gantman et al., 2012; Rose & Anketell, 2009). This could be due to the literature

mostly consisting of pilot studies; therefore, the studies were required to be of a reasonable length but not too long. Another reason could be that the main topics identified as critical material to be taught within the programme are able to be covered within this timeframe. Rose and Anketell (2009) conducted their social skill intervention over five weekly sessions. The main critique from feedback from parents and students heavily was regarding the length of the programme being too short. This is consistent with feedback from the longer programmes, where parents and students of a programme that ran for 24 weeks would have liked it to continue (Jonsson et al., 2019; Laugeson et al., 2012).

The format of the way that sessions ran was quite similar throughout the different programmes. Most programmes followed the format of an opening icebreaker, structured activities, break time including a snack, followed by more structured activities (Gantman et al., 2012; Laugeson et al., 2012; Rabin et al., 2018). Some of the programmes also finished by adding another element of setting a homework task (Afsharnejad et al., 2020; Choque-Olsson et al., 2015; Herbrecht et al., 2009; Jonsson et al., 2016; Marriage et al., 1995).

Teaching Tactics

The skills that have been taught in previous programmes have all been taught using similar techniques. The teaching of skills occurred during the structured activities section of each session. The literature shows most of the programmes were developed using a combination of cognitive behaviour therapy (CBT) and social learning theory (Afsharnejad et al., 2020; Choque-Olsson et al., 2016; Choque-Olsson et al., 2015; DeRosier et al., 2011; Gantman et al., 2012; Herbrecht et al., 2009; Jonsson et al., 2016; Jonsson et al., 2019; Laugeson et al., 2012; Marriage et al., 1995; Rabin et al., 2018; Rose & Anketell, 2009; Wyman & Claro, 2019). CBT is used to develop the course structures by setting individual and realistic goals that take a practical approach to change thoughts and patterns of behaviour

(Choque-Olsson et al., 2016). Social learning theory suggests that a person learns from other people via observations, imitation and modelling of behaviours (DeRosier et al., 2011).

Previous literature suggests that most of the teaching was done in a similar way. The facilitators began teaching by having discussions and delivering instructions around the topic (Afsharnejad et al., 2020; Choque-Olsson et al., 2016; Choque-Olsson et al., 2015; DeRosier et al., 2011; DeRosier, 2004; Gantman et al., 2012; Jonsson et al., 2016; Laugeson et al., 2012; Marriage et al., 1995; Rabin et al., 2018; Wyman & Claro, 2019). This stage was crucial as it allowed students to learn and understand why the skills being taught were socially appropriate (Laugeson et al., 2012). When the importance of a skill is understood, it is more likely to be practiced. It was during this stage that aspects of CBT were used and goal planning was implemented, by allowing students to set individual and realistic goals depending on their stage of progression of skills (DeRosier et al., 2011). When the facilitators work with the students to set their own goals, the goals are more likely to be met as they are more meaningful to the student (White et al., 2019).

Following on from delivering instructions and goal setting was where social learning theory was implemented. It is evident when describing the social learning theory strategies used to teach skills, most of the literature followed a Behavioural Skill Training (BST) approach. BST incorporates four stages of teaching of skills: instruction, demonstration, role play and practise, and feedback (Pan-Skadden et al., 2009). Although the literature does not specify BST, from a behavioural perspective it is clear that this was the main teaching strategy.

The facilitators demonstrated the skills for the students to observe, who then had the opportunity to imitate and practise in a role play situation (DeRosier et al., 2011; Gantman et al., 2012; Laugeson et al., 2012; Rabin et al., 2018). Demonstration and role play are also the second and third steps of BST. Imitation is an evidence based technique used to learn new

skills, especially when given multiple opportunities to practise (Wyman & Claro, 2019). Role play is an effective way to teach new skills as it allows the student to visualise, experience and practise different ways of dealing with a situation (Rose & Anketell, 2009). Generalisation of the new skill is also developed with role play, as the skill is generalising across different people (DeRosier et al., 2011; DeRosier, 2004; Wyman & Claro, 2019). The facilitators emphasise repetition of the learnt skill so that it eventually becomes an automatic behaviour (Afsharnejad et al., 2020)..

The final step of the teaching process was coaching and providing feedback. Feedback is also the fourth step of BST. The facilitators, as well as other students, provided feedback for correct execution of skills by positively reinforcing in the form of praise (Afsharnejad et al., 2020; Choque-Olsson et al., 2016; Choque-Olsson et al., 2015; Dale et al., 2018; DeRosier et al., 2011; DeRosier, 2004; Gantman et al., 2012; Jonsson et al., 2016; Laugeson et al., 2012; Marriage et al., 1995). If the student needed, the facilitators or the other students would provide them with corrective feedback or extra coaching of skills (Choque-Olsson et al., 2015). Over time, the facilitators' positive reinforcement will be replaced with natural reinforcement, where the increase in positive social situations and communication reciprocity will provide students with the reinforcement needed to continue performing the skill (Choque-Olsson et al., 2016).

DeRosier et al. (2011) incorporated parent participation in selected sessions which included centre based and community sessions within their programme. This method of teaching was used to increase communication between parents and children, as well as increase parental modelling of positive behaviours in front of their child. The programme hoped to increase treatment efficacy by encouraging parents to support and reinforce positive changes outside the sessions, model positive attitudes towards treatment and enhance communication with their child.

Target Behaviours

Previous researchers have stated that the target behaviours are chosen mainly from the literature and at times from parents (Choque-Olsson et al., 2016; Laugeson et al., 2012; Marriage et al., 1995). These target behaviours are chosen as they are seen as the most crucial skill deficits and have the biggest impact on this population (DeRosier et al., 2011). The most common topics or modules focussed on communication, coping strategies and understanding social rules. Communication skills included verbal and non-verbal communication, entering and exiting conversations, as well as electronic forms of communication (Afsharnejad et al., 2020; Choque-Olsson et al., 2015). Coping strategies included how to handle when someone says no, and how to handle bullying (Herbrecht et al., 2009; Rose & Anketell, 2009). Understanding social rules and relationships included friendship skills, comprehending humour, and recognizing and understanding emotions (Gantman et al., 2012; Laugeson et al., 2012; Rabin et al., 2018). Literature has also shown that these skills are the most meaningful to this population which increases the social validity of the interventions (Afsharnejad et al., 2020; Choque-Olsson et al., 2016; Laugeson et al., 2012).

How the Skills Were Measured

Skills were measured both quantitatively and qualitatively. Using a quantitative measurement, skills were most commonly measured through pre and post questionnaires or scales such as The Social Responsiveness (Afsharnejad et al., 2020; Bölte et al., 2008; Marriage et al., 1995; Rose & Anketell, 2009; White et al., 2019). Often, more than one scale was used within the study to increase data collection, for example a self-report scale and the Social Skill Rating System (Laugeson et al., 2012; White et al., 2019). This was identified as the most feasible way to track behaviour change in students as it breaks down skills into more manageable questions (Bolte & Diehl, 2013).

Qualitative data was collected through interviews and focus groups. Qualitative data can help build on the quantitative data by increasing the substance of the results. Choque-Olsson et al. (2016) produced a qualitative review of a social skill intervention and found two major themes emerged: social skill improvements and other positive change. These themes were mirrored throughout the literature and included subthemes such as independence and verbal and non-verbal communication (Afsharnejad et al., 2020; Herbrecht et al., 2009; Jonsson et al., 2016; Rose & Anketell, 2009; Williams White et al., 2007). The majority of the results were very positive, with most parents and students noticing positive changes in their behaviour (Afsharnejad et al., 2020; Choque-Olsson et al., 2016; Marriage et al., 1995; Rose & Anketell, 2009). Another theme that commonly emerged from the focus groups, was the individual goals that the students achieved, such as making one friend (Afsharnejad et al., 2020; Choque-Olsson et al., 2016; Choque-Olsson et al., 2015; Jonsson et al., 2016).

Interestingly, Choque-Olsson et al. (2016) found that even low responders of an intervention saw small but significant improvements in their skills. This notion is supported by other literature that shows that almost all of the participants either showed no change, a small amount of positive change or a significant positive change of behaviour (Afsharnejad et al., 2020; Choque-Olsson et al., 2015; Gantman et al., 2012; Herbrecht et al., 2009; Jonsson et al., 2016; Laugeson et al., 2012; Marriage et al., 1995; Rabin et al., 2018; Rose & Anketell, 2009; Wyman & Claro, 2019). This demonstrates that only a very small portion of participants regressed during an intervention therefore showing the interventions are worthwhile.

Afsharnejad et al. (2020) found a social skills intervention programme that had previously been implemented in European countries, was feasible and acceptable in an Australian setting. This shows that social skill intervention programmes can be successfully transferred to different countries and different ethnicities. This is also one of the most recent

studies at the time of this research study and they found that over 300 families in the region expressed interest in future programmes of a similar nature (Afsharnejad et al., 2020). This shows the demand is exceptionally high for these types of programmes addressing social skills in this population.

Summary of Social Skill Interventions

The research shows positive results for interventions aimed at increasing social skills in youth with ASD with or without comorbid ID. As the quantitative data showed, almost all students either stayed the same or improved the targeted skills; while the qualitative data further supported this notion with most students and parents stating they were noticing improvements in behaviour.

Gaps in the Literature

To date, the literature may be increasing around adolescents and young adults with level 1 ASD, however it is still limited (White et al., 2019). For children and adolescents with level 1 ASD with or without comorbid ID, the literature clearly identifies that the biggest challenge for this population is their lack of social and communication skills; however, there are only a handful of interventions that attempt to address this issue (Gantman et al., 2012; Laugeson et al., 2012; Shattuck et al., 2018). There is an even smaller amount of literature addressing the transition into adulthood for those with ASD. The transition phase accentuates the challenges caused by ASD, and without the right support systems in place, this population often plateau or even regress after high school (Anderson et al., 2016; Shattuck et al., 2018). Interventions that support this transition are sparse but show promising results (C. Anderson et al., 2018; Wyman & Claro, 2019). Increasing the qualitative research in this area can allow clinicians to have “a better comprehension of treatment outcomes, beyond conclusions that can be drawn from standardized outcome measures” (Choque-Olsson et al., 2016, p. 996). There is also a lack of understanding and consideration of the experiences of students that

participate in social skill group programmes (Choque-Olsson et al., 2016) therefore it is imperative that researchers gain students' perspectives and allow them to have a voice around their own wellbeing.

Current Study

It is clear there are significant gaps in the literature regarding programmes aimed at those with ASD, especially for the young adult population. The purpose of this current study is to add to the evidence base of such programmes. The aim of this current study is to provide a descriptive evaluation of an already established programme aimed at increasing the social skills of males of aged between 16 and 24 years, with level 1 ASD with or without comorbid ID. It is anticipated that this research will provide data that shows that the programme targets skills considered to be important by parents and students as well as clinical literature. Further, it is anticipated that the data may show the extent to which the participants' experiences are positive and perceived to be relevant to their needs. Observational data will show if the programme does indeed address the stated aims, and the extent to which it is effective in producing the targeted behaviour change. In conjunction, the evidence produced by this project will allow an evaluation of the programme in terms of its validity and effectiveness.

