

The University of Maine

DigitalCommons@UMaine

Electronic Theses and Dissertations

Fogler Library

Spring 5-5-2023

The Effects of PEERS for Young Adults on Anxiety and Quality of Life for Young Adults with Autism Spectrum Disorder

Alysha Cecile Dagg

University of Maine, alysha.eaton@maine.edu

Follow this and additional works at: <https://digitalcommons.library.umaine.edu/etd>



Part of the [Accessibility Commons](#), [Adult and Continuing Education Commons](#), [Adult and Continuing Education Administration Commons](#), [Analytical, Diagnostic and Therapeutic Techniques and Equipment Commons](#), [Community College Education Administration Commons](#), [Curriculum and Instruction Commons](#), [Curriculum and Social Inquiry Commons](#), [Health Services Research Commons](#), [Higher Education Administration Commons](#), [Mental and Social Health Commons](#), [Other Social and Behavioral Sciences Commons](#), [Quality Improvement Commons](#), and the [Special Education Administration Commons](#)

Recommended Citation

Dagg, Alysha Cecile, "The Effects of PEERS for Young Adults on Anxiety and Quality of Life for Young Adults with Autism Spectrum Disorder" (2023). *Electronic Theses and Dissertations*. 3781. <https://digitalcommons.library.umaine.edu/etd/3781>

This Open-Access Thesis is brought to you for free and open access by DigitalCommons@UMaine. It has been accepted for inclusion in Electronic Theses and Dissertations by an authorized administrator of DigitalCommons@UMaine. For more information, please contact um.library.technical.services@maine.edu.

**EFFECTS OF PEERS® FOR YOUNG ADULTS ON ANXIETY AND QUALITY OF
LIFE FOR YOUNG ADULTS WITH AUTISM SPECTRUM DISORDER**

By

Alysha Dagg

B.CSc. Carleton University, 2018

A THESIS

Submitted in Partial Fulfillment of the

Requirements for the Degree of

Master of Arts

(Communication Sciences and Disorders)

The Graduate School

The University of Maine

May 2023

Advisory Committee:

Dr. Jane Puhlman, Assistant Professor of Communication Sciences and Disorders, Co-advisor

Dr. Sarah Howorth, Assistant Professor of Special Education, Co-advisor

Dr. Nancy E. Hall, Professor of Communication Sciences and Disorders

© 2023 Alysha Dagg

All Rights Reserved

EFFECTS OF PEERS® FOR YOUNG ADULTS ON ANXIETY AND QUALITY OF LIFE FOR YOUNG ADULTS WITH AUTISM SPECTRUM DISORDER

By Alysha Dagg

Thesis Advisors: Dr. Jane Puhlman and Dr. Sarah Howorth

An Abstract of the Thesis Presented
in Partial Fulfillment of the Requirements for the
Degree of Master of Arts
(Communication Sciences and Disorders)
May 2023

Social skills deficits as well as comorbid anxiety are two characteristics commonly experienced by people with Autism Spectrum Disorder - Level 1 (ASD-1; American Psychiatric Association, 2013). Additionally, these characteristics are identified as contributors to a lower quality of life (Smith et al., 2019). The purpose of the current study was to identify how anxiety and quality of life are affected by social skills intervention, specifically the PEERS® for Young Adults program (Laugeson, 2017). PEERS® for Young Adults is an evidence-based social skills intervention intended to support individuals with ASD-1 (Laugeson, 2017). Prior research has demonstrated its success in both increasing social skills and reducing anxiety (McVey et al., 2016; Factor et al., 2022; and Hill et al., 2017). The current study is the first to investigate the change in quality of life for people with ASD-1 following social skills intervention.

The current study used a pre-intervention and post-intervention within subject design. The participants (n=5) were between the ages of 18 and 28 (\bar{x} =20) and were administered the Multidimensional Student Life Satisfaction Scale (MSLSS) and General Anxiety Disorder - 7 Item Scale (GAD-7). The results across all domains (e.g. *Family, Work/School, Friends, Home and Self*), measured by the MSLSS, showed that, individually, participants' satisfaction with life increased. As a group, the change in life satisfaction from pre-intervention to post-intervention

was insignificant. The results of the GAD-7 indicated a decrease in the individual participants' levels of anxiety. This change in anxiety levels pre-intervention to post-intervention was approaching significance.

The most prominent limitation in the current study was the small sample size. Given low enrollment and a moderate attrition rate (38%), the results were not likely to demonstrate statistical significance. It is recommended that future researchers seek larger sample sizes through investigating multiple PEERS® for Young Adults groups and accumulate their data over time. Despite statistical insignificance, this study supports the use of PEERS® for Young Adults for people with ASD-1 to increase satisfaction with life and decrease levels of anxiety. This study also serves as an outline for future researchers to further investigate the relationships between quality of life, anxiety and PEERS® for Young Adults.

TABLE OF CONTENTS

LIST OF TABLES.....	v
LIST OF FIGURES.....	vi
LIST OF ABBREVIATIONS.....	vii
Chapter	
1. INTRODUCTION.....	1
1.1. Young Adults with Autism Spectrum Disorder - Level 1.....	1
1.2. Autism Spectrum Disorder - Level 1 and Social Challenges.....	2
1.3. Quality of Life and Young Adults with Autism Spectrum Disorder - Level.....	5
1.4. Program for the Education and Enrichment of Relational Skills® (PEERS®).....	7
1.5. The Current Study.....	10
2. METHODS.....	11
2.1. Participants.....	11
2.2. Procedure.....	12
2.3. Measures.....	14
2.3.1. General Anxiety Scale, 7th Edition (GAD-7).....	14
2.3.2. Multidimensional Student Life Satisfaction Scale (MSLSS).....	15
3. RESULTS.....	17
3.1. Anxiety Results Within and Across Participants.....	17
3.2. Quality of Life Results Within and Across Participants.....	20
4. DISCUSSION.....	31
4.1. Discussion of Anxiety.....	31
4.2. Discussion of Quality of Life.....	33

4.3. Limitations.....	36
4.4. Future Research.....	41
4.5. Clinical Implications.....	43
5. CONCLUSION.....	45
REFERENCES.....	46
APPENDICES.....	50
Appendix A. Multidimensional Student Life Satisfaction Scale (MSLSS).....	50
Appendix B. General Anxiety - 7-Item Scale (GAD-7)	51
BIOGRAPHY OF THE AUTHOR.....	54

LIST OF TABLES

Table 1.	PEERS® for Young Adults Curriculum Topics.....	13
Table 2.	GAD-7 Pre-test and Post-test Results.....	18
Table 3.	MSLSS Pre-test and Post-test Results	21
Table 4.	MSLSS Wilcoxon Signed Rank of Group Results	27

LIST OF FIGURES

Figure 1.	GAD-7 Pre-test and Post-test Individual Results.....	19
Figure 2.	GAD-7 Pre-test and Post-test Group Results.....	20
Figure 3.	MSLSS Pre-test and Post-test Results for Participant 1.....	22
Figure 4.	MSLSS Pre-test and Post-test Results for Participant 2.....	23
Figure 5.	MSLSS Pre-test and Post-test Results for Participant 4.....	24
Figure 6.	MSLSS Pre-test and Post-test Results for Participant 6.....	25
Figure 7.	MSLSS Pre-test and Post-test Results for Participant 7.....	26
Figure 8.	MSLSS Pre-test and Post-test Group Results Across Domains.....	28
Figure 9.	MSLSS Pre-test and Post-test Individual Results for Family Domain.....	28
Figure 10.	MSLSS Pre-test and Post-test Individual Results for Work/School Domain.....	29
Figure 11.	MSLSS Pre-test and Post-test Individual Results for FriendsDomain.....	29
Figure 12.	MSLSS Pre-test and Post-test Individual Results for Home Domain.....	30
Figure 13.	MSLSS Pre-test and Post-test Individual Results for Self Domain.....	30

LIST OF ABBREVIATIONS

ASD	Autism Spectrum Disorder
ASD - 1	Autism Spectrum Disorder - Level 1
GAD-7	General Anxiety - 7 Item Scale
MSLSS	Multidimensional Student Life Satisfaction Scale
PEERS®	Program for the Education and Enrichment of Relational Skills®

CHAPTER 1

INTRODUCTION

1.1. Young Adults with Autism Spectrum Disorder - Level 1

Autism Spectrum Disorder (ASD) is associated with poor social skills as well as repetitive and restricted behaviors (American Psychiatric Association, 2013). The disorder is classified into three severity levels based on how much support an individual requires. For example, Level 1 (ASD-1) indicates that support is required to address noticeable deficits in social interactions. Level 2 (ASD-2) means substantial support is required, and despite this support, there are maintained noticeable social deficits. Level 3 (ASD-3) means very substantial support is required as severe social deficits are present (American Psychiatric Association, 2013). The focus of the current study is on young adults with ASD-1 due to the limited research supporting social skills interventions for this population (Moody & Laugeson, 2019).

People with ASD-1 tend to have difficulty understanding others' perspectives, literal interpretations, reading facial expressions and making and keeping friends (Frith & Happé, 2005). In addition, they can have difficulty with reciprocal conversations, appropriate eye contact, social initiation, and adapting to different social environments (e.g. switching language use from being a student addressing a teacher to being amongst a group of peers; Hyman et al., 2020). For best long-term effects, diagnosis and intervention addressing social skills are critical at a young age to support people with ASD-1 (American Psychiatric Association, 2013). Unfortunately, some symptoms of ASD-1 are commonly mistaken for personality differences which can delay the diagnostic and treatment process (King & Reeve, 2018). Another barrier to early intervention services is the high academic achievement often recognized in individuals with ASD-1. This academic success can lead others to believe that people with ASD-1 are functioning

successfully without support (Gelbar et al., 2014). However, as individuals age, their social demands become increasingly complex, making it more difficult for children who do not get social skills intervention to succeed as adults (Qualter et al., 2015).

When surveying young adults with ASD-1, anxiety and loneliness were two of the most common experiences (Gelbar et al., 2014). Smith et al. (2019) found that 48% of their participants with ASD-1 qualified for an anxiety disorder (using the Anxiety and Related Emotional Disorders Scale; SCARED). The most prevalent types of anxiety disorders were social anxiety disorder and general anxiety disorder (Smith et al., 2019). Moeller & Seehuus (2019) identified that poor verbal social skills, a symptom of ASD-1 (American Psychiatric Association, 2013), was predictive of loneliness, anxiety and depression in most young adults attending college.

To understand how ASD-1 symptomology affects anxiety, Maddox & White (2015) compared young adults with social anxiety disorder (SAD) and ASD-1 to young adults with SAD and no ASD-1. They found that individuals with ASD-1 experienced social anxiety to a higher degree than the participants without ASD-1. ASD-1 symptomatology, such as social skills deficits, is speculated to interact with and amplify the social fears associated with anxiety. Half of the participants with ASD-1 reported that social skills deficits significantly contributed to their anxiety symptoms. These participants reported more avoidance and withdrawal from the social world, resulting in fewer chances to practice and improve interpersonal skills in social settings (Maddox & White, 2015).

1.2. Autism Spectrum Disorder - Level 1 and Social Challenges

The outcomes associated with the social challenges faced by young adults with ASD-1 include lower enrollment in post-secondary education and employment than their neuro-typical

peers (White et al., 2011; Shattuck et al., 2012). According to White et al. (2011)'s sample of 667 people enrolling in college, only between 0.7% and 1.9% of the future students presented with ASD characteristics. In addition, Shattuck et al. (2012) found that 50% of youth with ASD-1 leaving high school did not participate in post-secondary education or employment within the first two years. People with ASD-1 typically have at least one impressive area of knowledge or ability (Frith & Happé, 2005). Thus, intelligence or skill levels are not likely the challenges limiting this population's post-secondary pursuits. Alternative challenges for people with ASD-1, such as social skills deficits, are more likely to be affecting these individuals' success beyond high school (e.g. Elias & White, 2018; Marks et al., 2000; Alverson et al., 2019).

Elias & White (2018) used parent reports to identify challenges faced by young adults with ASD-1 transitioning from high school to college. They identified the most common difficulty during this time was Interpersonal Competence which they defined as the ability to efficiently communicate, listen and cooperate with others (i.e. social skills; Elias & White, 2018). Their reports revealed that some young adults with ASD-1 had difficulty making and keeping friends. Additionally, a common theme among participants demonstrated a limited capacity for intimacy; which is social closeness at a romantic level (Elias & White, 2018).

