

Rowan University

Rowan Digital Works

Theses and Dissertations

6-6-2023

NEURODIVERGENT COLLEGE STUDENTS AND THERAPY DOGS IN HIGHER EDUCATION

Georgia Jean Majka
Rowan University

Follow this and additional works at: <https://rdw.rowan.edu/etd>



Part of the [Accessibility Commons](#), [Higher Education Commons](#), and the [Psychology Commons](#)

Recommended Citation

Majka, Georgia Jean, "NEURODIVERGENT COLLEGE STUDENTS AND THERAPY DOGS IN HIGHER EDUCATION" (2023). *Theses and Dissertations*. 3127.

<https://rdw.rowan.edu/etd/3127>

This Thesis is brought to you for free and open access by Rowan Digital Works. It has been accepted for inclusion in Theses and Dissertations by an authorized administrator of Rowan Digital Works. For more information, please contact graduateresearch@rowan.edu.

**NEURODIVERGENT COLLEGE STUDENTS AND THERAPY DOGS IN
HIGHER EDUCATION**

by

Georgia Jean Majka

A Thesis

Submitted to the
Department of Education Services and Leadership
College of Education

In partial fulfillment of the requirement

For the degree of

Master of Arts in Higher Education

at

Rowan University

May 2, 2023

Thesis Chair: Stephanie Lezotte, Ph.D., Assistant Dean, School of Graduate Studies

Committee Members:

Andrew Tinnin, Ed.D., Associate Vice President for Student Life

Tyrone McCombs, Ph.D., Associate Professor, Educational Services and Leadership

© 2023 Georgia Jean Majka

Dedications

Dedicated to all the neurodivergent individuals pursuing a degree in higher education.

Dedicated to all the hard-working neurodivergent college students who have continued to overcome the obstacles that once doubted them.

Dedicated to all individuals who advocate for equal opportunities for neurodivergent students in education.

This study is dedicated to anyone passionate about neurodiversity and making a difference in higher education.

Acknowledgments

I would like to thank my seminar professor and thesis chair Dr. Lezotte for her endless support. Without her support and motivation along this journey, I would not have pushed myself beyond my comfort zone and completed a thesis. Thank you.

I would also like to thank my mentor Chiara Latimer for consistently pushing me every day to be a better person than I was yesterday. I also thank you for teaching me the importance of advocacy in neurodiversity.

I would also like to thank John Woodruff for his endless support, leadership, knowledge, and kindness throughout my academic journey.

I would also like to thank Michele Pich for providing me with the opportunity to work with The Shreiber Family Pet Therapy Program. I have learned and grown beyond measure.

Lastly, I thank my family for always supporting me along my academic and life journey. As they always say, “It’s not about the ride, it's who is riding beside you”.

Thank you.

Abstract

Georgia Jean Majka
NEURODIVERGENT COLLEGE STUDENTS AND THERAPY DOGS IN HIGHER
EDUCATION
2022-2023
Stephanie Lezotte, Ph.D.
Master of Arts in Higher Education

The purpose of this study is to examine neurodivergent students in higher education and their experience with The Shreiber Family Pet Therapy Program at Rowan University to investigate whether therapy dogs reduce anxiety levels and provide relaxation. In addition, this study provides recommendations for The Shreiber Family Pet Therapy program at Rowan University to promote the program and its purpose on campus. These resources are important when discussing the neurodivergent student population in higher education, which this research study discusses, based on previous research and the results found from this quantitative approach. This study also makes recommendations for Rowan University and how the pet therapy program can be promoted more and also attend larger public campus events like career fairs and other events.

Table of Contents

Abstract.....	v
List of Tables.....	ix
Chapter 1: Introduction.....	1
Statement of the Problem.....	2
Significance of the Problem.....	2
Purpose of the Study	3
Assumptions and Limitations	3
Operational Definition of Terms.....	4
Research Questions.....	4
Organization of Study	4
Chapter 2: Literature Review	6
Introduction	6
The Americans with Disabilities Act of 1990	6
Disability.....	7
The Americans with Disabilities Act in Higher Education	7
The Neurodiversity Movement	8
Neurodiversity in Higher Education.....	9
Autism Spectrum Disorder.....	9
Autism Spectrum Disorder in Young Adults	10
Students with Autism Spectrum Disorder	11
Student Support Services for Students with ASD	12

Table of Contents (Continued)