Method

Participants

There were three groups of participants in this research. Group 1 consisted of two staff members facilitating the youth programme. Group 2 consisted of three male students that attended the programme, and Group 3 consisted of the students' (Group 2) mothers.

To meet the criteria for participation in this project, the student participants needed to be able to appropriately answer the questions required for the study, have a parent willing to take part, and attend the programme on a regular basis. Three student participants met the inclusion criteria and verbally assented to participate (Appendix H and K). Group 3

participants were provided with hard copies of the information sheets, and consented for themselves and their sons to participate (Appendix H, G, J and K).

At the time of recruitment Participant 1 Roger* was 17 years old and had a diagnosis of ASD, an ID and an auditory processing disorder; he was still attending high school. Participant 2 Ben* was 20 years old and had a diagnosis of Asperger's syndrome; he was attending a course at a tertiary provider part time. Participant 3 Ted* (*pseudonyms) was 18 years old and had a diagnosis of ASD and a mild ID; he had a casual job doing garden work.

Settings

The primary setting was a centre of an organisation supporting those with developmental disabilities, situated in a provincial town in New Zealand. The centre was a large building consisting of classrooms and small private rooms. Interviews took place in either one of the private rooms, over the phone or online over zoom. The private room was quiet enough to be able to leave the door open but still be able to hear the participants. This was to ensure I was never alone with the participants, as staff and students were constantly walking past. The phone and online zoom interviews were held in quiet rooms of the participants' home and my own home. The observations mostly took place in a classroom within the centre, apart from the outing to a Starbucks coffee shop and an arcade centre called Time Zone. Both were within walking distance from the centre.

Independent Variable

The independent variable for this study was the programme aimed at increasing the social skills for male adolescents and young adults with ASD.

Aim

The aim of the programme was to increase the social skills of the target population, by providing a safe and supportive environment to teach social and communication skills, increase understanding and awareness of social situations, and build confidence and

friendships. Elements of the programme also targeted independent living skills. Some skills would be tested in the community to test for generalisation.

Format

The programme ran once a week during term time, between 6.30pm and 8.30pm. There were between four and 12 youth that attended most weeks, with two facilitators. If more than 12 students were expected, a third facilitator would be called in. The first week of term always was a brainstorm around what skills or activities the students would like to develop or do throughout the term. Weekly sessions either focused on developing specific skills such as managing anxiety or how to make friends. Some weekly sessions also included outings or activities, where the timetable for these sessions usually ran in three-week blocks. The first week would involve discussions, teaching and role play around skills needed to implement the activity. The second week would be implementing the activity, for example a community outing or cooking within the centre. The third week would be a debrief around the previous week's activity.

The structure of the programme was dependant on the type of activity or skills being addressed. A usual session that was centre based, would begin with an icebreaker between 6.30pm and 6.45pm. The group would sit around a table, introduce themselves and be encouraged to take part in an icebreaker activity. Some examples that were used in previous terms were "say something nice about the person to your left" and "say one positive thing you have learnt this week".

The time between 6.45pm to 7.30pm was allocated for structured activities. This section included any specific teaching of skills or behaviours, discussions around upcoming outings and sometimes a chance to practise these skills. Previous examples have addressed bullying, and going to a pub for a meal. At 7.30pm there would be a break where participants could have a juice and some biscuits. This would also signal the start of free time which

would go until the end of the session at 8.30pm. Free time consisted of informal discussions and playing board games or some sort of activity within the centre.

If the session involved a community outing, the session would begin with a short discussion around what to expect, what they required and anything they needed to remember. After a short 10-minute discussion, the group would set off into the community by walking to the destination. A previous example of a community outing is a visit to the Board Games and Eatery, where students played different board games available in a café and were able to buy a drink or a snack if they wanted. Another example is a visit to a local restaurant where the students bought burgers and drinks (including alcoholic drinks for those over 18). The group would return to the centre at around 8.20pm to ensure students were ready to be picked up.

Facilitator Involvement

I conducted a 25-minute semi-structured interview with the facilitators at the beginning of the study prior to data collection. The purpose of the interview was to gain a richer understanding of the programme and how it worked, in order to provide an in-depth description of the independent variable (the programme). There was no other involvement from the facilitators for the rest of the study and they continued to run the programme as normal.

Dependant Variables

Qualitative Data

The results of the interviews are also considered dependant variables, as collecting qualitative data was necessary to provide an accurate description and evaluation of the programme. The in person and zoom interviews were recorded, so they could be replayed and summarised accurately. The phone interviews were not recorded, however thorough notes were taken to ensure all the relevant information was collected. The purpose of these interviews was to establish the social validity of the programme.

Social Validity

Student Involvement. The students continued throughout the sessions as normal with no disruption from the second observer or myself. I conducted a 20-minute semi-structured interview with the student participants after observational data had been collected.

Parent Involvement. I conducted a 20-minute semi-structured interview with the mothers of the student participants. The interviews took place after observational data had been collected.

Data Collection for Case Studies

Activity Specific Target Behaviours for Starbucks. 13 target behaviours were specifically addressed within the programme related to a successful Starbucks outing. These behaviours were: checks to see if they have their wallet; moves out of the way for other pedestrians (footpath courtesy); looks both ways before crossing the road; identifies correct counter; waits in the line; greets counter staff; orders correct drink; says correct name for order; pays correctly; takes change (if applicable); says thank you to counter staff; moves to the side/waits in an appropriate place; retrieves drink when name is called; sits at an appropriate table. This set of behaviours was taught in the practise session within the centre and then tested in the community at Starbucks. Each target behaviour was scored every opportunity it had to occur either: behaviour performed without a prompt, behaviour performed with a prompt or behaviour was not performed.

Activity Specific Target Behaviours for Time Zone. There were no behaviours specifically targeted for this outing. Time Zone was however, a chance for some behaviours previously targeted in the Starbucks outing to be tested for generalisation and maintenance. These behaviours were footpath courtesy and crossing a road safely.

Target Behaviours Observed During Sessions Not Focussed on an Outing. There were three target behaviours measured for Group 2 (student participants) when the sessions

occurred within the centre and were not focussed on an outing. Data was collected for these three target behaviours over nine sessions. These target behaviours were measured either by event recording to collect the frequency of occurrences or calculating the percentage of opportunities the behaviour had to occur.

Entering a Conversation Appropriately. The first target behaviour was entering a conversation appropriately. During group or 1:1 conversation, appropriately entering a conversation was scored if the participant began speaking when the other person or no one in the group was talking. The volume of the participant's voice would not be whispering or yelling, but somewhere in between. If the other person or someone in the group replied to the participant, this is considered the target behaviour being met. ***Raised Their Hand.*** The second target behaviour was raising their hand. During centre-based sessions, the target behaviour would be scored when the participant raised their hand and remained quiet until the person running the activity pointed to them or said their name. This target behaviour could occur during parts of the session where the facilitators were brainstorming ideas or running an exercise. During the unstructured activities section, the students played the game hangman on multiple occasions. This led to more opportunities for this target behaviour to occur in an appropriate setting.***Participates in a Group Activity.*** The third target behaviour was participating in a group activity. During centre-based sessions, this target behaviour was scored when the participant was actively engaged in a group activity. This could be by having at least one turn in a game such as a card game, a board game, or having a role in an activity such as chopping vegetables during a cooking session. The movie session required students to stay in the room where the movie was being shown and not disturb others. Participating in a group activity was scored for this session, if the student stayed for 90% of the time the movie was being shown and did not disturb another student more than once throughout the movie.**Inter Observer Agreement (IOA)**

Inter observer data was collected by an independent second observer attending 22% of the total observation sessions. This second observer was a person who is employed by the same organisation however works in a different department. This person also holds a Master of Psychology in Applied Behaviour Analysis. The second observer was briefed on what behaviours were being observed, the operational definitions of the behaviour and how to collect data. The primary and secondary observers independently collected data throughout the observation sessions and then this data was compared at the end of each session. A trial-by-trial IOA was used to calculate inter-observer agreement by calculating the total number of agreements divided by total number of disagreements, multiplied by 100. Inter-observer agreement between 80-100% is considered sufficient reliability, with scores above 90% increasing the confidence that the data accurately reflects the behaviour changes (Cooper et al., 2020).

Materials

Data Collection Forms

I created event recording forms on Microsoft Word, that were used to collect observational data of the frequency that each target behaviour occurred during all centre and community-based observation sessions (Appendix D). The interviews that were conducted over the phone required a pen and refill paper to take notes.

Technology

My HP Envyx360 laptop was used to record the interviews through either the voice recording function or via Zoom. The Zoom software uploaded the recorded zoom meeting to the drive that only I had access too. The calculator on my laptop was also used to calculate the descriptive statistics. My Samsung 9 mobile phone was used to call the participants to conduct the phone interviews.

Research Design

This project was a mixed methods descriptive study including qualitative and quantitative data. The project aimed to describe and evaluate an already existing programme.

Ethical Approval

The University of Waikato Psychology Research and Ethics Committee granted ethical approval for this research project to be conducted (HREC(HEALTH)2020#27).

Procedure

The programme organiser at the participating organisation, initiated contact with the university expressing interest in a collaboration to independently describe and evaluate a programme that aimed at increasing the social skills of youth with level 1 ASD with or without comorbid ID. I began attending the programme sessions to build rapport with the students and identify potential participants. This was disrupted by the Covid-19 pandemic and the programme was immediately cancelled due to New Zealand entering a state of lockdown. After 8 weeks, the programme resumed.

Data Collection

The entire research project occurred over a 13-week period, (excluding school holidays and Covid-19 Level 3 and 4 lockdown in New Zealand). Data was collected at the group level of the programme for 13 weeks, over 13 sessions. All observations occurred in real time; either within the organisation's centre, a local Starbucks or a local Time Zone. I was the primary observer and I based myself discretely at the back of the classroom to ensure I did not disrupt regular classroom activities. During the outings to Starbucks and Time Zone, I positioned myself somewhere in the background where I could still hear the participants but not be intrusive.

Observational data was collected for thirteen weeks to provide a description of the programme. In the first four weeks of data collection, I conducted preliminary observations for Group 2, the case studies. One session was in March before New Zealand went into lockdown and the remaining three were after the eight-week lockdown period. The purpose of these preliminary observations was to build rapport with the students, gain a better understanding of how the programme worked, identify potential participants, and to identify potential target behaviours and refine their operational definitions. During the initial observations post lockdown, there were still Covid-19 guidelines in place regarding group gathering sizes and social distancing measures. The target behaviours I chose needed to have opportunities to occur with these guidelines in place.