Similarly, Marks et al. (2000) interviewed three adolescent boys with ASD-1 who shared their experiences as they entered college. The everyday experiences among the young men were intense loneliness, negative peer interactions, and a lack of motivation for schoolwork outside of their interests. The boys excelled academically but struggled to make and keep friends. Marks et al. (2000) suggested that training peer acceptance and providing social opportunities and treatment for these individuals are crucial to support people with ASD-1 in high school and beyond.

A similar study interviewed individuals with ASD-1 and their families to discuss the transition from high school to college (Alverson et al., 2019). In their results, Alverson et al. (2019) found that deficits in social and executive functioning skills followed individuals beyond high school. The primary social challenge identified by participants was being socially involved, but still feeling socially isolated (Alverson et al., 2019). The participants identified predominantly surface-level friendships in the online community whom they had never met. These participants attributed some of their communication difficulties to negative peer responses in the past, resulting in a more hesitant level of engagement with others (Alverson et al., 2019).

A common misconception regarding people with ASD-1 is that they prefer to be alone and have a limited desire for meaningful friendships (Bauminger & Kasari, 2000). While this could be true for some individuals, not all people with ASD-1 prefer social isolation. Bauminger & Kasari (2000) measured loneliness and friendship in approximately 20 children with ASD-1 and compared results with neuro-typical same-aged peers (8 months to 14.5 years old). They hypothesized that if children with ASD-1 feel lonely, they must understand to some degree the benefit of having friends. They found that children with ASD-1 did resonate with feelings of loneliness. This resonance indicates that despite children with ASD-1 having fewer social connections than their typical peers, they do not lack the desire to be social. Bauminger & Kasari (2000) also found that even when children with ASD-1 had at least one friend, their loneliness did not diminish. This maintained loneliness could be due to children with ASD-1 having a different understanding of loneliness or their potential difficulty feeling social closeness in general (Bauminger & Kasari, 2000).

The loneliness found amongst the ASD-1 population continues into young adulthood (Gelbar et al., 2014). Orsmond et al. (2013) found that the young adult population in general is

an age that experiences high social isolation. Half of the participants (310 out of 620) did not attend or get invited to peer gatherings, nor did they make or receive phone calls with friends. Approximately one-third of this highly isolated group was utterly isolated, with no contact with friends via phone or in person. Orsmond et al. (2013) noted that young adults with poor social skills, such as those with ASD-1, were more likely to be part of the socially isolated group. Previous research demonstrates that social isolation, or loneliness, can be predictive of a poorer quality of life (Kivijärvi et al., 2020).

1.3. Quality of Life and Young Adults with Autism Spectrum Disorder - Level 1

Studies have examined the qualities that contribute to higher and lower quality of life reports for both the general young adult population (e.g. Coffman & Gilligan, 2002; Kivijärvi et al., 2020) and the young adult population specifically with ASD-1 (e.g. Mason et al., 2018; Smith et al., 2019). For the general young adult population, Coffman & Gilligan (2002) investigated the qualities that contribute to increased quality of life. Two important constructs were identified; stress and social support. Stress was defined as difficulty or inability to cope with demanding situations, and social support was defined as the predictability of a person in their life providing support if needed. Social support was measured by the Interpersonal Support Evaluation List (ISEL), which measured the amount of support provided by each relationship rather than the number of relationships a person had. They found that higher life satisfaction was correlated with lower stress and higher social support (Coffman & Gilligan, 2002).

In another study, Kivijärvi et al. (2020) found that young adults who do not pursue education or employment tend to have a lower quality of life. They attribute this to the loneliness and financial difficulty found in people who are unemployed and not in school (Kivijärvi et al., 2020). Although the authors do not claim that employment or post-secondary education would

necessarily solve loneliness, they point out the potential benefit these endeavors have on building social networks and reducing loneliness (Kivijärvi et al., 2020).

In terms of people with ASD-1, Mason et al. (2018) discuss the increased percentage of these individuals reporting lower quality of life than the neuro-typical population. They investigated qualities, specific to the ASD-1 population, that contribute to positive and negative quality of life reports. Mason et al. (2018) found that the positive impacts on the quality of life for people with ASD-1 were being employed, in a relationship, having higher education, and receiving support. The negative predictors for quality of life included being female and having a mental health diagnosis (e.g. anxiety). Mason et al. (2018) suggest future studies investigate the effect of manipulating the negative qualities to facilitate a higher quality of life for these individuals.

In another study, Smith et al. (2019) researched the relationship between anxiety and quality of life for young adults with varying levels of ASD (ages 18–27). They used parent reports (n=224) and individual reports (n=41), using the Screen for Child Anxiety Related Disorders (SCARED) and the World Health Organization Quality of Life - Brief (WHOQoL). Their results demonstrated that participants with more significant social deficits and higher anxiety levels had lower quality of life reports for the social domain of the WHOQoL (Smith et al., 2019). Significant social deficits were influenced by ASD severity and high anxiety was demonstrated by moderate results on the SCARED.

Notably, many qualities that predict a lower quality of life are common experiences for the ASD-1 population. For example, having an ASD-1 diagnosis (Mason et al., 2018), experiencing loneliness (Kivijärvi et al., 2020), having a mental health diagnosis (Mason et al., 2018; Smith et al., 2019) and experiencing social deficits (Smith et al., 2019) are all predictive of

poor quality of life and familiar to the ASD-1 population (American Psychiatric Association, 2013; Gelbar et al., 2014). This is additionally challenging for females with ASD-1 as being female is an additional predictor of a lower quality of life (Mason et al., 2018). Similarly, the qualities contributing to a high quality of life include qualities that are more difficult for the ASD-1 population to access. For example, higher education and employment (Kivijärvi et al., 2020; Mason et al., 2018) have been identified as experiences not commonly pursued by young adults with ASD-1 (White et al., 2011; Shattuck et al., 2012).

The predictors of quality of life reveal concerning disadvantages for people with ASD-1 in achieving higher quality of lives. To address this phenomenon, intervention providing social skills training may be beneficial. Social skills training has been demonstrated to reduce the effect of anxiety and increase social skills (e.g. McVey et al., 2016; Factor et al., 2022; Hill et al., 2017). The Program for the Education and Enrichment of Relational Skills (PEERS®) for Young Adults is a social skills intervention program that aims to support the ASD population.

1.4. Program for the Education and Enrichment of Relational Skills® (PEERS®)

PEERS® for Young Adults is a social skills program that was developed by Elizabeth Laugeson (2017). It is an evidence-based intervention intended for people with ASD but has been used for other people struggling with social skills deficits. It is one of the only evidence-based social skills programs for the young adult population. PEERS® for Young Adults emphasizes up-to-date and valid social skills and supports caregiver assistance to facilitate long-term success (Laugeson, 2017). This program consists of weekly meetings for 90 minutes over 16 weeks. The curriculum covers social skills topics such as maintaining friendships, dating, resolving conflict, and handling rejection (Laugeson, 2017). In addition to didactic instruction, the program has embedded social involvement opportunities outside of the

program that can be individualized for each participant (Laugeson, 2017). The PEERS® for Young Adults curriculum includes many qualities of evidence-based social skills training programs for individuals with ASD-1 (Moody & Laugeson, 2020). Moody & Laugeson (2020) identified common themes among successful social skills intervention groups. They found effective groups (i.e. groups that resulted in increased social skills) included small group formats, didactic lessons consisting of concrete rules, role-play demonstrations, modeling, concurrent caregiver training, consistent session formats, perspective-taking questions and homework to generalize the skills learned.

Given the connection between anxiety and ASD-1, many studies have examined the PEERS® curriculum's effect on anxiety (e.g. McVey et al., 2016; Factor et al., 2022; Hill et al., 2017). McVey et al. (2016) found PEERS® for Young Adults to both improve social skills and alleviate anxiety symptoms. Using the Liebowitz Social Anxiety Scale, the participants (n=53) demonstrated a significant level of reduced social anxiety as well as reduced social phobia. In addition, McVey et al., (2016) found an increase in the participants' reported number of social engagements following intervention. Interestingly, their results regarding loneliness maintained despite higher social engagement and interactions. This is consistent with other studies that have found people with ASD can maintain loneliness despite having friends (Bauminger & Kasari, 2000).

Similar findings were seen in work by Factor and colleagues (2022). Their study included 154 adolescents and young adults from 40 different PEERS® intervention groups across nine years. They found a significant improvement in social skills and anxiety levels using pre-test and post-test measures. Given the group setting, Factor et al. (2022) hypothesized that limited social skills gains would be present in the participants with diagnosed anxiety or self-reported high

levels of social anxiety. In contrast, they found that these participants demonstrated the most significant gains in social skills growth. In addition they determined that participants who significantly grew in social responsiveness, following the PEERS® intervention, significantly reduced their symptoms of social anxiety. Factor et al. (2022) found this relationship between anxiety and social skills consistent and similar across both adolescents and young adults.

Finally, through a small sample (n=5) of teenagers, Hill et al. (2017) investigated social skills and social anxiety after completing the PEERS® program. They found social skills and problem behaviors, measured by the Social Skills Improvement System (SSIS), were significantly improved. The participants' ASD symptoms were significantly less severe and social cognition, communication and motivation were significantly improved, measured by the Social Responsiveness Scale - Second Edition (SRS-2). Social knowledge specific to the skills taught in the intervention significantly improved, measured by the Test of Adolescent Social Skills Knowledge (TYASK). The Screen for Child Anxiety Related Disorders (SCARED) showed insignificant yet reduced levels of anxiety. Overall, this study demonstrated strong gains in social skills growth and some evidence of anxiety reduction (Hill et al., 2017).

McVey et al. (2016), Factor et al. (2022), and Hill et al. (2017) shed light on the association between increased social skills and reduced levels of anxiety. This correlation is important because it presumes an increase in social skills has the potential to reduce anxiety; which is both a common comorbid disorder with ASD-1 and a contributor to a lower quality of life. Therefore, given social skills intervention, there is potential for an increase in an individual's quality of life.

1.5. The Current Study

Research available for social skills interventions intended for the young adult population is limited (Moody & Laugeson, 2019). While previous research on PEERS® for Young Adults exists, there has yet to be research contributed to the potential change in quality of life after completion of the program. People with ASD-1 are predisposed to qualities that contribute to a lower quality of life and have limited experiences with qualities that contribute to a higher quality of life. The current study aims to investigate how addressing some of these qualities, specifically anxiety and social skills, can affect an individual's quality of life. The hypothesis is that PEERS® for Young Adults will alleviate some anxiety symptoms by teaching social skills which will result in an increased quality of life. Specifically, this research will answer the following questions:

1. Does participation in PEERS® for Young Adults reduce individuals with ASD-1s' levels of anxiety as measured by the General Anxiety - 7 Item Scale (GAD-7)?
2. Does participation in PEERS® for Young Adults improve individuals with ASD-1s' quality of life as measured by the Multidimensional Student Life Satisfaction Scale (MSLSS)?

CHAPTER 2

METHODS

2.1. Participants

The participants in the current study were recruited from the PEERS® for Young Adults program at the University of Maine in the Fall semester of 2022. Eight participants completed the pre-test measures, but only five completed the program and subsequent post-test measures. The participants who did not complete the program withdrew for varying reasons (e.g. family circumstances, behavioral concerns, and severe mental health crises). These participants' content was destroyed immediately after their withdrawal or dismissal. The attrition rate for the current study was 38%.

In order to participate in the PEERS® for Young Adults program at the University of Maine, participants must have been between the ages of 14 and 29, have self-reported social challenges, be fluent in English, be willing to complete a social skills checklist, willing to attend 13 out of 16 sessions, willing to be video recorded and have a diagnosis of a developmental disability. Participation in the PEERS® for Young Adults program was not allowed if the participant had a major mental illness, physical disability or medical condition preventing participation, receptive language IQ below 70, expressive language IQ below 50 or current severe behavioral concerns.

Additional inclusion criteria for the current study required participants to be between 18 and 28 years old and be enrolled in the PEERS® for Young Adults program at the University of Maine. Exclusion criteria for the current study included; missing more than 80% of the intervention as it could skew the effectiveness of the intervention. The participants' missing sessions could result from personal choice or removal from the group by the research team due to

behavioral issues to respect the needs of other participants. All participants eligible for the Fall 2022 PEERS® for Young Adults intervention were eligible for the current study.

All participants in the current study were between 18 and 28 years old (\bar{x} = 20 years), identified as male and self-reported having difficulty making and keeping friends. One participant identified as Puerto Rican, while the others identified as White. Another participant was transgender (female-to-male). One of the participants was attending the University of Maine as a full-time undergraduate student, while three worked part-time, and one did neither.