Therapy Dogs Versus Service Dogs.....	13
Animal-Assisted Therapy (AAT).....	13
Therapy Dogs and Mental Health.....	15
Therapy Dogs in Higher Education	15
Neurodivergent Students and Anxiety	17
Theoretical Framework.....	18
Malsow’s Hierarchy of Needs	18
Physiological Needs.....	19
Safety Needs.....	19
Belongingness and Love Needs.....	19
Esteem Needs.....	20
Self-Actualization Needs	20
Conclusion	21
Chapter 3: Methodology	22
Context of Study	22
Population and Sampling	23
Data Instrument and Collection.....	23
Data Analysis	24
Chapter 4: Findings.....	25
Profile of Sample	25
Chapter 5: Summary, Discussion, Conclusions and Recommendations	31
Summary of Study.....	31

Table of Contents (Continued)

Discussion..... 31

 Research Question 131

 Research Question 232

Recommendations for Practice33

Recommendations for Further Research.....33

Conclusions.....34

References.....35

List of Tables

Table	Page
Table 1. Q9- Did You Find Petting a Dog Relaxing?	26
Table 2. Q10-- Did You Feel Less Anxious After Petting a Therapy Dog?	27
Table 3. Q1- Have You Ever Heard of Rowan University's Shreiber Family Pet Therapy Program?	28
Table 4. Q4- Do You Like Having Therapy Dogs on Campus?.....	29
Table 5. Q5- How Did You Hear About The Event Today?	29
Table 6. Q8- Did You Have a Positive Experience At The Pet Therapy Event Today?.....	30

Chapter 1

Introduction

Today, the number of students in higher education who identify as neurodiverse is increasing significantly (Cooper, 2016). To identify as neurodiverse means that an individual has been diagnosed with one of the following identities: Attention Deficit Disorder, Attention Deficit-hyperactivity disorder, obsessive-compulsive disorder, dyslexia, and many more (Cooper, 2016). Neurodiversity is in education, the workplace, and in society whether it is visible or not. Over time, higher education professionals have been more welcoming to minds of all kinds and making their classrooms more inclusive. Even though higher education professionals are becoming more educated on neurodiversity, the need for awareness is still lacking (Cooper, 2016). As times are changing, so is the language and culture as neurodiversity is becoming more welcomed in education, the workplace and other functional spaces.

In addition to neurodivergent students in higher education increasing, the use of therapy dogs in education is also increasing. Therapy dogs are being used in education to increase the sense of belonging across student populations (Grové et al., 2021). Therapy dogs have provided therapeutic support for students and participate in reading-assisted activities to help reduce stress of students (Grové et al., 2021). Individuals who identify as neurodiverse may encounter some challenges in education, the workplace, and other public spaces. Specifically, in education support for neurodiverse students may not be accessible to everyone or the support may be lacking. Higher education institutions welcome neurodiversity to their institutions and want more inclusivity. For example, Rowan University, where this study took place, has a club for neurodiversity, a building

for neurodiversity, and the Autism PATH Program that individuals can utilize for several of their needs. Some of these needs may include one-on-one student coaching, interview practice, job search, and social networking. This creates a safe place for neurodivergent students to build connections and have a comfortable space where they can choose to be themselves. It is important that neurodiverse students feel included in education and with the right resources, neurodivergent individuals will feel welcomed and increase that sense of self-belonging through the midst of their academic journey.

In addition to extra educational resources for students who identify as neurodivergent, higher education institutions also provide therapy dogs interactions for the campus population. At Rowan University, the Shreiber Pet Therapy Program is available to all students, faculty, and staff on campus. Specifically, the Shrieber Pet Therapy Program provides services like Animal-Assisted Therapy, one-on-one de-stress time, group events, and other public campus events. All of these services are available to students upon request.

Statement of the Problem

As more neurodivergent students are entering college the challenges they encounter in their transition is not giving all students an equal opportunity for success in the classroom (Cooper, 2016). Neurodivergent college students deserve equal opportunities, equal rights, social acceptance, appropriate accommodations, and motivation from their peers to succeed (Cooper, 2016).

Significance of the Problem

Due to the increase of neurodivergent students in higher education, the resources to support students are important. According to previous research, it is expected that the

number of neurodivergent students will continue to increase over the next several years (Cooper, 2016). As the neurodivergent student population increases, the demand for higher education grows stronger. The need for higher education professionals to support these students will be the key to providing equal opportunities for success in their academic and future lives (Cooper, 2016).

Purpose of the Study

The purpose of this study is to investigate whether neurodivergent college students benefit from therapy dogs being on college campuses. The study will survey neurodivergent students at a pet therapy event they attended at Rowan University. Furthermore, the purpose of this study is to also see how useful it is for college campuses to have pet therapy programs on their campuses. This quantitative study is narrowed down by focusing on students who identify as neurodivergent. Specifically, this study will show whether students utilize Rowan University's pet therapy program on campus. The rationale behind this study is to examine the positive effects of therapy dogs in higher education.