Observational data was collected for the case studies over nine weeks. This began at week five of overall data collection, however, is considered week one of the case study specific data collection.

The interviews with the facilitators took place at the beginning of overall data collection post lockdown. The interviews with students and parents took place at the end of data collection. The programme facilitator provided me with outlines of previous sessions for me to view throughout the course of data collection.

Data Analysis

Previous outlines of the programme were analysed by looking for consistencies between the content, instruction, structure and the selected learning goals. This method of analysis was used because identifying consistencies, will help shape an accurate description of the format and the way the programme usually runs (Bottema-Beutel et al., 2018).

The interviews were summarised, and each participant was sent a copy of the summary where they could make any changes. The participants returned the summaries to me which I used as validation of accurate results. Inductive reasoning was used to develop

themes that emerged from the interview summaries. This method of analysis was used as the development of themes was directed by the content of the data (Clarke & Braun, 2016).

The observational data that was recorded for the case studies, was transferred onto graphs on Microsoft Excel. Descriptive statistics were used to summarise the data represented in the graphs. The means, ranges and the percentage of opportunities of correctly performed target behaviour, were calculated manually for data analysis. This method of analysis was used as there was only a small amount of data (Cooper et al., 2020).

Following these respective types of analyses, the results were synthesized to provide an accurate descriptive evaluation of the programme. This method of analysis is best used for descriptive studies as it cumulates and combines all areas of data collection (Cooper et al., 2020).

Results/Discussion

The results will be discussed by first providing a description of the programme. Following on from the description will be a discussion around the themes that emerged from the interviews. Thirdly, the individual results from the case studies will then be discussed.

Description of the Programme

Planned Sessions

The programme organiser provided me with past outlines to review, where a combination of the information extracted from these outlines, information extracted from interviews, and direct observations helped create a description of how the programme usually runs. It is clear there were two types of sessions: sessions that were aimed at developing social skills; and sessions that were aimed at developing independent living skills. The sessions that targeted social skills were centre based, whereas sessions that targeted independent living skills were centre based, as well as at times practised out in the community. Although social skills were targeted within the centre-based sessions, it can be

argued each session had a strong focus on these types of skills as they were embedded within the activities.

Format of Centre-based Sessions

Centre-based sessions followed a usual format of icebreaker, structured activities, break, unstructured activities and free time. This is a very similar format to most of the programmes described in the literature, however most of the literature did not include the unstructured section, as the session continued with the structured activities after the break (Afsharnejad et al., 2020; Gantman et al., 2012; Herbrecht et al., 2009; Laugeson et al., 2012; Rabin et al., 2018; Wyman & Claro, 2019). A likely reason for this is that in the literature most of the programmes were run for a set period, for example 14 weeks, rather than the programme involved in this research project that was continuous with no set end date. This meant that the programmes in the literature needed to teach the content within the set time period, whereas this programme had no time constraints for the content to strictly fit into. The icebreaker was used to help students remember each other's names and 'break the ice' by encouraging participation from the beginning of each session. This was shown to be an effective way to open sessions as the purpose of the icebreaker is to achieve a positive, engaging and relaxing atmosphere (Choque-Olsson et al., 2015).

The structured activities section of the programme was where the teaching occurred. The break was implemented at the halfway point of each centre-based session, where juice and biscuits were available for the students. Research showed that programmes that implemented a quick five to 10-minute half time break to allow students to rest before returning back to activities, increased student's productivity and focus on activities, as well as reduces stress (Marriage et al., 1995; Rose & Anketell, 2009).

After the break, was allocated free time for unstructured activities. This time was used for informal discussions, card games and playing board games. The purpose of this section

was for students to practice social and communication skills without directly being taught. This type of teaching is embedded within the activities, where skills such as turn taking, appropriately entering conversations and complimenting others all occur within a natural setting (Herbrecht et al., 2009). During this time, it would not only be the facilitator teaching but also peers. Research shows that peer teaching is an effective way to incidentally teach social and communication skills, as the reinforcement a person receives from peers can be highly valued (Laugeson et al., 2012). The more meaningful the reinforcement is to the individual, the more likely the reinforcement will produce behaviour change (Cooper et al., 2020).

Format of Outing Sessions

The format of the outing sessions was simple. The students would meet at the organisations centre and then walk to their destination. The students would return to the centre at the regular finishing time to ensure they were there to be picked up. The reason students met at the centre rather than at the outing destination was to keep consistency and have the opportunity to practice some target behaviours, such as crossing roads safely.

Choosing Skills

During the first session of each term, the structured activities section has been used for students to suggest topics or activities they would be interested in addressing over the term. Research suggests that when students have a say in what activities they will be learning, they will be more likely to attend sessions and participate in the activities (Choque-Olsson et al., 2016). This increases the social validity of the programme, as the activities chosen are meaningful to the students (Wyman & Claro, 2019). A previous example of an activity the students identified they wanted to do was go to the local mall and do some shopping.

Teaching Tactics

The facilitators used Behaviour Skills Training (BST) to teach the skills and behaviours within the programme. There are four steps to BST: delivering instructions, modelling the skill, rehearsing, and feedback (Cooper et al., 2020). This is an evidence-based teaching technique used to teach a variety of different skills and behaviours (Hassan et al., 2018). The first step of BST involves the facilitators providing instructions to the students on how to perform the target behaviour. The facilitators then demonstrated the target skill through in vivo modelling, which is modelling the behaviour in real time (Cooper et al., 2020). During this step, the facilitator would usually provide verbal instructions while at the same time providing visual instruction. This combination is regarded as an effective way for students to retain the information being presented (Pan-Skadden et al., 2009). The third step of BST is that students are then given the opportunity to rehearse or practise the target behaviour. This step usually began with a role play situation set up by the facilitators held within the centre. For some skills, this also leads to the skills having the opportunity to be practised in situ or in the natural environment where they are likely to be performed. This included practising out in the community at places such as a local Starbucks. Research suggests that this type of teaching, where a skill is practised within the programme and then practised in the community, is an effective way to test for generalisation of skills (DeRosier et al., 2011; Pan-Skadden et al., 2009; Wehman et al., 2014; White et al., 2019). The final step of BST is providing feedback to the student. This can be in the form of positive reinforcement for correct execution of target skills, or some form of corrective feedback for students that still require support (Pan-Skadden et al., 2009).

Although BST is the approach used to teach the skills in this programme, it is very similar to the approaches the literature has described. The majority of previous literature have stated that they have used a combination of cognitive behaviour therapy and social learning

theory to develop the teaching style of the target skills (Afsharnejad et al., 2020; Choque-Olsson et al., 2016; Choque-Olsson et al., 2015; Gantman et al., 2012; Herbrecht et al., 2009; Jonsson et al., 2016; Laugeson et al., 2012; Rabin et al., 2018; Wyman & Claro, 2019). The teaching style that is described in the literature requires the facilitators to use instructions and demonstrations of target skills, the students are then involved with role play type activities and the facilitators then provide feedback (Laugeson et al., 2012). This is a very interesting discovery that what the literature describes as social learning theory, is in fact BST.

Observed Sessions

As a result of Covid-19, a number of the sessions deviated from the regular format. The first five sessions post lockdown saw the girls and boys programmes combined, as the number of students expected to attend was low. These five sessions focussed on unstructured activities, a movie night and implemented a cooking session, as outings were still not feasible due to Covid-19.

Only three students attended in person for the first week, and one student attended via a zoom link. The zoom link was added to ensure students that may not want to attend in person due to being immunocompromised, were still able to be involved. This was a feature that would have continued to be utilised if the lockdown levels had continued to fluctuate in New Zealand, however this was not needed. Week two onwards between five and twelve students attended.

The following eight sessions the boys and girls were separated again as per the usual format, until the final session of data collection which was the outing to Time Zone. For this session, the boys and girls groups combined again. Research shows that occasionally combining the two groups is an effective way to test for generalisation across people, as this provides a chance for the students to practise skills with a different group of people (Gantman et al., 2012; Wyman & Claro, 2019).

Activity Sessions Observed

An activity session the students requested was a movie night. During this session the students raised their hands to suggest and vote on which movie to watch. This activity required a skillset from students which included focusing on the movie, staying seated and not disturbing others. These skills are known to be quite challenging for those with ASD as a common skill deficit is paying attention (Test et al., 2014). The skillset required to successfully watch a movie, can also be taught by BST. The facilitators provided instructions on appropriate behaviour and role modelled these behaviours throughout the movie. The students then practised these skills throughout the session. The facilitators provided feedback at the end of the session in the form of positive reinforcement, as well as providing corrective feedback throughout the session to individual students if needed, such as verbal or visual prompts to stop talking.

During observations, there were two separate cooking activities that were targeted to increase independent living skills. As the organisation had access to a kitchen, cooking was a skill that was regularly targeted within the programme. Cooking is regarded as a critical skill for developing independence (Howlin, 2000) and is one that is easily implemented within the organisation. Weeks three and nine required a preparation session for cooking, where the facilitators encouraged participation from the students by asking questions around what they would like to cook, making a shopping list and budgeting ingredients. The students were encouraged to raise their hand if they had suggestions. Prior to these sessions, email correspondence was made to the parents requiring students to bring along $5 to be collected for the ingredients that would be used in the following weeks cooking session. The preparation sessions were also used for reminding students about hand hygiene and safety practises such as wearing oven mitts. These were skills that had previously been targeted

within the programme therefore were not taught in depth. The facilitators made it clear that if the current or new students had any questions, they were welcome to ask.

The following week after the preparation session was the cooking session which occurred in weeks four and ten of data collection. The facilitators purchased the ingredients from the list the students created. Students were encouraged to choose a role in the preparation of the ingredients or were delegated one. Most students were active participants in this activity. Some students were more capable than others completing tasks specific to cooking. The facilitators followed the BST steps for students who needed instructions and assistance for skills such as chopping vegetables. For other students, verbal instructions or verbal prompts were used as there was evidence the skills had already been targeted in previous sessions or in other settings. Therefore, these students only required the instruction, practise and feedback steps of BST, and did not require the demonstration step.

Furthermore, another activity-based session that took place during data collection was an outing to Starbucks. The preparation session comprised of using BST to teach the 13 target behaviours identified as all contributing to a successful Starbucks outing. After the facilitators provided instructions and demonstrated the behaviours, they then set up a fake scenario of a Starbucks and students were encouraged to participate in a role play type exercise. Individual results regarding Starbucks specific behaviours will be discussed further in the case studies.

During the community outing, the facilitators were there to provide feedback where necessary, in the form of positive reinforcement, prompting or corrective feedback. Each student required a different level of support, further adding to the notion of the programme being individualised. Some students executed the majority of the skillset with ease, while others needed individualised support from the facilitators. An example of this is some students required support when paying using their eftpos card, whereas others did not. There

is evidence all students learnt at least some of the target skills, as all students successfully purchased a drink.