2.2. Procedure

Permission for this study was granted on 2022-09-15 by the University of Maine's Internal Review Board (IRB) for the Protection of Human Subjects (application number: 2022-03-16). The primary researcher attended intake meetings for individuals scheduled to join the PEERS® for Young Adults program in September 2022. During this time, the primary researcher met the participant, summarized the study, reviewed the consent form and gave participants the choice of whether or not to sign. Participants completed the pre-test measures during these meetings with the researchers present (September 1st to 13th, 2022). The measures employed at pre-test and post-test were the Multidimensional Student Life Satisfaction Scale (MSLSS) and the General Anxiety - 7 Item Scale (GAD-7). Both are self-rated Likert scale questionnaires that examine quality of life and anxiety, respectively. See Section 2.4 for more information on the individual measures. For post-test, the participants received the same two measures in-person (December 6th, 2022), but were asked to fill them out over the following week and return them during the final session (December 13th, 2023). They were instructed to answer the questions on the measures to the best of their ability each time.

The primary researcher and the co-researcher were trained by the UCLA PEERS® team and ran the PEERS® for Young Adults program. The 16-week curriculum was condensed into 11-weeks to accommodate weather cancellations and university holidays. Each week, participants were taught social skills through 90-minute didactic lessons. The lesson format included: homework check-in with each person, introduction to a new social skill (See Table 1), discussion opportunities for mistakes made in the past or current difficulties with the skill, presentation of a list of concrete rules to carry out the skill, videos of incorrect or incomplete use of the skill and discussion of what went wrong, videos demonstrating correct and complete use of the skill and discussion of what went right, role-play practice between participants and researchers or between each other, and finally, presentation of homework tasks and answering any end-of-session questions.

Table 1

PEERS® for Young Adults Curriculum Topics

Week	Social Skills Topics
1.	Trading Information, Starting Conversations & Maintaining Conversations
2.	Finding a Source of Friends
3.	Electronic Communication
4.	Appropriate Use of Humor
5.	Entering Group Conversations & Exiting Conversations
6.	Get-Togethers
7.	Dating Etiquette: Letting Someone Know You Like Them
8.	Dating Etiquette: Asking Someone on a Date
9.	Dating Etiquette: Going on Dates & Dating Do's and Don'ts
10.	Handling Disagreements & Handling Direct Bullying
11.	Handling Indirect Bullying & Moving Forward and Graduation

Note. Adapted from Laugeson (2017).

During the PEERS® for Young Adults sessions, a trained and experienced staff member from the Maine Access to Inclusive Education Resources team held a co-occurring social coaching group. For most participants (4 out of 5), the social coaches were their mothers. For one participant, their social coach was a female volunteer assigned by the research team. The social coaching group session format included: homework check-in and troubleshooting how to support their young adult best, introduction to the new social skill, discussion opportunities for mistakes or difficulties their young adult has with the skill, presentation of a list of concrete rules their young adult will practice carrying-out, presentation of homework tasks and answering any questions. For the young adults, generalizing the taught social skills was supported by practicing the targeted social skills during the in-session role-plays with each other, at home with their trained social coaches and, for some participants, with their peers at social gatherings.

2.3. Measures

2.3.1. General Anxiety - 7 Item Scale (GAD-7; Spitzer et al., 2006)

The participants completed the Multidimensional Student Life Satisfaction Scale (MSLSS) and the General Anxiety Disorder - 7 Item Scale (GAD-7). The General Anxiety - 7 Item Scale (GAD-7) is a condensed clinical anxiety measure, see Appendix A. It is a 7-item Likert questionnaire that asks participants to identify whether a statement (e.g. “trouble relaxing”) happens “Not at all” (rating of 0), “Several days” (rating of 1), “More than half the days” (rating of 2) or “Nearly every day” (rating of 3). The sum of the participant’s response values provides a descriptive term for their current level of anxiety (e.g. “minimal anxiety,” “mild anxiety,” “moderate anxiety,” or “severe anxiety”). There is an additional qualitative section on the GAD-7, the impact rating, that allows participants to identify how difficult their anxiety makes their lives (e.g. “not difficult at all,” “somewhat difficult,” “very difficult,” or

“extremely difficult”). Spitzer, Kroenke, Williams, and Lowe (2006) developed and tested the GAD-7 for reliability and validity. They found the internal consistency of this measure was 0.92 demonstrating strong reliability. The test-retest reliability was 0.82 (Spitzer et al., 2006). Procedural and convergent validity was 0.83 and 0.72, respectively (Spitzer et al., 2006).

2.3.2. Multidimensional Student Life Satisfaction Scale (MSLSS; Huebner, 1991)

The Multidimensional Student Life Satisfaction Scale (MSLSS) assesses an individual’s quality of life as it relates to *Family, Friends, School, Home* and *Self*, see Appendix B. Within each life domain, there are 6 to 9 phrases (e.g. “I think I am good looking”) that participants rated with “Strongly Disagree” (rating of 1), “Moderately Disagree” (rating of 2), “Slightly Disagree” (rating of 3), “Slightly Agree” (rating of 4) “Moderately Agree” (rating of 5), “Strongly Agree” (rating of 6). Some questions required inverse scoring (e.g. “I feel bad at school”) where “Strongly Disagree” was scored with a rating of six and “Strongly Agree” was scored with a rating of 1. The responses were averaged for each domain, giving a numerical value as low as one and as high as 6. These scores indicated the participants' satisfaction with each domain. In addition, the scores from all domains were added together and divided by five, the number of domains, to obtain an overall quality of life score.

Huebner (1991) developed the MSLSS. He found that the MSLSS was consistent with other quality-of-life measures demonstrating its concurrent validity. The internal consistency is between 0.70 and the low 0.90s (Huebner, 2001). Within 2 to 4 weeks, the test-retest reliability is between 0.70 and 0.90 (Huebner, 2001). Given this information, the MSLSS helps assess an individual’s current level of satisfaction with life or, more formally, their quality of life. Initially, people between 8 and 18 years old were the targeted recipients of this measure. The current study used the MSLSS despite the age cut-off as it is a measure that divides quality of life into multiple

domains (e.g. *Family, Friends, School, Home* and *Self*). An adaptation made to this measure by the current researcher allowed participants to fill out the *School* section as if it were measuring the quality of *Work*, where necessary. The word “School” was replaced with “Work” on the MSLSS for participants to whom it applied.

CHAPTER 3

RESULTS

3.1. Anxiety Results Within and Across Participants

The General Anxiety - 7 Item Scale (GAD-7) was used to assess anxiety, where the participants' summed responses yielded scores that were classified into descriptive categories. The individual changes were relatively consistent across participants. Apart from one participant whose anxiety slightly increased, the other participants demonstrated varying degrees of reduced anxiety. The pre-test results demonstrated that Participant 4 (Score = 16) had the highest anxiety level, and Participant 6 (Score = 5) had the lowest anxiety level. The post-test results demonstrated that Participant 4 (Score = 14) continued to have the highest level of anxiety, and Participant 2 (Score = 4) had the lowest level. Participant 2 demonstrated the largest decrease in anxiety from pre-test (Score=15) to post-test (Score=4). The participants additionally reported impact ratings which measured the degree to which the participants felt their level of anxiety made their lives difficult. At pre-test, the highest impact rating was "Extremely difficult", and at post-test, the highest impact rating reported was "Somewhat difficult". The pre-test and post-test results are outlined in Table 2 and Figure 1.

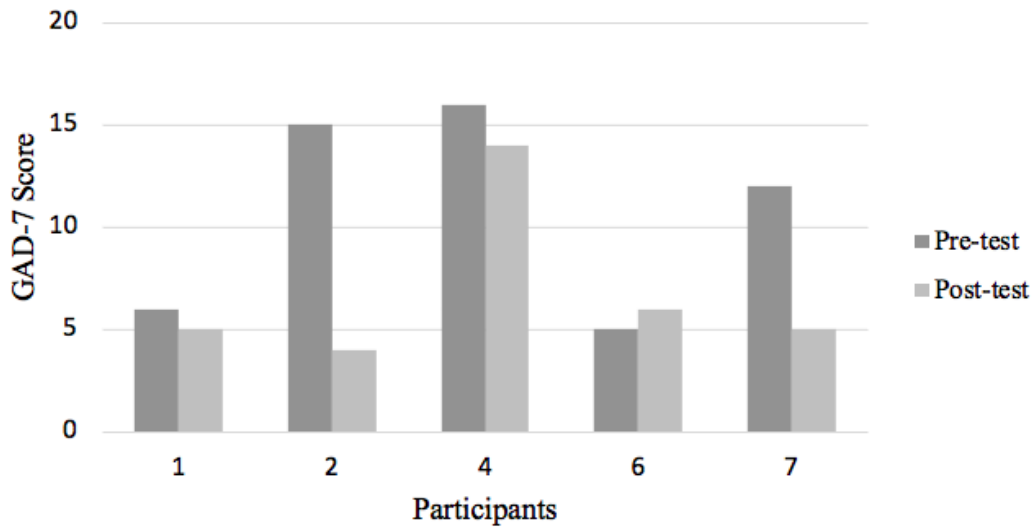
Table 2*GAD-7 Pre-test and Post-test Results*

Participant	GAD-7		
	Score	Classification	Impact Rating
	Pre-Test		
1	6	Mild Anxiety	Somewhat Difficult
2	15	Severe Anxiety	Extremely Difficult
4	16	Severe Anxiety	Very Difficult
6	5	Mild Anxiety	Somewhat Difficult
7	12	Moderate Anxiety	Very Difficult
Group Average	11	Moderate Anxiety	n/a
	Post-Test		
1	5	Mild Anxiety	Somewhat Difficult
2	4	Minimal Anxiety	Somewhat Difficult
4	14	Moderate Anxiety	Somewhat Difficult
6	6	Mild Anxiety	Somewhat Difficult
7	5	Mild Anxiety	Somewhat Difficult
Group Average	7	Mild Anxiety	n/a

Note. The GAD-7 was developed by Spitzer et al., (2006).

Figure 1

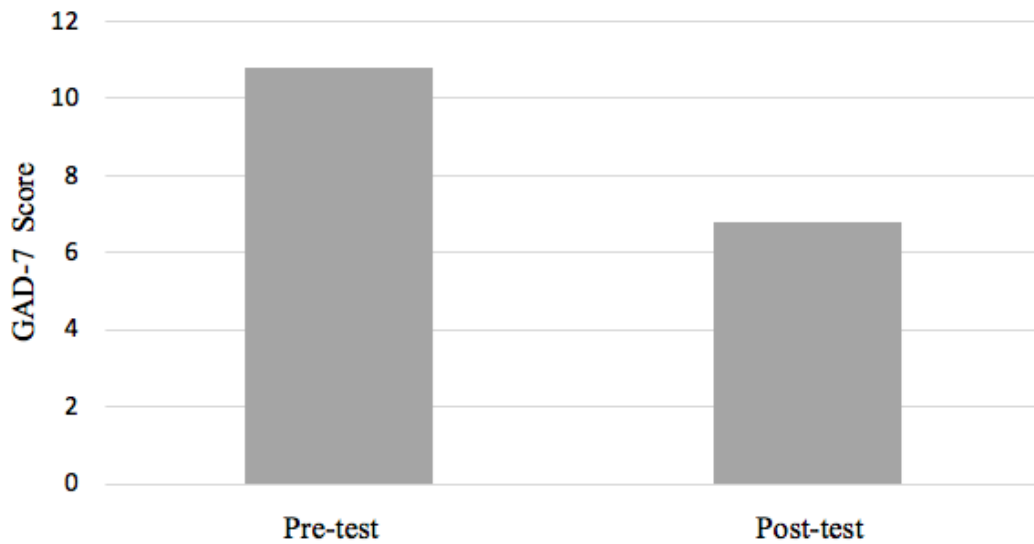
GAD-7 Pre-test and Post-test Individual Results



The group's average level of anxiety decreased from pre-test ($\bar{x} = 11$, $SD=5.1$, Range = 5-16) to post-test ($\bar{x} = 7$, $SD=4.1$, Range = 4-14), see Table 2. For overall change, as a group, see Figure 2. A Wilcoxon signed-rank test showed that the 11-week PEERS® for Young Adults intervention did not elicit a statistically significant reduction of anxiety following intervention ($z = -1.90$, $p = .06$). However, this is approaching significance.