Assumptions and Limitations

The data used for this study will be collected from neurodivergent students on campus who attended a pet therapy event and completed the survey. In addition, if participants answer yes to identifying as neurodivergent it can be assumed that students have disclosed to me that they identify with a neurodivergent identity. Rowan's pet therapy program is rather new, and readers should consider that the Shreiber Pet Therapy Program is still being established in their interpretations of the findings. These findings may differ from pet therapy programs that have been established for a longer period of time.

Operational Definition of Important Terms

- **Neurodivergent:** An umbrella term used to identify individuals with neurodivergent identities like ADHD, ADD, Dyslexia, and others.
- **American Disabilities Act (ADA):** The document is designed to serve equal opportunity in all settings of education, employment, public settings, and education for people with disabilities.
- **Therapy Dog:** A professionally trained working dog trained to provide comfort and happiness to society without performing specific tasks for its owner.

Research Questions

Two research questions will be accessed and discussed throughout the study.

RQ1: What impact, if any, do therapy dogs have on helping neurodivergent college students' anxiety levels and help them relax?

RQ2: What general perceptions do neurodivergent students hold about the pet therapy program at Rowan?

Organization of Study

Chapter II presents an overview of the current scholarly literature surrounding neurodivergent college students in higher education and also discusses therapy dogs in higher education.

Chapter III discusses the methods used for this study and explains the profile of the sample being examined.

Chapter V discusses the research questions used for the study and the findings from the quantitative survey.

Chapter IV discusses how the research questions connect to the results shown. Conclusions and future research recommendations are included in this chapter.

Chapter 2

Literature Review

Introduction

As the number of neurodivergent students in higher education increases, the need for adaptable higher education professionals is essential (Clouder et al., 2020). Adaptable higher education professionals are important for breaking barriers faced in the classroom (Liu, 2017). Neurodiversity is present in education, the workplace, public places, and our society. As more higher education professionals adapt to inclusive learning styles, the classroom will transition into a place of equal opportunity (Cooper, 2016). This literature review will discuss the neurodivergent student population and their academic success, workplace success, and therapy dogs in education. Therapy dogs have been very progressive throughout education and the research discussed will examine findings of how therapy dogs are beneficial for neurodivergent students.

The Americans with Disabilities Act of 1990

The Americans with Disabilities Act of 1990 protects individuals that have disabilities from discrimination and unfair treatment in many areas of their lives such as public transportation, education, employment, and public spaces (ADA The National Network, n.d.b.). Additionally, the ADA protects against disability discrimination in all public sectors including public colleges and universities (Denbo, 2003). The Americans with Disabilities Act of 1990 (ADA) was signed by President George H.W. Bush at the White House on July 26, 1990, and it became a part of the justice system. Once the ADA was signed by Congress, segregation, and exclusion of individuals with disabilities were considered discrimination (Mayerson, 1992). The Rehabilitation Act of 1973 protects

disabled individuals from employment discrimination in the hiring, retaining, and promoting process (Employer Assistance and Resource Network on Disability Inclusion, 2022).

Disability

Disability comes in many forms, and all are different from one another (Pino & Mortari, 2014). Examples of different types of disabilities are cancer, diabetes, post-traumatic stress disorder, autism, traumatic brain injury, intellectual disabilities, and major depressive disorder. Having a disability means that an individual cannot complete major life activities. Major life activities are tasks that cannot be completed without assistance from another person. Major life activities are eating, sleeping, breathing, speaking, walking, standing, and several others (U.S. Department of Justice Civil Rights Division, nd). The ADA National Network also states that major life activities are tasks that are essential to one's life and are usually performed daily. The major life events also include major bodily functions like normal cell growth, brain function, immune system function, endocrine system, and other important systems of the human body (ADA National Network, n.d.a.).

The Americans with Disabilities Act in Higher Education

Even before The Americans with Disabilities Act of 1990 was signed by Congress, disability law had already entered the education system. After Section 504 of the Rehabilitation Act of 1973 was signed, individuals who were applying to a higher education institution could no longer be denied based on their disability (Rothstein, 2015). Under the Americans with Disabilities Act and Section 504 of the Rehabilitation Act, Colleges and universities became obligated to provide equal opportunity for students

with disabilities. To provide equal opportunity in higher education for students, colleges and universities must have academic accommodations as an available resource (Denbo, 2003). These academic accommodations for students are designed to accommodate individual needs to achieve equal opportunity for success. Academic accommodations are approved through credible documentation of a student's disability and may explain what academic accommodations the individual has been approved for (Denbo, 2003).