The final outing observed was in week 13 of data collection and was to Time Zone. The preparation session for this outing in week 12, included reminding students of two behaviours that were targeted within the Starbucks preparation session which were footpath courtesy and crossing roads safely. This was an opportunity for students to execute skills taught in previous sessions and test for generalisation and maintenance. There was minimal teaching during the preparation session for Time Zone, rather there were only reminders and an opportunity for students to ask questions. This was due to a combination of a portion of the skills had been targeted previously in the programme such as using an eftpos card, and the students expressed confidence in their individual ability to execute behaviours required for a successful outing.

The outing again showed the differences in the amount of individual support each student required. Some students required support with how to play some of the games whereas others were able to read and follow the instructions provided. At times, it would not be possible to use the full set of BST steps to teach a student the skills to successfully play a game, as the games cost money and only have a certain amount of turns until more money needs to be put in. This is where clear verbal instructions and gestural prompts were observed to be performed by the facilitators.

Social Skills Sessions

According to previous outlines of the sessions, social skills are targeted more frequently within the content of the programme, however this was not observed during my data collection. This was a result of Covid-19 which affected the numbers attending each week and the uncertainty of whether sessions would be targeting males only, or males and females. As some of the students have been attending for many years, keeping the content

fresh and meaningful is a challenge for the programme organisers. It was observed during the early sessions after lockdown, the students that were attending were the students that have been attending the programme for at least a year. However, the programme organisers used this to their advantage by asking what activities the students would like to do within the centre to maintain attendance with meaningful activities. One of the students voiced at the beginning of data collection that "it doesn't matter what we do, I just like coming every week and seeing my friends and chatting to them". This further supports the social validity of the programme in that students enjoy the programme and are gaining meaningful social experiences (Wehman et al., 2014).

Themes

The interview scripts were read iteratively, and conceptual codes were generated. There were several themes that emerged from the qualitative data.

Feeling safe and comfortable within the group setting

This theme emerged from the interviews with the mothers of the students and the facilitators of the programme. This came up as a theme in relation to both the aim of the programme and why parents like it. An overall aim of the programme is to provide a safe environment where students feel comfortable to express themselves and learn new skills without fear of judgement. Young adults with ASD often have increased anxiety if they are put into new situations or around new people (Bellini & Peters, 2008). This decreases the likelihood of trying new skills, as well as increasing the need for parental support (Bellini & Peters, 2008; Peters & Brooks, 2016). Ted's mum stated, "It's a safe environment to socialise in to work towards them being able to socialise more on their own". Roger's mum stated that "the instructors are always so welcoming and friendly". This shows parents are assured that the programme provides a safe environment. Parents also found their sons responded better to the programme than they did to parents or teachers at school. The facilitators also serve as a

safety net if the students find skills challenging, especially out in the community. As Roger's mum also stated, "The familiarity of the group … helps when they go out in the community". The facilitators are there to provide encouragement and prompts in order for skills to develop within the centre-based sessions as well as in the community. Ben (student) stated "they (the students and facilitators of the programme) are like my second family", showing the programme has delivered a comfortable atmosphere. Youth with ASD often know they are different to others and aspire to be more like their typically developing peers (K. Anderson et al., 2018; Sosnowy et al., 2018), therefore by providing a safe environment with like-minded individuals, a more comfortable atmosphere to engage in social activities can be promoted.

Confidence of students

Increasing the confidence of students emerged as a theme and relates to the aim and outcomes of the programme. The programme aims to increase the confidence of this cohort to perform the skills learnt in the programme in other areas of their lives. Performing skills learnt within the programme in other settings and at different times, increases the generalisability of the skills therefore increases the external validity of the programme. As Roger's mum stated "when they (the group) go out into the community, it helps build the confidence for them to be able to do it themselves", referring to students performing the skills in the community without the support of the facilitators or their parents. Confidence also emerged as something students were specifically seeking from the programme and were noticing a difference. As Ben stated "I just want to raise my self-confidence because that was shattered", and as Roger stated "I think I have more confidence now, I feel happier and I feel like I am able to do some things now, like go to the shops or talk to someone". Parents also noticed differences in their child's behaviour as Ben's mum reported "(the programme) has increased his self-confidence and is teaching him that just because he has a disability doesn't mean he can't do it".

Increasing social skills

Increasing social skills emerged as a theme and relates to the purpose and overall aim of the programme as well as the outcomes. Ted's mother states the programme "provides a social hub for young people with ASD", where they can learn, develop and practise the social skills needed to be able to understand and comprehend social situations. Social skills are often intertwined with communication skills as they often occur simultaneously (Bellini & Peters, 2008; Choque-Olsson et al., 2016). The teaching of social skills does not necessarily have to be structured teaching but can be integrated into activities. The structured teaching can involve role play or the facilitator showing or explaining the skill then allowing the student to have a turn. Due to skills not always being taught within structured teaching situations, student participants often found it difficult to describe skills in this area for example Ted stated "it's difficult to explain but I know I am learning things as social situations are easier for me", as well as Roger stated "it's a bit hard to explain but I know I have learnt heaps, maybe like talking to each other". Students were still aware they were learning some skills without being able to articulate it.

Individual goals

This theme emerged from the interviews regarding the programme being individually relevant to each participant's goals and needs. Although this programme has overall aims, it tailors it's teaching to each individual's needs as well. The programme aims to teach skills in a group setting and then offers extra individual support to those that need it. As Roger's mother stated, "Sometimes they will notice things that may be lacking (for each individual)… and I think tailor what they do and say so they are benefitting from it (the programme)".

At the beginning of each term the facilitators allocate time for the group to discuss goals or activities they would like to work on throughout the term. It gives students a chance

to be able to voice their personal goals so that they can be worked into the activities for the term. Therefore, the programme addresses the individuals' wants as well as their needs.

Practical skills taught in the programme

Practical skills taught in this programme can also be described as independent living skills. These skills are seen to be important and useful for this population as they transition into adulthood. Roger's mother stated "the programme helps develop skills that will be useful in everyday life… going to café and ordering a coffee and standing in the right place, how to have a meal in a restaurant, how to cook" but not limited to these examples. Both the centre base and community sessions were discussed to teach the necessary skills as Roger's mother also stated, which included "about money and how to look after your money, dealing with the checkout operator…budgeting, cooking, all different things that are useful to growing up and being independent". The centre-based cooking sessions and the Starbucks session were discussed on multiple occasions, around the different skills that typically developing people take for granted however are required to successfully execute these actions.

Barriers

The final theme that emerged was barriers to accessing the programme and the impact this may have on the group. There were several barriers identified, with cost being the most significant one. Ben's mother for instance had to withdraw Ben out of the programme as she reported it was too expensive. For some, the weekly cost can be too high to attend every week, so they choose to attend only a few sessions each term. An attempt to address this barrier was a strategy of using a concession card. A parent or a student can pre purchase a term's worth of sessions and get one session free. This serves as an incentive to save money, as well as help the facilitators to plan the term ahead with a rough estimate of numbers attending. The programme does not receive any funding and the cost cannot be lowered, as

historically according to the facilitators and the programme organiser, the current price does not cover the costs to run the programme.

Another barrier identified was the lack of advertising for the programme, most had not seen any type of advertising. Parents had all been referred to by other agencies such as AutismNZ or the local high school. Barriers to accessing the programme lead to the consequence of youth missing out on developing much needed skills. There is also a negative effect on the youth that are attending as they miss out on developing new friendships with likeminded individuals.

Case Studies

Case Study 1

Roger attended all preliminary observation sessions, and nine out of nine data collection sessions for the case studies. Figure 1 shows the difference in target behaviours performed between the centre-based practise session and the community session at a local Starbucks. Figure 1 shows that Roger increased target behaviours performed without a prompt from 31% in the practise session, to 48.5% in the community outing to Starbucks. Results show Roger decreased target behaviours performed with a prompt from 43% to 34.5%. Figure 1 also shows that Roger decreased the amount of behaviours not performed from 26% during the practise session, to 17% at Starbucks. The inter-observer agreement was 95% for this participant.

Figure 1.

Percentage of Roger's target behaviour performed no prompt (BPNP), with a prompt (BPWP) and target behaviour not performed (NP) at a practise session and at Starbucks.

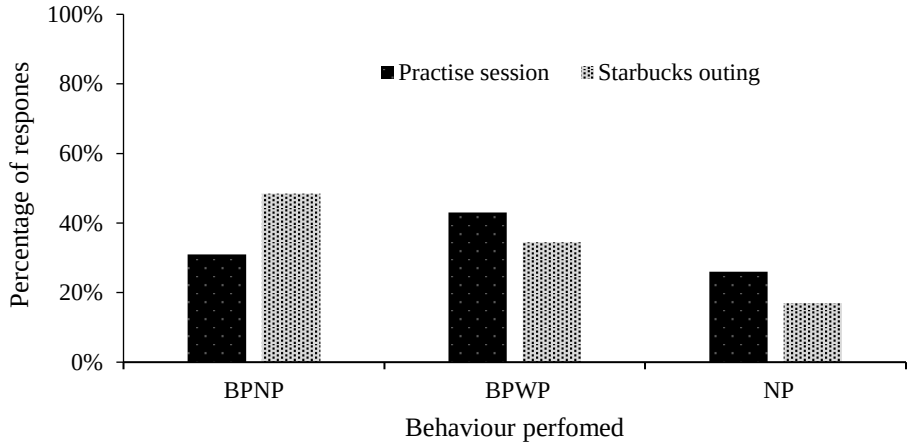
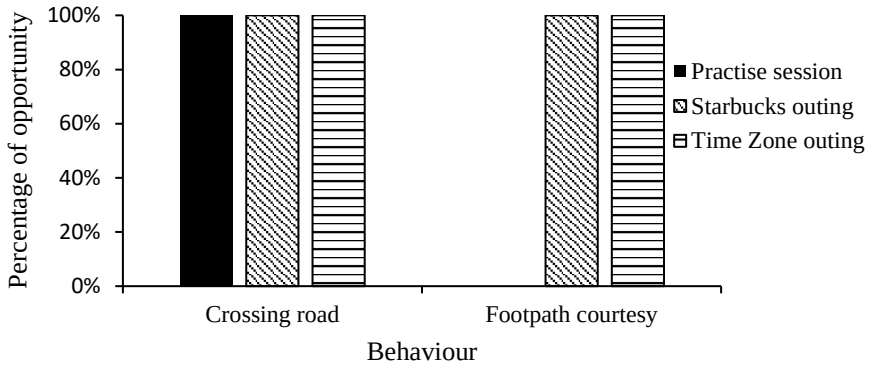


Figure 1 shows that after the practise session, Roger was able to perform more target behaviours in the community Starbucks outing without needing to be prompted by the facilitators. Figure 1 also shows that Roger decreased the amount of target behaviours that were not performed. In other words, this can be seen as increasing the amount of target behaviours performed. These results show that the skills taught in the practise session were transferred and generalised to occur in a real life setting, relating to the aims and outcome of the programme (DeRosier et al., 2011). Some behaviours Roger was able to execute without a prompt were greeting the counter staff and receiving drink when name is called. Behaviours that required a prompt included paying correctly and ordering the correct drink. A target behaviour Roger was observed to not perform was saying thank you.