Figure 2

GAD-7 Pre-test and Post-test Group Results



3.2. Quality of Life Results Within and Across Participants

The Multidimensional Student Life Satisfaction Scale (MSLSS) measured the participants' quality of life by assessing their satisfaction with the following domains of life: *Family, Work/School, Friends, Home, and Self*. The results for each participant across the domains demonstrated variable changes, see Table 3. The pre-test results demonstrated that participant 6 (\bar{x} =4.8, 80% satisfaction) had the highest quality of life across domains and participant 7 (\bar{x} =3.0, 50% satisfaction) had the lowest. Post-test results demonstrated that participant 2 (\bar{x} =5.4, 90% satisfaction) had the highest quality of life across domains and participant 4 (\bar{x} =3.4, 57% satisfaction) and 7 (\bar{x} =3.4, 57% satisfaction) both had the lowest. Participant 2 made the largest overall gains from pre-test (\bar{x} =4.0) to post-test (\bar{x} =5.4), and participant 1 made the smallest gains by decreasing from pre-test (\bar{x} =4.2) to post-test (\bar{x} =4.0).

Table 3*MSLSS Pre-test and Post-test Results*

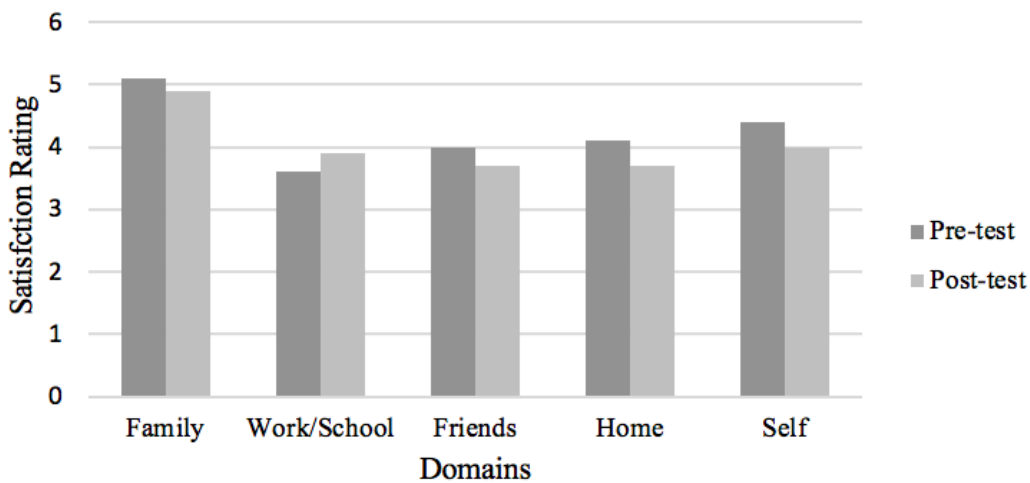
Participant	MSLSS					
	MSLSS Domains					Overall Satisfaction
	<i>Family</i>	<i>Work/ School</i>	<i>Friends</i>	<i>Home</i>	<i>Self</i>	
	Pre-Test					
1	5.1	3.6	4.0	4.1	4.4	4.2
2	3.9	n/a	4.2	4.3	3.6	4.0
4	3.1	1.5	5.9	3.6	2.9	3.4
6	5.4	3.9	5.0	4.1	5.4	4.8
7	1.1	3.9	3.6	2.4	4.1	3.0
	Post-Test					
1	4.9	3.9	3.7	3.7	4.0	4.0
2	4.7	n/a	6.0	5.6	5.3	5.4
4	3.9	1.0	5.4	3.8	2.9	3.4
6	5.4	4.5	4.7	5.1	5.4	5.0
7	3.9	3.3	2.9	2.3	4.7	3.4

Note. The MSLSS was developed by Heubner (1991)

Participant 1’s average quality of life across domains decreased by 0.2 points (i.e. 3%) from pre-test ($\bar{x}=4.2$, 70% satisfaction) to post-test ($\bar{x}=4.0$, 67% satisfaction). When examining the specific domains for participant 1, *Family* decreased by 0.2 points from pre-test ($\bar{x}=5.1$) to post-test ($\bar{x}=4.9$). *Work/School* increased by 0.3 from pre-test ($\bar{x}=3.6$) to post-test ($\bar{x}=3.9$). *Friends* decreased by 0.3 from pre-test ($\bar{x}=4.0$) to post-test ($\bar{x}=3.7$). *Home* decreased by 0.4 from pre-test ($\bar{x}=4.1$) to post-test ($\bar{x}=3.7$). *Self* decreased by 0.4 from pre-test ($\bar{x}=4.4$) to post-test ($\bar{x}=4.0$). See Figure 3.

Figure 3

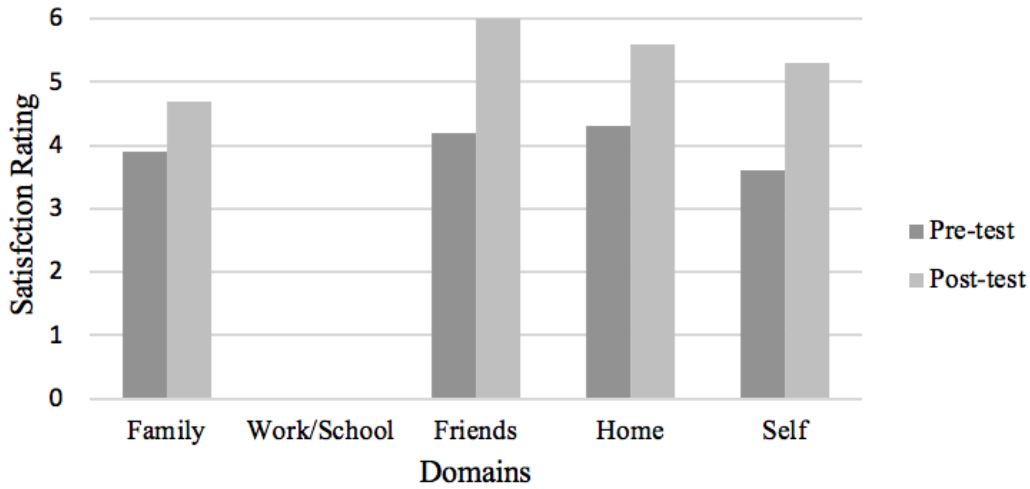
MSLSS Pre-test and Post-test Results for Participant 1



Participant 2’s average quality of life across domains increased by 1.4 points (i.e. 13%) from pre-test ($\bar{x}=4$, 67% satisfaction) to post-test ($\bar{x}=5.4$, 90% satisfaction). Specifically, *Family* increased by 0.8 points from pre-test ($\bar{x}=3.9$) to post-test ($\bar{x}=4.7$). *Work/School* did not apply to this participant. *Friends* increased by 1.8 from pre-test ($\bar{x}=4.2$) to post-test ($\bar{x}=6.0$). *Home* increased by 1.3 from pre-test ($\bar{x}=4.3$) to post-test ($\bar{x}=5.6$). *Self* increased by 0.7 from pre-test ($\bar{x}=3.6$) to post-test ($\bar{x}=5.3$). See Figure 4.

Figure 4

MSLSS Pre-test and Post-test Results for Participant 2

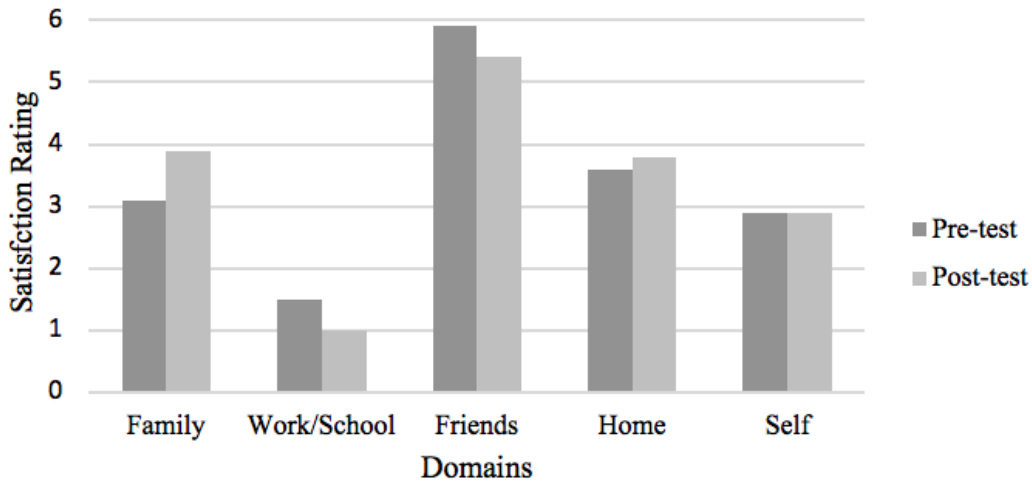


Note: Participant 2 was not in school or employed thus he did not have a result for the Work/School domain.

Participant 4's average quality of life across domains remained consistent from pre-test ($\bar{x}=3.4$, 57% satisfaction) to post-test ($\bar{x}=3.4$, 57% satisfaction). Specifically, *Family* increased by 0.8 points from pre-test ($\bar{x}=3.1$) to post-test ($\bar{x}=3.9$). *Work/School* decreased by 0.5 points from pre-test ($\bar{x}=1.5$) to post-test ($\bar{x}=1.0$). *Friends* decreased by 0.5 from pre-test ($\bar{x}=5.9$) to post-test ($\bar{x}=5.4$). *Home* increased by 0.2 points from pre-test ($\bar{x}=3.6$) to post-test ($\bar{x}=3.8$). *Self* remained consistent from pre-test ($\bar{x}=2.9$) to post-test ($\bar{x}=2.9$). See Figure 5.

Figure 5

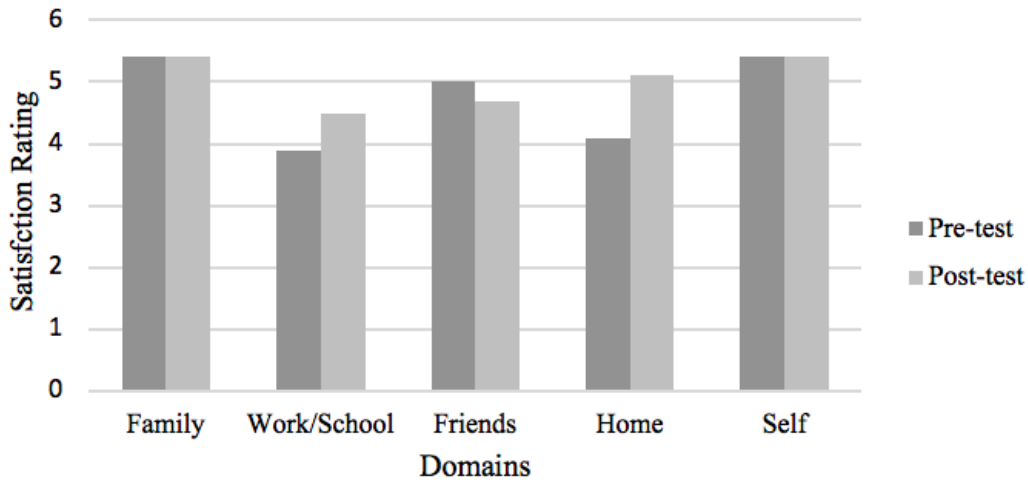
MSLSS Pre-test and Post-test Results for Participant 4



Participant 6's average quality of life across domains increased by 0.2 points (3%) from pre-test (\bar{x} =4.8, 80% satisfaction) to post-test (\bar{x} =5.0, 83% satisfaction). Specifically, *Family* remained consistent from pre-test (\bar{x} =5.4) to post-test (\bar{x} =5.4). *Work/School* increased by 0.6 points from pre-test (\bar{x} =3.9) to post-test (\bar{x} =4.5). *Friends* decreased by 0.3 from pre-test (\bar{x} =5.0) to post-test (\bar{x} =4.7). *Home* increased by 1.0 points from pre-test (\bar{x} =4.1) to post-test (\bar{x} =5.1). *Self* remained consistent from pre-test (\bar{x} =5.4) to post-test (\bar{x} =5.4). See Figure 6.