The Neurodiversity Movement

The word neurodiversity came to life around 1998 at the same time the autism rights movement began. The neurodiversity movement was led by neurodivergent individuals and neurodivergent activists. Kapp (2020) explains that neurodiversity is defined as the variation of neurocognitive functioning in individuals who identify as neurodivergent. Pollak (2009) examines how the word neurodiversity was designed to include all types of people and support those with atypical minds; it is an umbrella term used for individuals who may identify with Dyslexia, Attention Deficit Hyperactivity Disorder, Attention Deficit Disorder, Obsessive-compulsive Disorder, and several others.

Furthermore, Houting (2019) and Kapp (2020) examine how the neurodiversity movement has evolved from when it first started in 1998. The word neurodiversity has been a transition for people who are being newly introduced to the term. People who identify with autism as well as autistic researchers have been skeptical of the neurodiversity movement and because of that, they critiqued its paradigm (Kapp 2020). In addition to the critique of the neurodiversity movement, society is questioning its advocacy for neurodivergent people and whether it promotes inclusivity (Kapp 2020). Pollak (2009) and Kapp (2020) both describe neurodiversity as inclusive to all

individuals while encouraging personal development in order to achieve and maintain an inclusive environment.

Neurodiversity in Higher Education

Over time, neurodiversity in higher education has become more common among the student population. Cooper (2016) states that the number of neurodivergent students entering college is going to noticeably increase over time. The transition to college can bring many challenges for neurodivergent students entering college, putting additional stress on the student, their families, and the higher education institution they attend. Due to the possible challenges, it is important that resources for neurodiverse students are implanted in the classroom (Cooper, 2016). Clouder et al. (2020) claim that the increase of neurodivergent students entering higher education “poses a shared and growing challenge internationally for teachers and institutional leaders” (p. 757). Section 504 of the 1973 Rehabilitation Act and the Americans with Disabilities Act of 1990 were both amended in 2008. Cloudeet al. (2020) also states that students with disabilities are approximately 41% of the student population, and this translates to approximately three million of the student population who attend higher education institutions.

Autism Spectrum Disorder

Autism Spectrum Disorder (ASD) is defined as a developmental disability that has several impairments including abnormal use of speech and language, challenges in social environments, and repetitive behaviors (Cooper, 2016). At a point in time, people who were diagnosed with high-functioning ASD were labeled as having Asperger Syndrome. There remains some confusion about ASD even though ASD is continuing to grow in society (Sayman, 2015). Diagnosing ASD is usually a process and individuals

who are diagnosed with autism spectrum disorder will undergo a series of testing to reach the correct diagnosis. The test that most psychiatrists use today is The Diagnostic and Statistical Manual of Mental Disorder but for short most know it as DSM IV-TR (Cooper, 2016).

According to The Diagnostic and Statistical Manual of Mental Disorder fifth edition, individuals who are on the autism spectrum have deficits in various areas of social engagement like social interaction, social cues, communication, and the expression of feelings (American Psychiatric Association, 2013). Other areas of difficulty are verbal and nonverbal communication, which affects the individual's ability to form relationships or have stable employment (American Psychiatric Association, 2013). The social challenges and communication deficits make the ability of individuals with Autism to have a stable job even harder. If individuals with Autism are taught social skills in their youth, they are more likely to maintain employment (Rosales & Whitlow, 2019).

Due to this, there are many people with Autism who are unemployed because they cannot perform tasks, communicate correctly, or work without supervision (Rosales & Whitlow, 2019).

Autism Spectrum Disorder in Young Adults

After graduating from high school, individuals with Autism transition into young adults and experience more disconnect than their other peers with intellectual disabilities. It has been found that younger children with Autism respond with more positive personal beliefs versus unhappy negative responses from young adults with Autism (Roux et al., 2015). The Center for Disease Control and Prevention (2022) indicated that approximately from the years 2009 to 2017, 17% of children from ages three to 17 years

were diagnosed with Autism, Attention Deficit Disorder, Attention Hyperactivity Disorder, and others. This translates to one in six people who were diagnosed, and no data has been updated since then from this source (Center for Disease Control and Prevention, 2022).