Figure 2.

Graph showing the percentage of opportunity for Roger to perform the target behaviours correctly.



Note. The target behaviours were crossing a road safely and practising footpath courtesy were both scored if Roger performed behaviour without a prompt during the practise Starbucks session, the Starbucks outing and the Time Zone outing.

Figure 2 shows the percentage of opportunity Roger performed correctly for the behaviours crossing a road safely and footpath courtesy during the practise session for Starbucks, the Starbucks outing and the Time Zone outing. Figure 2 shows Roger performed the target behaviour of crossing the road safely at every opportunity without a prompt during each session.

For the target behaviour of footpath courtesy, Roger did not perform this behaviour during the practise session without a prompt. Roger did however perform the behaviour at 100% of the opportunities during the Starbucks outing and the Time Zone outing (as shown in Figure 2).

These two behaviours were targeted in the practise session for Starbucks and tested for maintenance and generalisation in the session that occurred in Time Zone. Both behaviours have been shown to occur in the two outing sessions, showing that the behaviours have generalised to other settings and maintained over time (DeRosier et al., 2011).

Figure 3.

Frequency of Roger performing target behaviours during in house programme sessions and showing percentage of opportunity performed correctly for participating in a group activity.

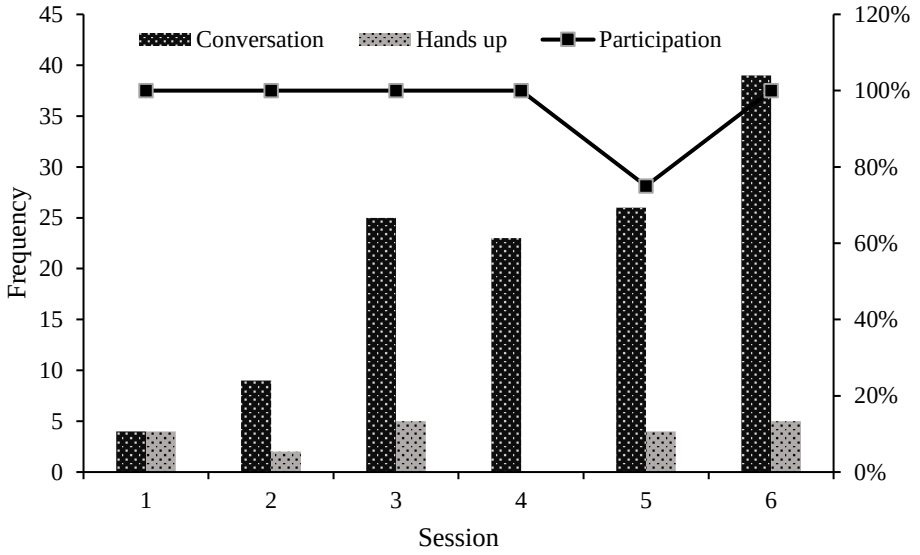


Figure 3 shows the frequency of two target behaviours that Roger performed over six sessions. Entering a conversation appropriately ranged from four to 39 times a session (*M* = 21). Raising hands ranged from zero to five times per session (*M* = 3.3). The percentage of opportunities for participating in a group activity is shown by Figure 3, which was 100% for all sessions excluding session five where Roger only participated in 75% of the group activities offered.

During the observations Roger was observed to enter conversations appropriately at most opportunities. Session one where Roger only displayed this behaviour four times was appropriate as this was the movie night. It would have been undesirable for Roger to display this target behaviour more frequently in this environment, as he would have been disrupting others. Sessions three through to six showed Roger was entering a conversation appropriately between 23 and 39 times each session. This shows Roger consistently performed the target behaviour each session. Roger's mum also discussed during her interview that she was hoping for Roger to make friends and be able to communicate easily with his peers. As Roger displayed this skill on most occasions, this can increase the likelihood that his peers will respond positively towards him (Test et al., 2014). This target behaviour was observed to

lead to Roger holding a conversation for 10 minutes or more on multiple occasions. A future study could look at measuring positive social interactions from a peer perspective.

Roger was observed to raise his hand at almost every opportunity with an average of 3.3 times per session. Roger did not raise his hand during session four as this was the cooking session, where there were no opportunities for the target behaviour to occur. There were only a small number of occasions when Roger did not perform the target behaviour and interrupted someone. He was observed to apologise immediately after each time this occurred, showing he is aware that this behaviour is deemed unacceptable (Chen et al., 2015).

Roger was observed to participate in most activities that took place. As Roger struggles with reading and writing, he was observed to find some of the activities challenging during session five such as hangman and Uno. The facilitators supported Roger to participate in these games by sitting next to him and providing instructions and prompts where necessary. For example, in session four during a game of Pictionary, Roger was supported to read what the card said, and he drew the image on the whiteboard. Roger was observed to become more independent with his playing skills the more turns he had. This is shown in session five where Roger chose not to participate in some of the activities however in session six participated in all activities with support from the facilitators. This also showed Roger required more support than others in the group during activities. This supports the theme individualisation, as the programme is required to tailor the teaching to support the individual's needs.

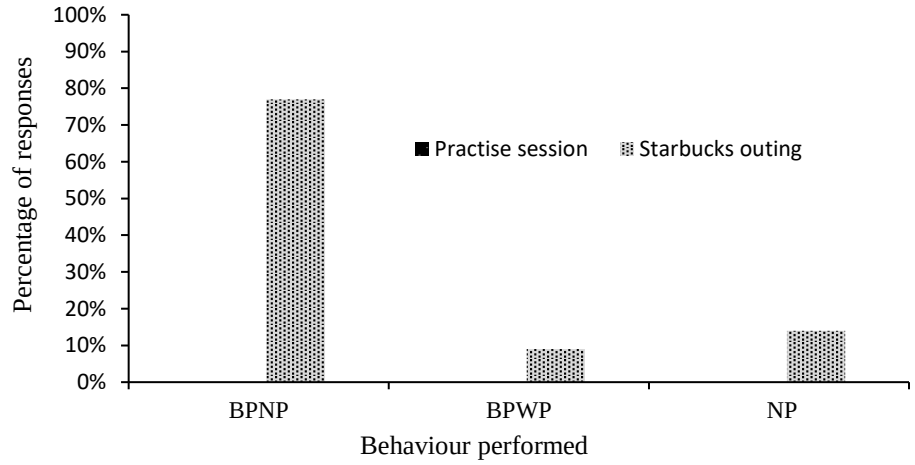
Case Study 2

Ben attended all preliminary observation sessions, and four out of nine data collection sessions for the case studies. Figure 4 shows the difference in target behaviours performed between a practise session that occurred within the centre and then tested in the community at a local Starbucks. Figure 4 shows that Ben was present for the practice session however

chose not to participate. Figure 4 also shows that during the community outing to Starbucks, Ben scored 77% for target behaviours performed no prompt, 9% target behaviour performed with a prompt and 14% behaviour not performed. The inter-observer agreement for Ben was 100%.

Figure 4.

Ben's percentage of responses of target behaviours performed without a prompt (BPNP), with a prompt (BPWP) and target behaviour not performed (NP) at a practise session and at Starbucks.



Note. Ben was present for the practise session however chose not to participate.

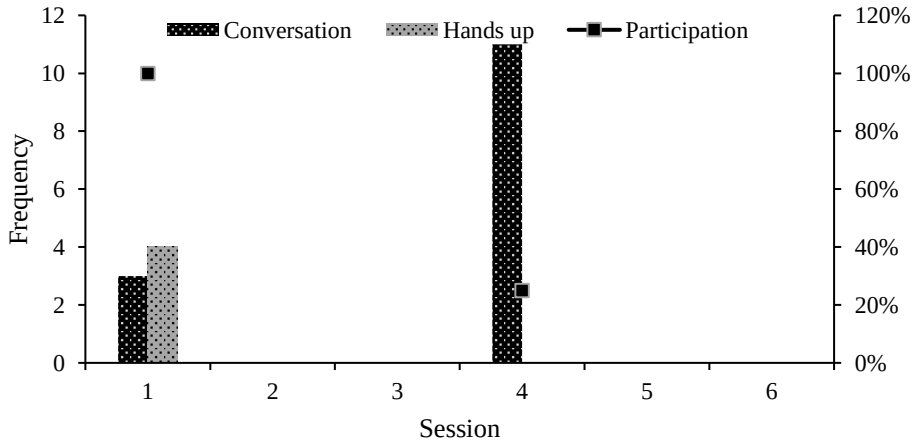
The results show that Ben performed the majority of the target behaviours without a prompt in the community session to Starbucks. This shows Ben was able to execute most of the target behaviours without the need for the practise session. This also shows that Ben's needs from the programme are different to other students. Ben has shown he is quite capable when put in a situation targeting independent living skills. This again supports the need for tailoring the teaching to each individual.

Throughout the outing, Ben required almost no assistance from facilitators. Ben was able to independently cross roads safely, identify the correct counter, order his drink and pay

correctly without any support from the facilitator. The behaviours Ben did not perform were moving out of the way for others, identifying the correct table to sit at and saying the correct name for the order. Ben said the name "karma" for his order instead of his actual name. Although the outcome was still achieved, the target behaviour was not met as it was not his correct name. Ben displayed a skill that was not expected to occur, humour. It can be argued that when one feels confident enough in a certain skill, then they can also feel relaxed enough to display a skill such as humour (DeRosier et al., 2011). Ben has shown that his needs are heavily focussed on his social skills and help ensuring that he demonstrates socially appropriate behaviours, as opposed to independent living skills.

Figure 5.

Frequency of Ben performing target behaviours during centre-based programme sessions and showing percentage of opportunities performed correctly for participating in a group activity.



Note. Ben was absent for sessions 2 and 3. Ben withdrew from the programme after session 4.

Figure 5 shows the frequency each target behaviour was performed over six sessions. Ben was only present for two of the six sessions. Entering a conversation appropriately ranged from three to 11 times per session (M = 7). Raising hands ranged from zero to four per

session (M = 2). Percentage of opportunity performed correctly for participating in a group activity occurred for 100% for session 1 which was the movie session, and at 25% for session 4 which was the cooking session.

Session one was the movie night, where there was only one opportunity to participate in a group activity. Ben appropriately entered three conversations which is a reasonable amount for that session, as most of the session was taken up by the movie. Ben raised his hand at every opportunity in session one, which occurred when he suggested a movie and was voting for a movie. Ben was observed to spend around half of the movie on his phone and at one point attempted to disturb another student by talking to them while they were watching the movie.