Figure 6

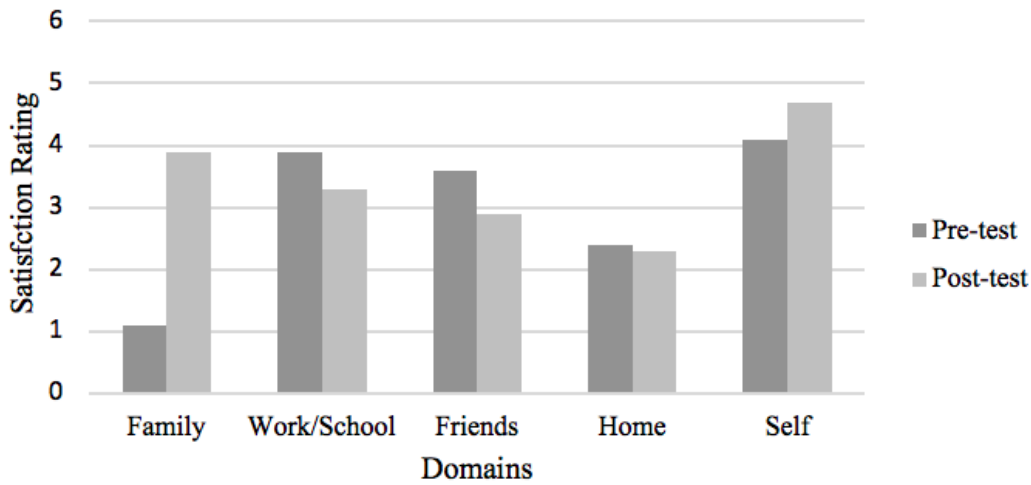
MSLSS Pre-test and Post-test Results for Participant 6



Participant 7's average quality of life across domains increased by 0.4 points (7%) from pre-test (\bar{x} =3.0, 50% satisfaction) to post-test (\bar{x} =3.4, 57% satisfaction). Specifically, *Family* increased by 2.8 from pre-test (\bar{x} =1.1) to post-test (\bar{x} =3.9). *Work/School* decreased by 0.6 points from pre-test (\bar{x} =3.9) to post-test (\bar{x} =3.3). *Friends* decreased by 0.7 from pre-test (\bar{x} =3.6) to post-test (\bar{x} =2.9). *Home* decreased by 0.1 points from pre-test (\bar{x} =2.4) to post-test (\bar{x} =2.3). *Self* increased by 0.6 from pre-test (\bar{x} =4.1) to post-test (\bar{x} =4.7). See Figure 7.

Figure 7

MSLSS Pre-test and Post-test Results for Participant 7



At pre-test, the average group quality of life across all domains was 3.9 out of 6.0 (Range=3.2-4.5, SD=0.5). This indicates that, as a group, the participants demonstrated 65% life satisfaction prior to intervention. When examining group scores specific to individual domains, *Friends* (\bar{x} =4.5, Range=3.6-5.9, SD=0.9) was rated with the highest level of satisfaction and *Work/School* (\bar{x} =3.2, Range=1.5-3.9, SD =1.2) was rated with the lowest. At post-test, the average group quality of life across all domains was 4.2 out of 6.0 (Range=3.2-4.6, SD=0.6). This indicates that, as a group, the participants demonstrated 70% life satisfaction following the intervention. A Wilcoxon signed rank test analysis that was used to examine pre-test and post-test scores demonstrated no significant changes ($z = -1.63, p = .10$), see Table 4.

Table 4*MSLSS Wilcoxon Signed Rank of Group Results*

MSLSS Domains	Group Average		Wilcoxon Signed Rank	
	Condition		<i>z</i>	<i>p</i>
	Pre-test	Post-test		
<i>Family</i>	3.7	4.6	-1.47	.14
<i>Work/School</i>	3.2	3.2	-.18	.85
<i>Friends</i>	4.5	4.5	-.68	.50
<i>Home</i>	3.7	4.1	-.94	.35
<i>Self</i>	4.1	4.5	-1.07	.29
<i>Overall</i>	3.9	4.2	-1.63	.10

Note. The MSLSS was developed by Huebner (1991)

When examining group scores specific to individual domains, *Family* ($\bar{x}=4.6$, Range=3.9-5.4, SD=0.7) was rated with the highest level of satisfaction, and *Work/School* ($\bar{x}=3.2$, Range=1-4.5, SD=1.53) was rated with the lowest. The group pre-test and post-test results are shown in Table 4. See Figure 8 for an illustration of the group changes across domains from pre-test to post-test. In addition, the individual changes from pre-test to post-test for each domain of the MSLSS are displayed in Figures 9 to 13.