Students with Autism Spectrum Disorder

In higher education, there are several demographics that build a unique student population. As of 2014, the number of students with Autism Spectrum in higher education has shown numbers never seen before (Anderson et al., 2019). In recent years, the number of students with autism spectrum disorder has increased significantly and is only supposed to grow more over time (Cooper, 2016). As the numbers significantly grow, the demand for resources is growing as well. Eventually, higher education institutions will need more support than they have already for their students who are on the Autism Spectrum (Pinder-Amaker, 2014). ASD is complex and fluid in many ways including its evolving definitions and characteristics. According to previous research, these characteristics are impaired social interaction, awkward body moves, lack of eye contact, and difficulty staying organized (Sayman, 2015). Students with ASD are in a vulnerable place when they must discuss their disability and needs with professors.

Young adults entering college with Autism Spectrum are growing and their graduation rate is lower than their peers who are not on the Autism Spectrum. Students on the Autism Spectrum are taking six years on average to complete their college degrees (Gobbo & Shmulsky, 2013). The graduation gap for students with ASD and their peers reflects how ASD must be discussed in post-secondary education to achieve the best academic success. The percentage of students graduating college after six years with

ASD was 38% which was 51% of the population (Gobbo & Shmulsky, 2014). When students with autism spectrum disorder attend college, they are faced with new challenges like self-advocacy, new social settings, and a new academic structure. This transition process is their next stage into adulthood and academic achievement. The adjustment period can be a long process for students with ASD and this process looks different for every individual. This is the next stage in their adult life and the need for assistance throughout this process is in high demand. There are overlapping themes between autism spectrum disorder characteristics and ADHD in which they both experience academic struggles and poor performance. On average between two and 8% percent of students have ADHD and 25% of this population have academic accommodations with ADHD (Elias & White, 2018).

Student Support Services for Students with ASD

Student support services are critical for students with autism spectrum disorder and their academic success. Cai and Richdale (2015) explain that without the proper academic support services, students with high-functioning autism spectrum disorder will slip through the cracks of education and may not complete all educational requirements. Similarly, Goodall (2018) examined the experiences of students on the Autism Spectrum who felt excluded in their school environment in several areas. The idea is that inclusion for students on the Autism Spectrum in mainstream education can be achieved with the correct student support programs for this specific student population. Sayman (2015) states the assumption that high-functioning autism spectrum disorder is a mild version of Autism has been corrected with the statement that “mild does not mean ‘not serious’” (Sayman, 2015, p. 79).

Therapy Dogs Versus Service Dogs

Therapy dogs are used in many settings and some of these settings are formal whereas others are informal. Training therapy dogs is a process that both the dog and the handler go through together (Jalongo, 2015). Therapy dogs are professionally trained animals and although they do not perform tasks like service dogs, they are still considered working dogs (Jalongo, 2015). Even though therapy dogs and service dogs are both working dogs, they both serve different purposes and have very unique roles. Specifically, service dogs perform tasks for people with disabilities. Service dogs will assist their handlers if they have a disability that requires assistance in completing a task and an example would be seeing eye dogs for the blind. Therapy dogs are working dogs but also family dogs and they are not trained to perform any tasks for an individual (Jalongo 2015).

Animal-Assisted Therapy (AAT)

Therapy dogs can work in several different environments. Some of these settings are public therapy dog events for people to stop by and interact with. Other interactions include personal intimate therapy sessions where a therapy dog is present but does not have to engage (Grové et al., 2021). The therapy dog is there for the individual to interact with, but the dog is not required to perform a task (Grové et al., 2021). In a one-on-one AAT setting the handler of the therapy dog must be HIPPA trained for the confidentiality of the patient's information (Therapet Animal Assisted Therapy n.d.). In AAT, animals are used to achieve goals in treatment sessions. Some of these goals may be emotional, physical, mental, or social (Therapet Animal Assisted Therapy, n.d.) London et al. (2020) have suggested that Animal-Assisted Therapy is beneficial for individuals on the Autism

Spectrum because they can feel a connection and sense of comfort through non-verbal communication factors. Watts and Everly (2009) explain what makes AAT unique from other working dogs is that Animal-Assisted Therapy Dogs are used in a professional therapy setting to enhance positive therapeutic results. The Delta Society also referred to as Pet Partners, is an organization that promotes human health through the bond with an animal (Pet Partners, 2020). At Pet Partners their mission is to focus closely on well-being while building the human-animal bond (Pet Partners, 2020). In addition, their mission defines Animal-Assisted Therapy as, “a goal-directed intervention in which an animal is incorporated as an integral part of the clinical healthcare treatment process” (Watts & Everly, 2009, p. 34).