Although Ben was observed to be on his phone during a large portion of the movie, this can be seen as an improvement. Ben attempted to disturb someone once during the session and for the remainder of the session stayed in the room quietly. Ben did not leave and was watching the movie at different stages; therefore, it can be argued he was participating as he was present and produced minimal disruptions. What emerged from the interviews that both Ben and his mother discussed, was that Ben was on his phone all the time and needed to find activities that do not involve his phone. Therefore, although Ben's engagement may be considered low, it can be seen as an improvement according to discussions from the interviews.

Session five was the centre-based cooking session. Again, from observations and the results shown in Figure 5, Ben's participation in this activity was low. Emerging from the interviews again, both Ben and his mother discussed how he often cooks at home and is quite familiar with following recipes. As Ben is very familiar with cooking, he chose not to participate in most of this session. This shows he was capable of the tasks involved in this session, further demonstrating that his needs do not lie with independent living skills but

more towards social skills. This again highlights the need for the programme to tailor to the individuals needs. Ben was observed to participate in a card game towards the end of the session.

Ben was also observed to enter a conversation appropriately 11 times throughout this session. This is lower than the other participants but is likely to be a result of not participating in as many activities.

Ben withdrew from the programme after session 4 as it was too expensive. This relates to theme of barriers to accessing the programme and further demonstrates that cost can cause students to not participate.

Case Study 3

Ted attended all preliminary observation sessions, and nine out of nine data collection sessions for the case studies. Figure 6 shows the difference in target behaviours performed between a practise session that occurred within the centre and at a local Starbucks. The behaviours were scored if they occurred with no prompt, with a prompt or not performed at all. Figure 6 shows that Ted increased target behaviours performed no prompt from 62% in the practise session, to 78.5% in the community outing to Starbucks. Figure 6 also shows that Ted decreased the amount of behaviours not performed from 12% during the practise session, to 10% at Starbucks. The inter-observer agreement was 93.5% for Ted.

Figure 6.

Ted's percentage of target behaviour performed without a prompt (BPNP), with a prompt (BPWP) and target behaviour not performed (NP) at a practise run and at Starbucks.

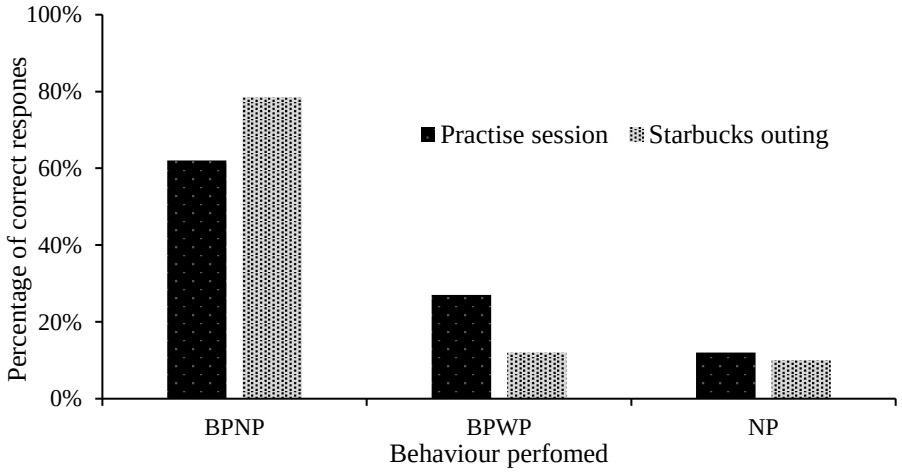
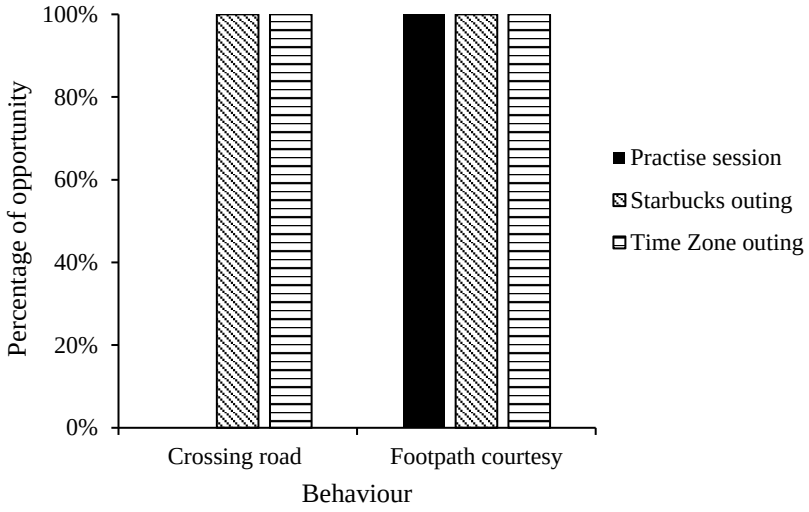


Figure 6 shows that after the practise session, Ted was able to perform more target behaviours in the community Starbucks outing, without needing to be prompted by the facilitators. Figure 6 also shows that Ted decreased the amount of target behaviours that were not performed. Like Roger, this can be seen as Ted increasing the amount of target behaviours performed. Ted was able to perform the target behaviour of greeting counter staff and ordering correct drink without any prompts. Ted needed a prompt identifying the correct counter in order to perform the target behaviour. Ted also did not perform the target behaviour of saying thank you.

Figure 7.

Graph showing the percentage of opportunity for Ted to perform the target behaviours correctly.



Note. The target behaviours were crossing a road safely and practising footpath courtesy were both scored if Ted performed behaviour without a prompt during the practise Starbucks session, the Starbucks outing and the Time Zone outing.

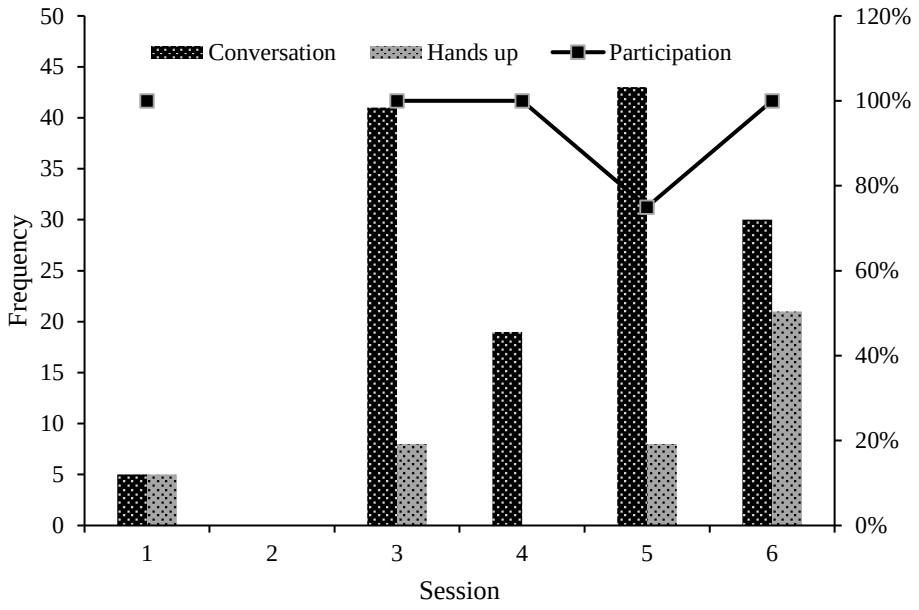
Figure 7 shows the percentage of opportunity Ted had for crossing a road safely and moving out of the way for others at the practise session for Starbucks, the Starbucks outing and during the Time Zone outing. Figure 7 shows Ted performed the target behaviour of footpath courtesy at every opportunity without a prompt during each session.

For the target behaviour of crossing a road safely, Ted did not perform this behaviour during the practise session without a prompt. Ted did however perform this behaviour at 100% of the opportunities during the Starbucks outing and the Time Zone outing (as shown in Figure 2).

These two behaviours were targeted in the practise session for Starbucks and tested for maintenance and generalisation in the session that occurred in Time Zone. Both behaviours have been shown to occur in the two outing sessions, therefore concluding the behaviours have been generalised to other settings.

Figure 8.

Frequency of Ted performing target behaviours during centre-based sessions and showing percentage of opportunity performed correctly for participation in a group activity.



Note. Ted was absent for session 2.

Figure 8 shows the frequency of each target behaviour that Ted performed over six sessions. Ted was absent for session two. Entering a conversation appropriately ranged from five to 43 times a session (M = 21). Raising hands ranged from zero to twenty-one times per session (M = 8.4). Participating in an activity occurred at 100% for all session apart from session five where Ted only participated in 75% of group activities.

Ted consistently showed that he can enter conversations appropriately over the five sessions he was present for. Session six showed Ted raised his hand 21 times which is significantly higher when compared with the other sessions. This was due to the fact the game hangman was played many times during session six, which Ted was observed to have many turns. Session four was the same as Roger and Ben, where there were no opportunities for the target behaviour of raising a hand to be performed. Session four also shows a low score of 19 for entering a conversation appropriately. This is due to Ted having two

conversations that lasted over 15 minutes. Therefore, although Ted arguably had less opportunity to perform this target behaviour as far as time is concerned, he displayed excellent communication and social skills by being able to hold multiple conversations for a lengthy period of time.

Social Validity

Throughout the outing to Starbucks, Roger was observed to smile, chat amongst the group and stated "I like my coffee drink". Roger also stated in his interview, "I really enjoyed doing something different when we went to Starbucks and I really want to go back there again, next time I will order sugar in my coffee." Ben and Ted were both also observed to smile and be involved in many conversations during the outing to Starbucks. Ted was involved in conversations around what drink he would pick next time and if he would try something different. Engaging in conversation around what would they were to do if they were able to go to Starbucks again, shows that this was a meaningful activity to Roger and Ted and one they are likely to do again. This shows that the skills that are taught in the programme, the students find enjoyable and will likely use in the future. The qualitative data also supports the social validity of the programme as both the students and their mothers spoke positively about the skills that were taught were useful. (Baker-Ericzén et al., 2018).

Two of the case studies have also been attending the programme for a long period of time. Roger has been attending the programme for around four years and Ted has been attending for around six years. Both students have progressed into this programme when they turned 16, from the programme aimed at younger teenagers. The length of period both students have been attending the programme shows the students and parents are satisfied with the programme, supporting the social validity.

At the group level, the group activities had a very successful retention rate which support the social validity of the programme. For both the cooking sessions, 100% of the

students who attended the preparation session, also attended the cooking session. 86% of the students who attended the Starbucks preparation session, also attended the Starbucks community outing. 100% of the students who attended the Time Zone preparation session, also attended the Time Zone outing. This shows that the content is meaningful and the students are enjoying the programme, as the students continue to turn up each week.