Figure 8

MSLSS Pre-test and Post-test Group Results Across Domains

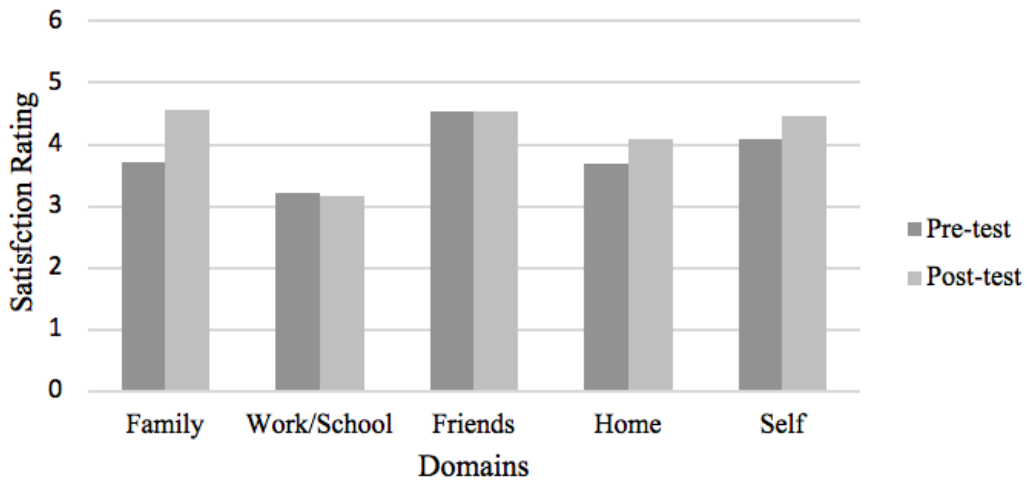


Figure 9

MSLSS Pre-test and Post-test Individual Results for the Family Domain

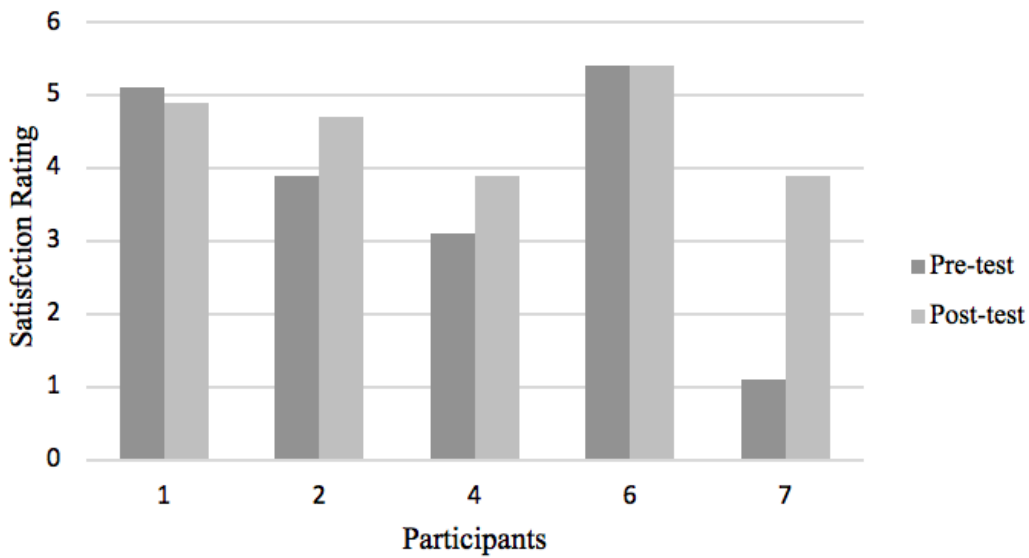


Figure 10

MSLSS Pre-test and Post-test Individual Results for the Work/School Domain

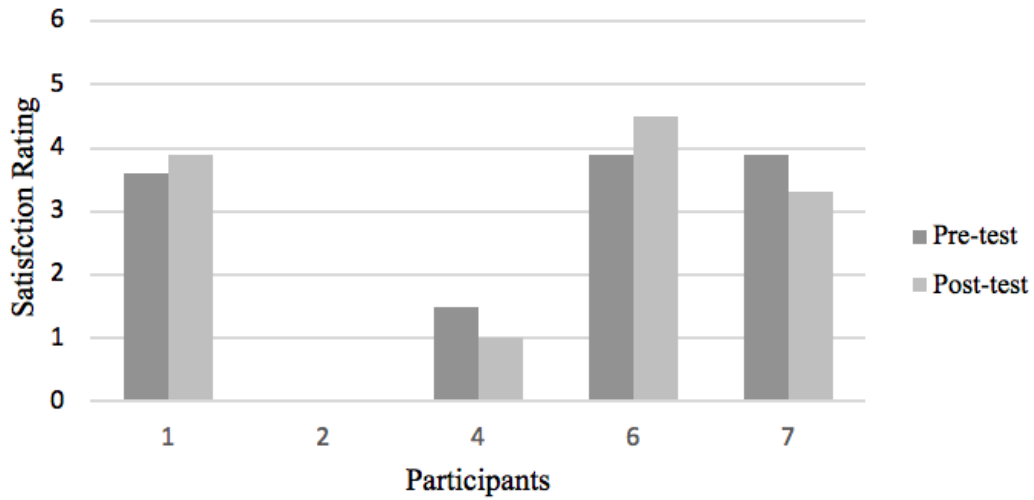


Figure 11

MSLSS Pre-test and Post-test Individual Results for the Friends Domain

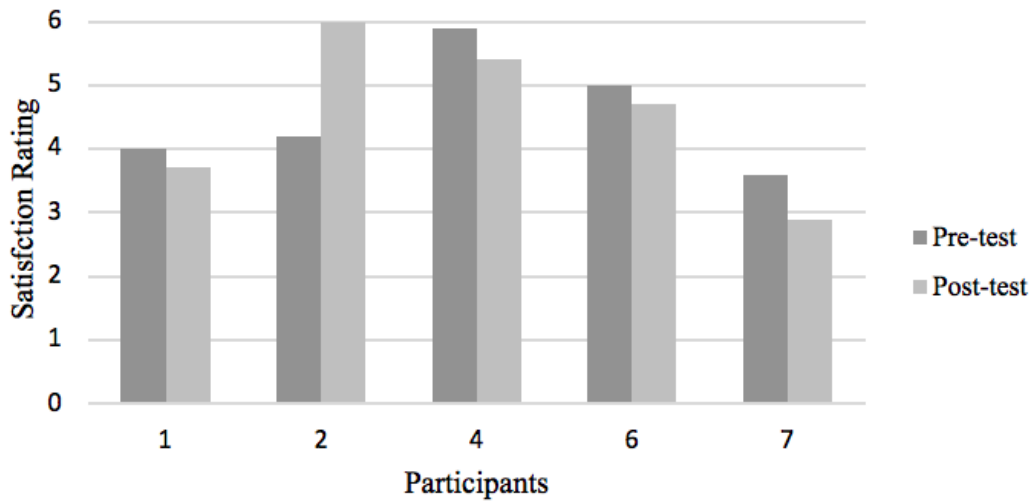


Figure 12

MSLSS Pre-test and Post-test Individual Results for the Home Domain

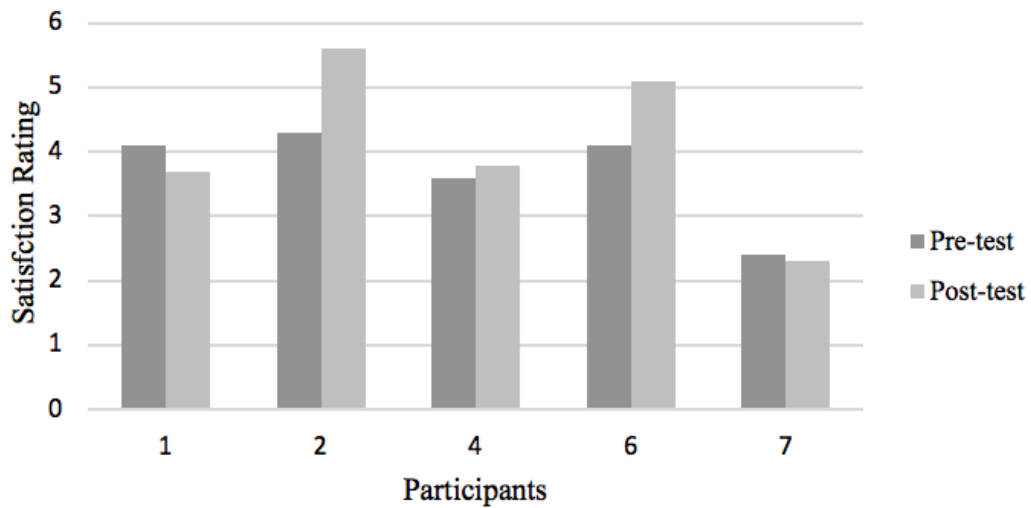
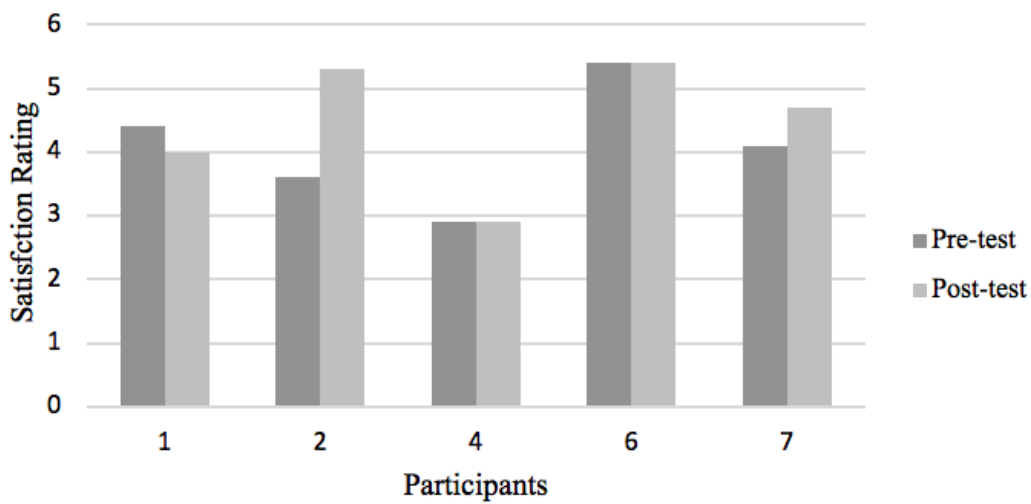


Figure 13

MSLSS Pre-test and Post-test Individual Results for the Self Domain



CHAPTER 4

DISCUSSION

4.1. Discussion of Anxiety

The first research question in this study investigated whether participation in PEERS® for Young Adults would decrease anxiety levels (measured by the GAD-7). The results suggested that PEERS® for Young Adults contributes to a decreased level of anxiety for individuals with ASD-1. This result was approaching statistical significance and is consistent with other research demonstrating decreasing anxiety levels following PEERS® for Young Adults (e.g. McVey et al., 2016; Factor et al., 2022; Hill et al., 2017).

PEERS® for Young Adults and the potential acquisition of social skills was not intended to cure anxiety but rather reduce some of its effects on an individual. This was measured by the numerical anxiety scores and the impact ratings on the GAD-7. All participants identified their varying anxiety levels (mild to severe) as making their daily lives only “Somewhat difficult” after the intervention. This was an impact rating that some participants decreased to and that others maintained from pre-test to post-test. The maintained or lowered impact ratings following PEERS® for Young Adults suggest that social skills deficits were contributing to these individuals’ experience of anxiety. This is consistent with McVey et al. (2016), Factor et al. (2022), and Hill et al. (2017), who found PEERS® for Young Adults increased social skills and reduced anxiety, and Maddox & White (2015), who found reduced social skills contributed to increased anxiety levels.

Furthermore, the current study provided evidence that despite participation in treatment using a group format, the participants did not experience dramatic increases in anxiety. The group format was a concern presented by Factor et al. (2022), as anxiety was hypothesized to

impede learning for those who experienced extremely high anxiety. While the current study did not measure social skills growth, it can be noted that participants 2 and 4, who experienced the highest anxiety levels, reported reduced anxiety following treatment. Given the social fears associated with ASD-1 (Maddox & White, 2015), if the group format was detrimental to learning, these participants' anxiety levels should have escalated rather than decreased following group treatment. Despite presented concerns, this is similar to what Factor et al. (2022) found; participants with high anxiety increased social skill levels and decreased anxiety levels following group treatment.

Some additional considerations for the current study's anxiety results pertain to the participants' demographics. Participant 4 identified as transgender and had extremely high anxiety. This participant's anxiety level is consistent with Bouman et. al (2017) who report people who are transgender experience more anxiety than the general population. Participant 4 demonstrated a decrease in anxiety levels and impact rating of life difficulty following the intervention. In addition, participant 7 was Puerto Rican and had anxiety levels in the moderate range at pre-test and mild range at post-test. The high anxiety found for this participant pre-intervention is consistent with Alegria et al. (2019) who claim this population has an increased risk of having a psychiatric disorder. They specifically outline social relationships and social stress as factors contributing to this phenomenon. Participant 7 decreased his levels of anxiety following social skills training, thus the current study supports the claim that social relationships and social stress may contribute to increased anxiety for the Puerto Rican population.

4.2. Discussion of Quality of Life

The second research question investigated whether quality of life increased following participation in PEERS® for Young Adults (measured by MSLSS). It was hypothesized that if the social skills intervention decreased the participants' anxiety levels, their quality of life would subsequently increase. Anxiety contributes to lower quality of life (Mason et al., 2018; Smith et al., 2019) and is thought to be more difficult for the ASD-1 population given their characteristic social skills deficits (American Psychiatric Association, 2013). Thus, PEERS® for Young Adults was suspected to reduce anxiety by exposing participants to social skills instruction, resulting in a higher quality of life following treatment. The results of the current study demonstrated that the group's overall quality of life increased. These results were statistically insignificant, however, they provide opportunity for discussion of the changes found.

The MSLSS measured quality of life through satisfaction with various life domains (e.g. *Friends, Family, Work/School, Home, Self*). The *Friends* domain was of most interest to the current researcher because the participants struggled to make and keep friends and the intervention targeted social skills. While social skills were not directly measured in this study, prior research supported social skills growth after completion of PEERS® programs (Factor et al. 2022; McVey et al., 2016; Hill et al., 2017). Research has also demonstrated that increased social skills can decrease loneliness (Moeller & Seehuus, 2019) which can contribute to a higher quality of life (Kivijarvi et al. 2020). The results of the current study revealed that most participants (4 out of 5) reported decreased satisfaction in the *Friends* domain before and after treatment. The one participant who reported a higher satisfaction was suspected to be exaggerating with the highest possible score as he did not complete homework activities and his

social coach reported that no social gatherings occurred throughout the intervention period. This participant (participant 2) is discussed further in Section 4, Limitations.

The PEERS® for Young Adults curriculum yields some possible explanations for the participants' decrease in satisfaction with *Friends*. PEERS® for Young Adults teaches characteristics of good friendships in one of its first lessons. The lesson includes brainstorming qualities that make a good friend while focusing on and defining buzzwords such as, “*Sharing of Common Interests, Kindness and Caring, Support, Mutual Understanding, Commitment and Loyalty, Honesty and Trust, Equality, Ability to Self-Disclose and Conflict Resolution*” (Laugeson, 2017, p.35-36). The lesson also differentiates the levels of friendships found (*Acquaintances, Casual Friends, Regular Friends, Best Friends*; Laugeson, 2017, p.36). This lesson gives young adults the opportunity to reflect on the friendships they have in their lives and evaluate the qualities found in these friendships. It is possible the decrease in satisfaction seen across the majority of the participants' *Friends* domain could be due to the participants gaining the ability to recognize potential unsatisfactory or non-existent friendships. This potential recognition of limited friends would be consistent with other research that investigated loneliness and social isolation for people with ASD-1 (e.g. Alverson et al., 2019). Alverson et al. (2019) identified participants with ASD-1 as being socially involved, but still feeling socially isolated, which could lead to similar results found in this study. Recognizing friendships for the qualities they have or do not have could lead individuals to identify potential feelings of loneliness or unsatisfactory friendships.

The *Family* domain remained relatively consistent in satisfaction levels for all participants. Most participants increased in satisfaction, while one maintained and another decreased. A reason for these results could be similar to the *Friends* domain. Perhaps the young

adults were able to more clearly recognize the strength of these family relationships after learning the qualities of good friends in the PEERS® for Young Adults program. The *Family* and *Home* domains tended to follow the same trend for participants living in the same home as their families (participants 2, 4, 6 and 1). For these participants, their *Home* and *Family* scores changed in the same direction (e.g. increased, decreased or maintained) from pre-test to post-test. Further, participant 7 was not living in the same home as his family and reported an increase in the *Family* domain and a decrease in the *Home* domain. This indicates a potential correlation between these domains for people living with family.

The *Work/School* domain was divided into participants who attended work and attended school. Participants 1, 4 and 6 were working during the intervention period and participant 7 was enrolled in college. The working participants, as a group, were noted to increase in satisfaction in this domain, while the participant attending school decreased. In terms of *Work*, despite increasing as a group, the individual changes were variable. Participants 1 and 6 increased in satisfaction with this domain and Participant 4 decreased. The varying results could be influenced by the participants' levels of anxiety. Participants 1 and 6 had the lowest reported anxiety among the group and participant 4 had the highest reported anxiety among the group. This demonstrates a possible inverse trend between these two constructs, where higher anxiety is associated with lower satisfaction at work.

For *School*, participant 7 was the only participant enrolled at the University of Maine as a full-time undergraduate student. The student was noted to decrease in this domain from pre-test to post-test. This could be due to reevaluating relationships found at school, similar to the evaluation of friendships represented by the *Friends* domain. Another consideration for this participant's decrease in quality of life is that the post-test measures were collected during the

University of Maine's final exam time (December 2022). Thus, participant 7 may have been feeling higher levels of stress, which previous studies have shown to be a contributor to lower quality of life (Coffman & Gilligan, 2002). While stress could have affected all domains of this participants quality of life, their overall quality of life increased from pre-test to post-test.

Finally, the *Self* domain demonstrated a group increase of satisfaction and variable individual results. The participants with the highest (participant 6) and lowest (participant 4) satisfaction levels for *Self* did not make any changes to their reported levels before and after treatment. The three remaining participants demonstrated varying trends; one decreased while two increased. These results indicate the PEERS® for Young Adults may influence a change in a person's perception of self when their perception is not extremely high or extremely low at baseline.

The increased overall quality of life following social skills intervention is a preliminary discovery. While there have been studies identifying factors related to high and low quality of life, there has yet to be studies investigating the change in quality of life following an intervention. Through the analysis of anxiety and quality of life, the current study demonstrated the potential benefits of identifying and manipulating factors influencing quality of life.

4.3. Limitations

Many limitations warrant discussion when interpreting the results of the current study. First, the generalizability of results requires caution given the small (n=5) and limited sample of participants. Most participants were Caucasian, male and living in Maine, USA. Although, there was some diversity present within the group such as a 10-year age range among participants (18-28), one participant who was Puerto Rican and another who was transgender. However, the sample remains a barrier to generalizing the results to all people with ASD-1. For example, the

prevalence ratio of males to females in the ASD population is 3:1 (Loomes, Hull & Mandy, 2017). Although McVey et al. (2017) found males and females respond similarly to PEERS® for Young Adults intervention, the current study did not represent females with ASD-1. To increase external validity in future studies, researchers should consider seeking larger and more representative samples of participants with ASD-1. This can be achieved by investigating multiple PEERS® for Young Adults groups and accumulating data over time.

Additionally, generalization of the results is limited because the potential spontaneous changes in the participants' anxiety and quality of life was not accounted for. PEERS® for Young Adults was the independent variable in this study and it would have been beneficial to isolate this variable further by incorporating a control group, consisting of participants with ASD-1 who did not complete the PEERS® for Young Adults program. Without comparison of anxiety and quality of life in participants who completed the program and participants who did not, the changes in anxiety and quality of life found are not conclusively a result of the PEERS® for Young Adults program. The current study did not incorporate a control group due to limited participants at the time of recruitment. Thus, future researchers with access to larger samples are encouraged to use a control group to strengthen their experimental design and validity of findings.