Animal-Assisted Therapy has shown positive results such as improved communication skills. Participants have also shown signs of decreased repetitive behaviors after engaging in Animal-Assisted Therapy (London et al., 2020). For individuals that have physical disabilities, Animal-Assisted Therapy can be very helpful for improving physical activity and be motivational to staying active (London et al., 2020). AAT is useful for establishing many skills in settings like education, maintaining a schedule, and goal setting. Goal setting may include educational goals or personal goals and maintaining a schedule can be for many aspects of life (Armstrong, 2015). Winkle and Jackson (2012) believe that incorporating animals into therapy for individuals who need to improve their motor skills would benefit from this type of therapy. A simple task like walking a dog to improve gross motor skills or guiding a dog through an obstacle course is another method that therapy dogs can be used in therapy. Winkle and Jackson

(2012) explain that other skills such as cognitive skills could be focused on by making dog treats or feeding dogs treats while balancing on a balance beam.

Therapy Dogs and Mental Health

As the demand for counselors on college campuses has grown, it has been found that interacting with a therapy dog between exam periods is beneficial for students (Jalongo, 2021). Therapy dog intervention is at no cost to the student and can reach a larger population of students at a faster rate. These interventions with therapy dogs do not require the same resources as counseling and can be more appealing to students when they see therapy animals (Jalongo, 2021). College students are battling depression, loneliness, hopelessness, and suicidal thoughts but therapy dogs on campus are motivating students to seek help. In fact, at Florida State University it was easier for students to approach counseling staff in an informal setting while attending a “Stress Buster Day” where students could interact with therapy dogs (Jalongo, 2021).

Therapy Dogs in Higher Education

Therapy dogs are being used in multiple levels of education and the number of college students with pets has increased. More college students are getting pets for companionship and human-canine relationships. A small college located in St. Petersburg, Florida, has allowed students to have support animals on their campus since 1973 (Jalongo, 2021). Eckerd College is a small private institution with a student enrollment of 1,800 students and there are approximately 200 support animals. Some of these animals are dogs, cats, hamsters, and lizards (Jalongo, 2021). Eckerd College students stated that they feel leaving their pets behind at home while they transition to college is leaving an essential part of their lives behind. Due to this, Eckerd College

allowed students to bring their animals in hopes that it would help them transition into college (Jalongo, 2021).

The purpose of therapy dogs on college campuses is to provide stress relief to students who may be under stress or during challenging times. College campuses first started seeing therapy dogs during the '90s with the purpose of assisting individuals with depression and emotional distress (McDonald et al., 2022). During this study, students showed lower blood pressure results based on their engagement with a therapy dog which brought them to a more relaxed state (McDonald et al., 2017). The exposure to therapy dogs is beneficial for students who experience many levels of stress and anxiety and validates the importance of therapy dog presence on college campuses. McDonald et al., (2017) discovered that since When therapy dogs were first introduced to college campuses, their presence has grown and become more significant to student success. Therapy dogs have made an impact on many students who are challenged with life struggles.

Therapy dogs are active at all levels starting in early education to post-secondary education to higher education. It is suspected that having therapy dogs in education enhances learning, well-being, and academic achievement (The SAGE Encyclopedia of Theory in Counseling and Psychotherapy, 2015) the use of therapy dogs in education is to help improve learning outcomes and positive attitudes toward learning (The SAGE Encyclopedia of Theory in Counseling and Psychotherapy, 2015). In recent years the number of college students seeking professional counseling has increased which has caused a greater demand for counselors, but it is a challenge for a small group of counselors to assist such a big population of students (Quintana et al., 2019). Relationships with

animals provide people with a sense of safety and comfort which also influences their well-being.

Neurodivergent Students and Anxiety

It has been found that neurodivergent students have also shown signs of anxiety which is most often a result of the stressful transition to college. Research shows that neurodivergent college students who are diagnosed with ADHD have high levels of anxiety (Prevatt et al., 2015). In addition to having ADHD and anxiety, research has also found a connection to cognitive deficits including working memory difficulties and challenges with daily life functioning (Prevatt et al., 2015). College students specifically are managing the challenges of change, academic stressors, and adapting to social life and the college lifestyle which can lead to increased anxiety levels. Individuals that manage anxiety and have ADHD may also not perform as well academically or have a high quality of life (Prevatt et al., 2015).

Neurodivergent students who experience anxiety and the struggle to find their belonging is connected to the elements in the pyramid of Maslow's Hierarchy of Needs. It is more likely that neurodivergent students with anxiety have a lower quality of life causing them to become anti-social, struggle in social environments, and struggle academically, and in personal relationships (Prevatt et al., 2015). Maslow's Hierarchy of Needs explains the importance of sense of belonging and love needs as well as self-actualization. Self-actualization focuses on personal growth and self-fulfillment and for neurodivergent students who have anxiety, this is very important for their sense of belonging on campus and also for their own personal growth as a person, student, and their future outside of college (McLeod, 2018).