Limitations

A significant limitation to this study was the lockdown imposed by the New Zealand government as a response to the global Covid-19 pandemic. The very beginning of the research project was when the world began responding in various ways to the pandemic, such as stay at home if you have been in contact with an overseas traveller. This caused massive disruption in New Zealand which resulted in some students not attending the programme leading to small numbers. The lockdown was imposed which resulted in an immediate cessation of the programme until further notice. After eight weeks of lockdown, the classes resumed with new measures put in place such as masks encouraged, social distancing and strictly no entry if you are unwell. Numbers were low for the first few weeks as people adapted to this new way of living. This was cause for concern as I was recruiting participants at the time. There were discussions about offering to zoom into sessions each week if numbers continued to be low, however this only occurred once during preliminary observations.

Another limitation occurred when I was choosing the target behaviours to observe during the research project. The behaviours I chose had to be suitable to the social distancing rules, as well be applicable if students were going to be zooming in. This limited the type of behaviours deemed appropriate. There was also the possibility of students being more aware of their behaviour due to me being around and therefore modifying their usual behaviour.

As a result of the lockdown, the time schedule to conduct the project was reduced. This meant there was a very limited amount of time to conduct all observations. There was also the possibility of New Zealand returning to a state of lockdown if the pandemic worsened in New Zealand. This uncertainty caused the project to be pushed along without allowing sufficient time to conduct preliminary observations, as well as not allowing time for the programme to return to normal proceedings.

A few things that should be considered if this study is to be replicated in future. An alternative and possibly superior measure of 'on task' or engagement would have been momentary time sampling.

On the second outing to Time Zone, I should have collected frequency data for the target behaviours for one of the participants. Although it would be ideal to have frequency data collected on all three participants, it would be impossible due to many factors including the room was too large to be able to see all three students at once and collect data, as well as the noise levels being too high to be able to hear the participants easily. It would be achievable to collect data if only one student was being observed.

Inter-observer agreement was only collected for the Starbucks practise session and outing. Although this was two sessions and equalled 22% of total observations which is an acceptable amount, I would have ideally liked to have had a range of sessions with a second observer. Ideally this would have been a centre based session collecting quantitative data on the three target behaviours: hands up, entering a conversation and participating in a group activity. The reason this did not happen is due to the second observer being sick or on leave or I did not organise the second observer in time.

Conclusion

Using a mixed methods design, I have described and evaluated a programme's effectiveness in teaching social skills to males aged between 16 and 24 with ASD with or

without a comorbid ID. Using a combination of direct observations, collecting quantitative data on specific skills targeted within the programme, and interviews, I have successfully developed a descriptive evaluation of this programme. A lack of social skills has been recognized as being the biggest contributing factor to an array of negative impacts in this population, which suggests a need for such programmes (DeRosier et al., 2011).

The three case studies showed the range of level of competency that the programme can expect to cater for. Although some behaviours were targeted specifically within the programme, I can only draw the conclusion that there is a correlation that the programme supports positive behaviour change, rather than a causation. This descriptive study suggests that this programme is beneficial, however only an experimental study could show that documented improvements are caused by the programme. The results do show that two of the students showed an improvement in target skills and that the skills were generalisable to other, more natural settings in the community. One student showed he was competent in independent living skills but still showed an improvement in social skills which the qualitative data supported. Themes derived from the qualitative data and the participation rates, show the high social validity of the programme.

Overall, the results of this study indicate that the programme is associated with improving social skills in young adults with level 1 ASD with or without comorbid ID. The goals and the content are meaningful to the students and their mothers, and the programme is acceptable and appropriate. This descriptive study documented the content and likely outcomes of a promising programme and laid the groundwork for further, more rigorous evaluations.

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Appendix A
Staff interview Script

What is the aim of the programme?

- Probes
    - How are the skills chosen to teach in Youth+?
    - What is the entry criteria?
    - When does a student leave the programme?

_____
_____
_____

Can you describe the programme?

- Probes
    - What sorts of skills are taught?
    - How are these skills taught?
    - Any examples?
    - Do you measure changes in behaviour? If so, how?

_____
_____
_____

Is the programme working?

- Probes
    - Why do you say that?
    - Anything specific about…?
    - What do you think the participants like about Youth+?
    - What do the parents say about Youth+?
    - Can you describe any barriers to those needing to access such a programme?

_____
_____
_____

Appendix B
Interview script for parents/caregivers

Why did you choose Youth+?

- Probes
    - How did you hear about Youth+?
    - What do you like about Youth+?
    - What would you change about Youth+?

_____
_____
_____

What is taught in Youth+?

- Probes
    - What specific skills do you think are taught in Youth+?
    - Have you noticed an increase in (target behaviour)?
    - Do you think these skills are worthwhile to teach? Why?
    - What skills would you like to see taught in Youth+? Why?

_____
_____
_____

Has Youth+ made a difference in your life?

- Probes
    - What differences have you noticed in your child's behaviour?
    - What are the benefits from your child attending Youth+?
    - How has Youth+ impacted your life?

_____
_____
_____

Appendix C

Interview script for students.

What do you do at Youth+?

- Probes
    - What sorts of things have you been learning?
    - How do you learn those things? e.g. books, staff show you, videos
    - What do you want to learn?
    - Have you learnt anything at Youth+? Is yes, what?

_____
_____
_____

Do you like Youth+?

- Probes
    - If yes - What do you like about Youth+?
    - If no - What do you NOT like about Youth+?
    - What would you change about Youth+?

_____
_____
_____

Has anything changed for you since coming to Youth+?

- Probes
    - Have you noticed a difference in (target behaviour)?
    - Do you use some new skills (target behaviour) in other places? Where? Tell me about it?
    - Tell me about your friends. Are they new friends?
    - How have you changed?

Appendix D

Event recording form

Participant:

Date:

Observer:

Behaviour:

Instructions: Mark each time the behaviour occurs

Time	Tally	Total

Appendix E

Data Collection Sheet – Samples

Momentary Time Sampling Record Sheet

Date: _____

Student: _____

Start time: _____ End Time: _____

Location: _____

Definitions

Interval time: 15 seconds

Behaviour:

AEB = Actively Engaged Behaviour

(AEB will be defined with staff support but likely definition will be):

- Being actively involved in or attending to; staff instruction, staff instructed independent or group activity; and/or participating in task-related vocalisations with peers or staff.

Tick [✓] if behaviour is observed at interval. Dash [-] if behaviour is not observed at interval.

Interval	1	2	3	4	5	6	7	8	9
Behaviour observed									

Interval	10	11	12	13	14	15	16	17	18
Behaviour observed									

Interval	19	20	21	22	23	24	25	26	27
Behaviour observed									

Interval	28	29	30	31	32	33	34	35	36
Behaviour observed									

Interval	37	38	39	40	41	42	43	44	45
Behaviour									

observed									

Interval	46	47	48	49	50	51	52	53	54
Behaviour observed									

Date: _____ Student:

_____

Interval	55	56	57	58	59	60	61	62	63
Behaviour observed									

Interval	64	65	66	67	68	69	70	71	72
Behaviour observed									

Interval	73	74	75	76	77	78	79	80	81
Behaviour observed									

Interval	82	83	84	85	86	87	88	89	90
Behaviour observed									

Interval	91	92	93	94	95	96	97	98	99
Behaviour observed									

Interval	100	102	103	104	105	106	107	108	109
Behaviour observed									

Interval	110	111	112	113	114	115	116	117	118
Behaviour observed									

Interval	119	120	121	122	123	124	125	126	127
Behaviour observed									

Interval	128	129	130	131	132	133	134	135	136
Behaviour observed									

Interval	137	138	139	140	141	142	143	144	145
Behaviour observed									

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Appendix F
Information sheet – Staff

Dear Staff

You are invited to participate in a research project conducted by myself, Moana Billot, under the supervision of Associate Professor Angelika Anderson from the Faculty of Social Science at the University of Waikato. This project is part of the requirement for the completion of my Master of Applied Psychology in Behaviour Analysis at the University of Waikato. Please read this information sheet in full before deciding if you will participate. If you would like further information about the project, please contact myself or Associate Professor Anderson via the contact details above.

The topic of the research
This research project has been designed to describe and evaluate an existing programme run for youth with Level 1 or 2 autism spectrum disorder. By showing evidence of the effectiveness of the program this could lead to further dissemination and help create an argument for resourcing and funding such a program.

What's involved
We are looking to recruit between three and five students and their parents that are currently accessing the program Youth+. We are also looking to recruit between one and three of the staff members that currently implement the program Youth+. Anyone without consent to participate will be excluded from data collection. All participants will be interviewed and observed during the normal programme hours and activities.

Your involvement
I will arrange a time with you to be interviewed at the beginning of the research. The interview will be based on why you think Youth+ is important and what techniques are used to develop student's skills.

Throughout the study, I will engage in frequent, non-obtrusive observations of you. No personal or identifying data will be recorded on anyone. I will be observing different types of prompting that are used within the programme.

Results
It is hoped the results will provide evidence regarding the effectiveness of the programme and inform the future development of such programmes. Results will be presented within my

master's thesis. It is also possible that the results will be published in a journal article and /or presented at a conference. A summary of the results can be forwarded to you on request, as can a copy of any published journal articles. Please contact the researchers or your Enrich+ if you would like to see a copy of the results.

Confidentiality
Although your name will be known to me, no other personal data will be collected or recorded. Participation in this project will remain confidential and no identifying information will be disclosed to anyone outside of the study. Codes and pseudonyms will be assigned to all participants and used in any reports. The participants will not be identifiable in the presentation of any results.

Storage of data
On completion of my thesis all data will be given to my supervisor, Associate Professor Angelika Anderson, to be stored on a password protected university drive for five years. Only Associate Professor Anderson and I will have access to the data at any time. After five years the data will be destroyed by deleting the electronic files.

Right to withdraw
Participation in this project is voluntary and you are under no obligation to give consent to participate.

All participants have the right to withdraw from the project at any time, for any reason, and with no consequence.

What happens now?
If you are happy to participate in this project, please complete the consent form and return it to myself. If you have any questions regarding the project, please contact me on the details at the top of this form.

Yours sincerely,

Moana Billot

This research project has been approved by the Human Research Ethics Committee of the School of Psychology. Any questions about the ethical conduct of this research may be sent to the Secretary of the Committee, email ethics@waikato.ac.nz, postal address, School of Psychology, Faculty of Arts and Social Sciences, Te Kura Kete Aronui, University of Waikato, Te Whare Wananga o Waikato, Private Bag 3105, Hamilton 3204.