The GAD- 7 is a measure specifically designed to assess general anxiety in the general population (Spitzer et al. 2006). Considering anxiety is influenced by ASD-1 (Maddox & White, 2015), an anxiety measure that is specifically designed for use with people with ASD-1 (e.g. Anxiety Scale for Autism - Adults; Rodgers et al., 2020) may have provided more accurate results. In addition, despite the different types of anxiety disorders (e.g. social anxiety, social phobia, panic disorder), the GAD-7 only assesses general anxiety. However, general anxiety is

one of the most common anxiety disorders found in the ASD-1 population alongside social anxiety (Smith et al. 2018). To strengthen results and make further claims about potential changes to anxiety before and after the intervention, future researchers should consider using anxiety measures specifically designed for the ASD-1 population.

The MSLSS is a measure of life satisfaction intended for students from the general population. Thus, this measure has not been formally tested for validity and reliability of use on people with ASD-1 or for non-students. The MSLSS measures various life domains through a relatively short self-report measure. Despite the lack of participants who were students in the current study, the MSLSS's domains remained relevant to the current study. This study may be the first to use the MSLSS for the ASD-1 population and for comparing changes in life satisfaction from pre-test to post-test.

Both the GAD-7 and MSLSS were self-report measures and reliant on individuals answering honestly and with accurate self-reflection. Self-reporting, specifically for the ASD-1 population, has been found by some researchers to be an unreliable measure (e.g. Mazefsky, Kao & Oswald, 2011; Berthoz & Hill, 2005). Some problems for the ASD-1 population include alexithymia which is the difficulty with interpreting one's own emotions (Berthoz & Hill, 2005) and deficits with interoception which is the ability to identify one's own physiological and psychological responses to situations (Garfinkel et al. 2015). To reduce these phenomena in future studies, it would be beneficial to incorporate both parent and individual report measures (Cederlund et al. 2010) or provide interoceptive training (Garfinkel et al. 2015) to strengthen results.

In addition, it is important to consider the potential effect of the initial elevation bias when interpreting the results of this study. The initial elevation bias is a phenomenon where

participants who have never completed a specific measure will report heightened negative responses when they are exposed to it for the first time (Anvari et al., 2022). Given that the participants in the current study completed the same measures on two occasions they were susceptible to this bias affecting their pre-test results. The initial elevation bias could have formed the illusion that the post-test results were better following PEERS® for Young Adults when the differences found could have been due to bias. Without control for this type of self-report bias, it is premature for the current study to claim the changes from pre-test to post-test are due to the intervention provided. Future studies are recommended to use alternative measures that assess the same constructs at pre-test and post-test to avoid this bias.

A procedural error in the current study should additionally be noted. There was inconsistency in how the clients were asked to fill out the measures. For example, the pre-test measures were completed in person and took about 30 minutes, whereas the post-test measures were completed in the participants' homes and the participants had access to the measures for a week. This extended access time could have allowed participants the opportunity to edit their responses throughout the week, potentially confounding the results. In addition, the influence of caregivers during the participants' completion of the measures may have been different in the home than in the presence of the research team.

There are additional factors that may have contributed to inaccurate reporting in the current study. For example, where parents were involved in the intervention it is possible that some participants were originally influenced by their parents to participate in the program. Therefore, they may not have had a genuine interest and motivation to better their social skills. This was suspected for participant 2 as he rated all categories of *Friends* on the MSLSS as a satisfaction level of 6 (the highest level). This participant made no reports of social gatherings or

completion of homework tasks. It was suspected this participant provided embellished results to avoid being asked by their parents to return for another round of social skills intervention.

More potential limitations to this study include the level of the participants' participation during the program. It would have been noteworthy to document attendance, distractions during lessons, and homework completion. Some barriers noticed across these categories were participants skipping lessons, joining lessons by zoom due to weather, texting during lessons, stimming and scripting during lessons, or not completing homework. To increase participation, future studies should incorporate a mechanism to track and accommodate for these distractions and potential confounding variables. For example, perhaps following up with participants who join via zoom or troubleshooting homework barriers more thoroughly with the participants who repeatedly skipped these tasks. Keeping track of potential distractions and limits to participation given different lesson formats and motivators may be an interesting research question for future studies. In addition, a related research consideration for the future would be to verify participants' ASD severity through doctor reports. This will help with predicting maladaptive behaviors within the group. For example, participation and learning during intervention may be impacted by excessive levels of stimming which is associated with higher levels of ASD (American Psychiatric Association, 2013).

Another potential barrier to learning was that most participants had their mothers as social coaches (4 out of 5 participants). Some homework involved practicing dating skills with these social coaches which may have felt unauthentic and awkward. The skills practiced in these contexts may be difficult to carry over to use with the participants' true peers. Future researchers may want to consider assigning same-age peers as social coaches or encouraging participants to find peers of the same age as social coaches. Additionally, in-session role-plays deserve the same

consideration. The participants completed multiple role-plays with the researchers, which may have resulted in increased comfort as rapport was established. This comfortable environment may be a good place to start, but bringing in novel communication partners to maintain social pressure may help with further mastery of skills.

4.4. Future Research

The current study demonstrated positive changes that may have yielded more significant results if it were done with a larger number of participants. Despite the presented limitations, this study serves as a potential outline for future researchers interested in exploring the benefits of PEERS® for Young Adults. It is encouraged that future researchers continue investigating the effects of social skills training on anxiety and quality of life for individuals with ASD-1. This will benefit the well-being of the ASD-1 population as they have many qualities predictive of a lower quality of life (e.g. ASD-1 diagnosis, poor social skills, comorbid anxiety). There are also limited evidence-based support programs for young adults with ASD-1 (Moody & Laugeson, 2020). Future research would help provide more support for their successes beyond high school.

Despite many negative factors contributing to an individual's quality of life (e.g. anxiety, ASD diagnosis, loneliness, poor social skills), the current study narrowed its focus on measuring anxiety because of its inverse and previously studied relationship with social skills (e.g. McVey et al., 2016; Factor et al., 2022; Hill et al., 2017). Future researchers are encouraged to provide intervention for some of the other negative predictors of quality of life (e.g. financial or stress management), and measure the change in quality of life over time. This will help guide clinical practice in servicing the young adult population with ASD-1, and support intervention approaches that increase the quality of their lives. In addition, the current study supported the use of group formats as intervention approaches for people with ASD-1 and high anxiety. Future

duplication studies are encouraged to strengthen the results of the current study as the results are based on a small sample (n=5) and were not statistically significant. Future research on anxiety and social skills training would be beneficial to the ASD-1 population in increasing their supportive options as young adults.

The Multidimensional Student Life Satisfaction Scale (MSLSS) provides the opportunity to reflect on the various domains of life (e.g. *Family, Friends, Home, Work, Self*). Future researchers should continue investigating the relationship between quality of life and social skills. Identification of common themes through interview measures can be explored to build a better understanding of the relationship between the domains of life and social skills. While the current study was most interested in the *Friends* domain, future studies are encouraged to look into bettering the quality of life through improvement in other domains of life. For example, there is currently no research on the topic of workplace satisfaction and anxiety for the ASD-1 population. This may be due to the limited number of people with ASD-1 in the workplace compared to neurotypical adults (Shattuck et al., 2012). However, for the people with ASD-1 who are currently working, satisfaction with this domain of life is an area worth researching.

In addition, future research on the benefits of PEERS® for Young Adults on quality of life is encouraged as there is much noted potential given prior research. For example, being in a relationship is predictive of a higher quality of life (Mason et al., 2018), and PEERS® for Young Adults teaches dating skills to help facilitate romantic relationships in the future (Laugeson 2017). Further, loneliness is associated with low quality of life (Kivijärvi et al., 2020), but PEERS® for Young Adults encourages participants to join groups and clubs in order to make new friendships. Finally, social skills deficits are associated with low quality of life (Smith et al.

2019) and PEERS® has been demonstrated to improve social skills which may contribute to a higher quality of life.

There were some variables in the current study that were not controlled. These included who the participants interacted with and practiced the skills on outside of the sessions, whether homework was completed or not, or whether the participants chose to actively or passively participate in the sessions. In addition, participants were susceptible to individual life events that could have affected the results. Specifically, Participant 7 reported experiencing severe mental health episodes nearing the end of sessions and Participant 2 was on a waitlist for a neurological evaluation which could have impacted his ability to accurately complete measures. Future researchers are encouraged to control for some of these factors in their studies to increase validity of results.

4.5. Clinical Implications

There are many professionals whose clientele can benefit from implementing social skills intervention, specifically PEERS® for Young Adults. This study demonstrated that PEERS® for Young Adults could increase satisfaction with some domains of life (e.g. *Home, Family, Self*) and decrease levels of anxiety for individuals with ASD-1. Effective group treatments, such as PEERS® for Young Adults, allow for cost-effective distributions of resources where one clinician can service many clients simultaneously without sacrificing the quality of care. Some of the limiting factors in the current study were participants' inability to pay attention and complete homework. Thus, PEERS® for Young Adults may be suitable as a one-on-one intervention to accommodate participation challenges. In addition, professionals providing services could use survey results from their clients to identify where their clients may be struggling. Clinicians can use measures like the MSLSS to track client progress in individual or group formats. This would

provide the opportunity to revisit missed or challenging concepts from the PEERS® curriculum to better a client's treatment outcome.

CHAPTER 5

CONCLUSION

In conclusion, the research questions in the current study led to claims regarding the PEERS® for Young Adults program and important methodological considerations for future research. First, for the group as a whole, PEERS® for Young Adults reduced anxiety and increased quality of life. The results were insignificant and future research with larger samples and a control group is encouraged to strengthen these findings. Future PEERS® for Young Adults program coordinators and other clinicians using the curriculum should consider making adaptations to encourage better participation and commitment from their participants. The current study is a preliminary exploration of the role social skills intervention can have on anxiety and quality of life.

REFERENCES

- Alegria, M., Shrout, P. E., Canino, G., Alvarez, K., Wang, Y., Bird, H., Markle, S. L., Ramos-Olazagasti, M., Rivera, D. V., Cook, B. L., Musa, G. J., Falgas-Bague, I., NeMoyer, A., Dominique, G., & Duarte, C. (2019). The effect of minority status and social context on the development of depression and anxiety: a longitudinal study of Puerto Rican descent youth. *World Psychiatry, 18*(3), 298-307. doi: 10.1002/wps.20671
- Alverson, C. Y., Lindstrom, L. E., & Hirano, K. A. (2019). High School to College: Transition Experiences of Young Adults With Autism. *Focus on Autism and Other Developmental Disabilities, 34*(1), 52–64. doi: 10.1177/1088357615611880
- American Psychiatric Association. (2013). *Diagnostic and Statistical Manual of Mental Disorders: DSM-5*. American Psychiatric Association.
- Anvari, F., Efendić, E., Olsen, J., Arslan, R. C., Elson, M., & Schneider, I. K. (2022). Bias in Self-Reports: An Initial Elevation Phenomenon. *Social Psychological and Personality Science, 0*(0). doi: 10.1177/19485506221129160
- Bauminger, N., & Kasari, C. (2000). Loneliness and Friendship in High-Functioning Children with Autism. *Child Development, 71*(2), 447–456. doi: 10.1111/1467-8624.00156
- Berthoz, S., & Hill, E. L. (2005). The validity of using self-reports to assess emotion regulation abilities in adults with autism spectrum disorder. *European Psychiatry, 20*(3), 291–298. doi: 10.1016/j.eurpsy.2004.06.013
- Bouman, W. P., Claes, L., Brewin, N., Crawford, J. R., Millet, N., Fernandez-Aranda, F., & Arcelus, J. (2017). Transgender and anxiety: A comparative study between transgender people and the general population. *International Journal of Transgenderism, 18*(1), 16–26. doi: 10.1080/15532739.2016.1258352
- Cederlund, M., Hagberg, B., Gillberg, C. (2010). Asperger syndrome in adolescent and young adult males. Interview, self—And parent assessment of social, emotional, and cognitive problems. *Research in Developmental Disabilities, 31*(2), 287–298. doi: 10.1016/j.ridd.2009.09.006
- Coffman, D. L., & Gilligan, T. D. (2002). Social Support, Stress, and Self-Efficacy: Effects on Students' Satisfaction. *Journal of College Student Retention: Research, Theory & Practice, 4*(1), 53–66. doi: 10.2190/BV7X-F87X-2MXL-2B3L
- Elias, R., & White., S.W. (2018). *Autism Goes to College: Understanding the Needs of a Student Population on the Rise. 48, 732-746.* doi: 10.1007/s10803-017-3075-7