Theoretical Framework

Maslow's Hierarchy of Needs

Maslow's Hierarchy of Needs Theory of Motivation (1970) focuses on human needs in a hierarchical framework through a pyramid model. This theory will be used in this study to examine the needs of neurodivergent students in education. Maslow's Hierarchy of needs will connect the needs of neurodivergent students in higher education and how these needs must be met to meet their highest potential of success. The pyramid model shows the several hierarchical levels of human needs starting with psychological needs, security, belongingness, esteem, and self-actualization (Mathes, 1981). Maslow's Hierarchy of Needs can be divided into two different types of human needs which are Deficiency Needs and Growth Needs. When referencing Maslow's Hierarchy of Needs pyramid model, the very top of the pyramid is Self-Actualization which leaves Esteem, Love/Belonging, Safety, and Psychological as Deficiency Needs (McLeod, 2007). For the hierarchical needs to be achieved, all levels of the pyramid must be fulfilled since this theory reflects human development and needs for survival.

Maslow's Hierarchy of Needs Pyramid Model is often described as a ladder, and one must advance step by step to reach the top of the summit. Maslow (1943) also assumed that no human would be able to meet all levels of the pyramid and that one level would dominate them. In other words, Maslow is saying that he thinks no human could have all five of the needs for survival met (The SAGE Encyclopedia of Theory in Counseling and Psychotherapy, 2015). This theory is a guide to human development and can also serve as a guide to living (Mathes, 1981). For all needs on Maslow's Hierarchical Pyramid

Model to be met, it is crucial that all of the lower levels of needs are satisfied (Shi & Lin, 2020).

Physiological Needs

Physiological needs are the needs that are essential for a human being to survive. Examples of physiological needs are shelter, clothing, food, drinks, sexual activity, air, and lastly warmth. All of these needs are considered basic needs (McLeod, 2018). These physiological needs are what help humans function properly and survive. Since these physiological needs are mandatory to human survival, without these needs met humans will not reach their full potential. When physiological needs and well-being are met, human brain function is enhanced and improved (Vansteenkiste & Ryan, 2013).

Safety Needs

Safety needs are also considered the basic needs of Maslow's Hierarchy of Needs. Under Safety Needs include needs such as safety and security. Security is the sense of safety from law enforcement, protection from danger, and freedom of fear (McLeod, 2018). On the model pyramid, Safety Needs is the second section from the bottom which can only be met when Physiological Needs have been met. The feeling of security and freedom of fear will look different for every individual as their needs are met differently as well (McLeod, 2018).

Belongingness and Love Needs

Belonging and Love Needs are third from the bottom of Maslow's Hierarchy of Needs Pyramid Model. These needs are psychological needs for humans. Belongingness and Love need intimate relationships and friendships (McLeod, 2018). These needs can only be satisfied once the feeling of safety and security has been met. Interpersonal

relationships are what motivate humans and their behavior (McLeod, 2018). The sense of belonging occurs in several areas of relationships and environments like workspace, education, relationships with a significant other, and family. It is challenging for humans to separate their want for a sense of belonging from their mental health (Theisen, 2021).

Esteem Needs

Esteem needs are also classified as psychological needs for human survival. Esteem needs also serve two types of needs for humans. There are esteem needs for oneself and the desire to show respect to others (McLeod, 2018). Esteem needs for self are characteristics like self-dignity, achievement, and independence whereas the desire to show respect for others is more focused on reputation. Since the desire to respect others is reputation-focused, humans must meet personal esteem needs to reach their full potential (McLeod, 2018).

Self-Actualization Needs

Self-Actualization Needs is the last and highest level of the pyramid model to complete Maslow's Hierarchy of Needs. In this stage, humans will realize that they do have the potential to succeed in their life. Self-Actualization is the realization of self-fulfillment, personal growth, and experiences and lastly acknowledging one's potential (McLeod, 2018). At this stage, humans have accepted themselves for who they are despite all their flaws and perceived limitations. Self-Actualization will look different for everyone as their perceived flaws and limitations are unique from one another (Shi & Lin, 2020).