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Appendix G
Information sheet – Parents

Dear Parents/Guardians,

You are invited to participate in a research project conducted by myself, Moana Billot, under the supervision of Associate Professor Angelika Anderson from the Faculty of Social Science at the University of Waikato. This project is part of the requirement for the completion of my Master of Applied Psychology in Behaviour Analysis at the University of Waikato. Please read this information sheet in full before deciding if you will participate. If you would like further information about the project, please contact myself or Associate Professor Anderson via the contact details above.

The topic of the research
This research project has been designed to describe and evaluate an existing program run for youth with Level 1 or 2 ASD. Evidence of the effectiveness of the program could lead to further dissemination and help create an argument for resourcing and funding such a program.

What's involved
We are looking to recruit between three and five students who are currently accessing the program Youth+ programme, and their parents. Anyone without consent to participate will be excluded from data collection.

Your involvement
I will arrange a time with you to be interviewed at the end of the research. The interview will be based on your expectations from Youth+ and any impacts the programme has had on your child's behaviour.

Student involvement
Your child will also be interviewed at the end of the research. The interview will be based around their expectations from Youth+, what they are learning and why they believe it is important and what they like about Youth+. The student will also be observed and data collected on specific target behaviours. These behaviours will be those targeted by the programme. Throughout the study, I will engage in frequent, non-obtrusive observations of the students that have given consent. No personal or identifying data will be recorded on any student. I will be observing instances of appropriate behaviour such as initiating conversations, taking turns and waiting in line.

Results
It is hoped the results will provide evidence regarding the effectiveness of the programme and inform the future development of such programmes. Results will be presented within my master's thesis. It is also possible that the results will be published in a journal article and /or presented at a conference. A summary of the results can be forwarded to you on request, as can a copy of any published journal articles. Please contact the researchers or your Enrich+ if you would like a copy of the results.

Confidentiality
Although the name of the participants will be known to me, no further personal data will be collected on any participants. Participation in this project will remain confidential and no identifying information will be disclosed to anyone outside of the study. Codes and pseudonyms will be assigned to participating staff, parents and students to ensure no data can be traced back to any participants. The participants will not be identifiable in the presentation of any results.

Storage of data
On completion of my thesis all data will be given to my supervisor, Associate Professor Angelika Anderson, to be stored on a password protected university drive for five years. Only Associate Professor Anderson and I will have access to the data at any time. After five years the data will be destroyed by deleting the electronic files.

Right to withdraw
Participation in this project is voluntary and you or your child are under no obligation to give consent to participate.

All participants have the right to withdraw from the project at any time, for any reason, and with no consequence.

What happens now?
If you are happy to participate in this project, please complete the consent form and return it to myself or staff at Enrich+. Student participants may or may not be able to give consent, this is guided by you as the parent/caregiver. If you feel they can give informed consent, please direct your child to the 'consent form'. If you feel that they are able to participate but would like to give consent on their behalf, please direct your child to the 'assent form. If you have any questions regarding the project, please contact me on the details at the top of this form.

Yours sincerely,

Moana Billot

This research project has been approved by the Human Research Ethics Committee of the School of Psychology. Any questions about the ethical conduct of this research may be sent to the Secretary of the Committee, email ethics@waikato.ac.nz, postal address, School of Psychology, Faculty of Arts and Social Sciences, Te Kura Kete Aronui, University of

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Appendix H
Information sheet – Students

Dear

You are invited to join in a research project that I, Moana Billot, will do with my supervisor Associate Professor Angelika Anderson from the Faculty of Social Science at the University of Waikato. This project will help me finish my Master of Applied Psychology in Behaviour Analysis at the University of Waikato. Please read all of this information sheet before making a decision. If you would like more information about the project, let me or Associate Professor Anderson know.

The topic of the research
In this research project we will describe and evaluate the Youth+ programme. Showing if the programme works might be helpful to let other people know and to improve the programme.

What's involved
We want three - five students who are doing the programme, and their parents to help us. We will not include anyone who does not give their consent / assent to participate.

Your involvement
We will interview you and your parent/caregiver. We will ask you questions about what you think about the Youth+ programme, what you are learning and why you believe it is important and what you like about Youth+. We will also watch you during the programme to see what you are learning.

Results
Results will be presented in my master's thesis. We might also publish the results in a journal article and /or present them at a conference. We can send you a summary of the results if you like, a well as a copy of any published journal articles. Just let us or someone at Enrich+ know if you would like to see a copy of the results.

Confidentiality
Although we know your name we will not find out any other personal information about you. We will not tell anyone about your part in this project. Your real name will not be mentioned to anyone outside of the study. Instead we will use fake names in any reports.

Storage of data

On completion of my thesis all data will be given to my supervisor, Associate Professor Angelika Anderson, to be stored on a password protected university drive for five years. Only Associate Professor Anderson and I will have access to the data at any time. After five years the data will be destroyed by deleting the electronic files.

Right to withdraw
You do not have to take part if you do not want to. Even if you decide to take part and then change your mind, that's ok. You can stop at any time and you don't have to have a reason, and no-one will be upset with you.

What happens now?
If you are happy to join in this project, please fill in the consent / assent form and return it to myself or staff at Enrich+. If you have any questions about the project, let us know. Our details are at the top of this form.

Yours sincerely,

Moana Billot

This research project has been approved by the Human Research Ethics Committee of the School of Psychology. Any questions about the ethical conduct of this research may be sent to the Secretary of the Committee, email ethics@waikato.ac.nz, postal address, School of Psychology, Faculty of Arts and Social Sciences, Te Kura Kete Aronui, University of Waikato, Te Whare Wananga o Waikato, Private Bag 3105, Hamilton 3204.

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Appendix I
Consent form : Staff

Please retain a copy of this form for your personal records.
Research project: Description and evaluation of a programme for developing social skills and independent living skills for young adults with level 1 or 2 ASD
Name of participant: _____
I have received a copy of the Information Sheet describing the research project and have been given sufficient time to read it. Any questions that I have, relating to the research, have been answered to my satisfaction. I understand that I can ask further questions about the research at any time during my participation, and that I can withdraw my participation at any time (up to two weeks) after completion of data collection.
I understand that I can ask to have the observations stopped at any time.
When I sign this consent form, I will retain ownership of the collected data, but I give consent for the researcher to use the data for the purposes of the research outlined in the Information Sheet.
I understand that my identity will remain confidential in the presentation of the research findings.

Please complete the following checklist. Tick [✓] the appropriate box for each point	YES	NO
I have the right to decline to participate in any part of the research activity.		
I know who to contact if I have any questions about the study in general.		
I understand that the information supplied by me could be used in future academic publications.		
I consent to being interviewed at the beginning of the research regarding my views on the Youth+ program.		
I consent to being observed and having data collected on my behaviour during session times		
I wish to receive a copy of the findings.		

Participant: _____ Researcher: _____
Signature: _____ Signature: _____
Date: _____ Date: _____
Contact details: _____

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Appendix J
Consent form : Parents/caregivers
Please retain a copy of this form for your personal records.
Research project: Description and evaluation of a programme for developing social skills and independent living skills for young adults with level 1 or 2 autism
Name of participant: _____
Name of student: _____
I have received a copy of the Information Sheet describing the research project and have been given sufficient time to read it. Any questions that I have, relating to the research, have been answered to my satisfaction. I understand that I can ask further questions about the research at any time during my participation, and that I can withdraw my participation at any time (up to two weeks) after completion of data collection.
I understand that I can ask to have the observations stopped at any time.
When I sign this consent form, I will retain ownership of the collected data, but I give consent for the researcher to use the data for the purposes of the research outlined in the Information Sheet.
I understand that my identity will remain confidential in the presentation of the research findings.

Please complete the following checklist. Tick [✓] the appropriate box for each point	YES	NO
I have the right to decline to participate in any part of the research activity.		
I know who to contact if I have any questions about the study in general.		
I understand that the information supplied by me could be used in future academic publications.		
I consent to being interviewed at the end of research regarding my views on the Youth+ program and its impact on my child's behavior.		
I consent to my child being interviewed and having their behavior observed in regards to the Youth+ program (if required)		
I wish to receive a copy of the findings.		

Participant: _____ Researcher: _____
Signature: _____ Signature: _____
Date: _____ Date: _____
Contact details: _____

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Appendix K
Consent : Students

Please keep a copy of this form for yourself.
Research project: Description and evaluation of a programme for developing social skills and independent living skills for young adults with level 1 or 2 autism
My name: _____
I have read the Information Sheet and I understand what it says. Any questions that I had about this research have been answered. I know I can ask questions about the research at any time. I know I can stop at any time.
By signing this form I understand and give consent for the researcher to use the data for their research.
I understand that they will not use my name in the presentation of the research.

Please complete the following checklist. Tick [✓] the appropriate box for each point	YES	NO
I have the right to say no to the research at any time		
I know who to contact if I have any questions		
I understand that the information supplied by me could be used in future academic publications.		
I consent to being interviewed and having the interview recorded		
I consent to being watched during the programme		
I want to see a copy of the results		

Participant: _____ Researcher: _____
Signature: _____ Signature: _____
Date: _____ Date: _____
Contact details: _____

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Appendix L
Assent form : Students

Please keep a copy of this form for yourself.
Research project: Description and evaluation of a programme for developing social skills and independent living skills for young adults with level 1 or 2 autism
My name: _____
My parent/caregivers name:_____
I have read the Information Sheet and I understand what it says. Any questions that I had about this research have been answered. I know I can ask questions about the research at any time. I know I can stop at any time.
By signing this form I understand and give assent for the researcher to use the data for their research.
I understand that they will not use my name in the presentation of the research.

Please complete the following checklist. Tick [✓] the appropriate box for each point	YES	NO
I have the right to say no to the research at any time		
I know who to contact if I have any questions		
I understand that the information supplied by me could be used in future academic publications.		
I agree to being interviewed and having the interview recorded		
I agree to being watched during the programme		
I want to see a copy of the results		

Participant: _____ Researcher: _____
Signature: _____ Signature: _____
Date: _____ Date: _____
Parent: _____
Signature: _____

Appendix M
IOA Confidentiality Form

Research project: Description and evaluation of a programme for developing social skills and independent living skills for young adults with level 1 or 2 autism
I _____ understand that this research is part of the masters thesis of Moana Billot. All information in relation to participants and non participants in the program will remain confidential at all times during and after data collection. I will not discuss any details of this research or the participants with anyone other than the researchers.

Signed _____
Name _____
Date _____

31 March 2020

Attn. University of Waikato Ethics Committee

To Whom It May Concern

MASTERS STUDENT PROJECT AT ENRICH+

Please accept this letter as permission for Moana Billot to conduct research as part of her Masters thesis at Enrich+. If you have any questions, please do not hesitate to contact me on 0278367694 or karen.layton@enrichplus.org.nz, or contact David Ireland, our Executive Lead for Services on 0275754579 or david.ireland@enrichplus.org.nz.

Yours sincerely

Karen Layton
SERVICE MANAGER AUTISM & BEHAVIOUR SUPPORT

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