- Factor, R. S., Moody, C. T., Sung, K. Y., & Laugeson, E. A. (2022). Improving Social Anxiety and Social Responsiveness in Autism Spectrum Disorder through PEERS®. *Evidence-Based Practice in Child and Adolescent Mental Health*, 7(1), 142–159. doi: 10.1080/23794925.2021.2013138
- Frith, U., & Happé, F. (2005). Autism spectrum disorder. *Current Biology*, 15(19), R786–R790. doi: 10.1016/j.cub.2005.09.033
- Garfinkel, S. N., Tiley, C., O’Keeffe, S., Harrison, N. A., Seth, A. K., & Critchley, H. D. (2016). Discrepancies between dimensions of interoception in autism: Implications for emotion and anxiety. *Biological Psychology*, 114, 117–126. doi: 10.1016/j.biopsycho.2015.12.003
- Gelbar, N. W., Smith, I., & Reichow, B. (2014). Systematic Review of Articles Describing Experience and Supports of Individuals with Autism Enrolled in College and University Programs. *Journal of Autism and Developmental Disorders*, 44(10), 2593–2601. doi: 10.1007/s10803-014-2135-5
- Hill, T. L., Gray, S. A. O., Baker, C. N., Boggs, K., Carey, E., Johnson, C., Kamps, J. L., & Enrique Varela, R. (2017). A Pilot Study Examining the Effectiveness of the PEERS Program on Social Skills and Anxiety in Adolescents with Autism Spectrum Disorder. *Journal of Developmental and Physical Disabilities*, 29(5), 797–808. doi: 10.1007/s10882-017-9557-x
- Huebner, E. S. (2001). Manual for the Multidimensional Student’s Life Satisfaction Scale. University of South Carolina, Department of Psychology. Columbia, SC.
- Huebner, E.S. (1991) Initial Development of the Student’s Life Satisfaction Scale. *School Psychology International*, 12, 231-240. doi: 10.1177/0143034391123010
- Hyman, S. L., Levy, S. E., Myers, S. M., Council on Children with Disabilities, Section on Developmental and Behavioral Pediatrics, Kuo, D. Z., Apkon, S., Davidson, L. F., Ellerbeck, K. A., Foster, J. E. A., Noritz, G. H., Leppert, M. O., Saunders, B. S., Stille, C., Yin, L., Weitzman, C. C., Childers, D. O., Levine, J. M., Peralta-Carcelen, A. M., Poon, J. K., ... Bridgemohan, C. (2020). Identification, Evaluation, and Management of Children With Autism Spectrum Disorder. *Pediatrics*, 145(1), e20193447. doi: 10.1542/peds.2019-3447
- King, C. Y., & Reeve, A. (2018). Autism Spectrum Disorder Throughout the Life Span. In D. B. Arciniegas, S. C. Yudofsky, & R. E. Hales (Eds.), *The American Psychiatric Association Publishing Textbook of Neuropsychiatry and Clinical Neurosciences*, 6(1). doi: 10.1176/appi.books.9781615372423.sy07
- Kivijärvi, A., Aaltonen, S., Forma, L., Partanen, J., Myllylä, M., & Rissanen, P. (2020). Quality of Life Among Young Finnish Adults not in Employment or Education. *Applied Research in Quality of Life*, 15(3), 757–774. doi: 10.1007/s11482-018-9687-z

- Laugeson, E. (2017). PEERS® for Young Adults: Social Skills Training for Adults with Autism Spectrum Disorder and Other Social Challenges. Routledge.
- Loomes R., Hull L., & Mandy W. P. L. (2017). What Is the Male-to-Female Ratio in Autism Spectrum Disorder? A Systematic Review and Meta-Analysis. *J Am Acad Child Adolesc Psychiatry*. 2017 Jun;56(6):466-474. doi: 10.1016/j.jaac.2017.03.013
- Maddox, B. B., & White, S. W. (2015). Comorbid Social Anxiety Disorder in Adults with Autism Spectrum Disorder. *Journal of Autism and Developmental Disorders*, 45(12), 3949–3960. doi: 10.1007/s10803-015-2531-5
- Marks, S. U., Schrader, C., Longaker, T., & Levine, M. (2000). Portraits of Three Adolescent Students with Asperger’s Syndrome: Personal Stories and How They Can Inform Practice. *Journal of the Association for Persons with Severe Handicaps*, 25(1), 3–17. doi: 10.2511/rpsd.25.1.3
- Mason, D., McConachie, H., Garland, D., Petrou, A., Rodgers, J., & Parr, J. R. (2018). Predictors of quality of life for autistic adults: Quality of life of autistic adults. *Autism Research*, 11(8), 1138–1147. doi: 10.1002/aur.1965
- Mazefsky, C. A., Kao, J., & Oswald, D. P. (2011). Preliminary evidence suggesting caution in the use of psychiatric self-report measures with adolescents with high-functioning autism spectrum disorders. *Research in Autism Spectrum Disorders*, 5(1), 164–174. doi: 10.1016/j.rasd.2010.03.006
- McVey, A. J., Dolan, B. K., Willar, K. S., Pleiss, S., Karst, J. S., Casnar, C. L., Caiozzo, C., Vogt, E. M., Gordon, N. S., & Van Hecke, A. V. (2016). A Replication and Extension of the PEERS® for Young Adults Social Skills Intervention: Examining Effects on Social Skills and Social Anxiety in Young Adults with Autism Spectrum Disorder. *Journal of Autism and Developmental Disorders*, 46(12), 3739–3754. doi: 10.1007/s10803-016-2911-5
- Moeller, R. W., & Seehuus, M. (2019). Loneliness as a mediator for college students’ social skills and experiences of depression and anxiety. *Journal of Adolescence*, 73(1), 1–13. doi: 10.1016/j.adolescence.2019.03.006
- Moody, C. T., & Laugeson, E. A. (2020). Social Skills Training in Autism Spectrum Disorder Across the Lifespan. *Child and Adolescent Psychiatric Clinics of North America*, 29(2), 359–371. doi: 10.1016/j.chc.2019.11.001
- Orsmond G. I., Shattuck P. T., Cooper B. P., Sterzing P. R., Anderson K. A. (2013). Social participation among young adults with an autism spectrum disorder. *J Autism Dev Disord.*, 43(11), 2710-9. doi: 10.1007/s10803-013-1833-8.
- Qualter, P., Vanhalst, J., Harris, R., Roekel, G. H. v., Lodder, G. M. A., Bangee, M., Maes, M., & Verhagen, M. (2015). Loneliness across the life span. *Perspectives on Psychological Science*, 10(2), 250-264. doi: 10.1177/1745691615568999

- Rodgers, J., Farquhar, K., Mason, D., Brice, S., Wigham, S., Ingham, B., Freeston, M., & Parr, J. R. (2020). Development and Initial Evaluation of the Anxiety Scale for Autism-Adults. *Autism in Adulthood*, 2(1), 24–33. doi: 10.1089/aut.2019.0044
- Shattuck P. T., Narendorf S. C., Cooper B. P., Sterzing P., Wagner M., Taylor J. L. (2012) Postsecondary education and employment among youth with an autism spectrum disorder. *Pediatrics*. 129, 1042–1049. doi: 10.1542/peds.2011-2864
- Smith, I. C., Ollendick, T. H., & White, S. W. (2019). Anxiety moderates the influence of ASD severity on quality of life in adults with ASD. *Research in Autism Spectrum Disorders*, 62, 39–47. doi: 10.1016/j.rasd.2019.03.001
- Spitzer, R. L., Kroenke, K., Williams, J. B. W., & Löwe, B. (2006). A brief measure for assessing generalized anxiety disorder: The GAD-7. *Archives of Internal Medicine (1960)*, 166(10), 1092-7. doi: 10.1001/archinte.166.10.1092
- White, S. W., Ollendick, T. H., & Bray, B. C. (2011). College students on the autism spectrum: Prevalence and associated problems. *Autism*, 15(6), 683–701. doi: 10.1177/1362361310393363

APPENDIX A: GENERAL ANXIETY SCALE, 7-ITEM (GAD-7)

GAD-7 Anxiety

Over the last two weeks, how often have you been bothered by the following problems?	Not at all	Several days	More than half the days	Nearly every day
1. Feeling nervous, anxious, or on edge	0	1	2	3
2. Not being able to stop or control worrying	0	1	2	3
3. Worrying too much about different things	0	1	2	3
4. Trouble relaxing	0	1	2	3
5. Being so restless that it is hard to sit still	0	1	2	3
6. Becoming easily annoyed or irritable	0	1	2	3
7. Feeling afraid, as if something awful might happen	0	1	2	3

Column totals _____ + _____ + _____ + _____ =

Total score _____

If you checked any problems, how difficult have they made it for you to do your work, take care of things at home, or get along with other people?			
Not difficult at all	Somewhat difficult	Very difficult	Extremely difficult
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

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

Scoring GAD-7 Anxiety Severity

This is calculated by assigning scores of 0, 1, 2, and 3 to the response categories, respectively, of “not at all,” “several days,” “more than half the days,” and “nearly every day.” GAD-7 total score for the seven items ranges from 0 to 21.

0–4: minimal anxiety

5–9: mild anxiety

10–14: moderate anxiety

15–21: severe anxiety

APPENDIX B: MULTIDIMENSIONAL STUDENT LIFE SATISFACTION SCALE (MSLSS)

Multidimensional Students' Life Satisfaction Scale

The MSLSS was designed to provide a holistic assessment of the wellbeing of young people. It has five subscales: family, friends, school, living environment and self. Each segment can be considered separately. It is a validated tool, and has been tested for effectiveness in the USA and middle east.

Data is available on the average scores of a diverse sample of 313 American students aged 14 – 18, which can act as a comparison.

		1	2	3	4	5	6
	<u>School</u>	Strongly Disagree	Moderately Disagree	Slightly Disagree	Slightly Agree	Moderately Agree	Strongly Agree
17	I look forward to going to school.						
18	I like being in school.						
19	School is interesting.						
20	I wish I didn't have to go to school.*						
21	There are many things about school I don't like.*						
22	I enjoy school activities.						
23	I learn a lot at school.						
24	I feel bad at school.*						

		1	2	3	4	5	6
	<u>Family</u>	Strongly Disagree	Moderately Disagree	Slightly Disagree	Slightly Agree	Moderately Agree	Strongly Agree
1	I enjoy being at home with my family.						
2	My family gets along well together.						
3	I like spending time with my parents.						
4	My parents and I doing fun things together.						
5	My family is better than most.						
6	Members of my family talk nicely to one another.						
7	My parents treat me fairly.						

	<u>Friends</u>	Strongly Disagree	Moderately Disagree	Slightly Disagree	Slightly Agree	Moderately Agree	Strongly Agree
8	My friends treat me well.						
9	My friends are nice to me.						
10	I wish I had different friends.*						
11	My friends are mean to me.*						
12	My friends are great						
13	I have a bad time with my friends.*						
14	I have a lot of fun with my friends.						
15	I have enough friends.						
16	My friends will help me if I need it.						

		1	2	3	4	5	6
	<u>Living Environment</u>	Strongly Disagree	Moderately Disagree	Slightly Disagree	Slightly Agree	Moderately Agree	Strongly Agree
25	I like where I live.						
26	I wish there were different people in my neighborhood.*						
27	I wish I lived in a different house.*						
28	I wish I lived somewhere else.*						
29	I like my neighborhood.						
30	I like my neighbors.						
31	This town is filled with mean people.*						
32	My family's house is nice.						
33	There are lots of fun things to do where I live.						

		1	2	3	4	5	6
	<u>Self</u>	Strongly Disagree	Moderately Disagree	Slightly Disagree	Slightly Agree	Moderately Agree	Strongly Agree
34	I think I am good looking.						
35	I am fun to be around.						
36	I am a nice person.						
37	Most people like me.						
38	There are lots of things I can do well.						
39	I like to try new things.						
40	I like myself.						

BIOGRAPHY OF THE AUTHOR

Alysha Dagg was born in Toronto, Ontario, Canada on March 25, 1996. She was raised in Trenton, Ontario and graduated from Carleton University in 2018 with a Bachelor of Cognitive Science. Alysha worked in the communication disorders field, got married and moved to Fredericton, New Brunswick before starting her Master's program at The University of Maine in the Fall of 2021. After receiving her degree, Alysha will pursue Speech and Language Pathology in Ottawa, Ontario. Alysha is a candidate for the Masters of Arts Degree in Communication Sciences and Disorders from the University of Maine in May 2023.