Conclusion

Neurodiversity and therapy dogs in higher education are on the rise. In previous research, Therapy Dogs have been found to be beneficial for Neurodivergent individuals. As the numbers of neurodivergent students increase, the number of professionals needed to help students with disabilities will be in high demand, and the importance of Therapy Dogs in education will become crucial. Neurodivergent students and their academic success will improve with the assistance of Therapy Dog interactions and building human-canine relationships. Building human-canine relationships will improve Neurodivergent students' mental health, well-being, academic success, and their social interactions. These interactions are beneficial for many reasons, but Therapy Dogs present in education is a positive resource for students.

Chapter 3

Methodology

Context of Study

This study was conducted at Rowan University which is a medium-sized public institution. Rowan University is in New Jersey and was founded in 1923 as a normal school. With a new mission in mind Dr. Thomas Robinson, Rowan's third president expanded the curriculum and changed the institution's name from Glassboro Normal School to Glassboro State College (Rowan University, 2022). Soon after, Henry Rowan supported the university with his philanthropic generosity and the school officially became Rowan University in 1997 (Rowan University, n.b.d).

Since then, Rowan University has evolved into a reputable research-based institution with an approximate student population of 18,000 students (Rowan University, 2022). Today, Rowan has 80 bachelor's degree programs, 60 master's, and 12 doctoral programs that provide many educational paths for current and future students (Rowan University, 2022). Rowan University, a normal school approximately ninety-four years ago, has since then evolved into a reputable comprehensive research institution supporting its near and far residents who wish to pursue an education (Rowan University, 2022). As mentioned, Rowan University provides many opportunities for all populations of students on campus one organization being the Autism PATH Program.

The Autism PATH Program which stands for Preparation and Achievement in Transition to Hire serves an important purpose on campus for neurodiverse students. PATH provides support for current students throughout their college experience and support to alumni who are in the workforce or seeking employment. This organization

provides other areas of support such as career readiness, social engagement, and establishing connections (Rowan University, 2022). With these several areas of support, the PATH Program allows students to select the types of support that would best suit their comfort and needs. Some types of support provided are student coaching, mock interviewing, social events, and establishing connections with other students who identify as neurodiverse. It is the PATH Program's mission that all students who identify as neurodiverse and who participate in the program are achieving academic success, support, and relationships with their peers (Rowan University, 2022).

Population and Sampling

The population for this study was current undergraduate college students at Rowan University. All undergraduate students attending a pet therapy event on campus between the months of February 14th and March 1st 2023 were invited to answer the survey for this study. No individual based on their race, ability, gender, age, ethnic background, etc. was excluded from participating in the study. The targeted population was undergraduate students who identify as neurodivergent. The data was collected from the surveys in which participants responded yes to identifying as neurodivergent.

Data Instrument and Collection

Upon approval from the Institutional Review Board (IRB), a quantitative survey was used to collect data. This quantitative study will be conducted through Qualtrics. The survey will be presented at pet therapy events with a QR code for students to scan. This survey was only accessible to students who attended the event to keep the answers as accurate as possible. In addition, the survey consisted of ten questions, and the data was collected from those who answer that they identify as neurodivergent. The screening

question asked participants, “Do you identify as neurodivergent? Identifying as neurodivergent means you identify with one of the following identities: Attention Deficit Hyperactivity Disorder, Attention Deficit Disorder, Obsessive Compulsive Disorder, Traumatic Brain Injury, and more. The purpose of the quantitative survey is to investigate neurodiverse students and their interactions with therapy dogs. Information gathered from the survey responses will give further information on whether therapy dogs on campus provide emotional relief for students on the spectrum.

Data Analysis

To analyze data, the information used from the survey only used responses in which the participant answered yes to identifying as neurodivergent. Other responses were discarded appropriately to remain within the scope of this study. Analyzing this data provided a more accurate assessment of whether therapy dogs are beneficial to students in higher education who identify as neurodivergent. This data identified if the Schreiber Pet Therapy Program at Rowan University is benefitting the neurodivergent student population. The data was analyzed through frequencies based on responses collected from the survey. Some survey questions were answered with a slide bar format to measure the data. The slide bar questions provided frequencies based on their level of experience, relaxation, and whether they benefitted from the therapy dog session (Christopher, 2021). Frequencies were used to examine the responses in the survey that students answered based on their experience at the pet therapy. These frequencies were the method used to examine the data in this study (McMillan, 2016).

Chapter 4

Findings

Profile of Sample

The target for this study was neurodivergent students that attend Rowan University's main campus in Glassboro, New Jersey. The survey used for this study was created on Qualtrics, Rowan University's surveying tool. The survey was presented at on-campus pet therapy events to recruit participants. The Shreiber Family Pet Therapy Program collaborated with the Autism PATH Program on February 14th, 2023, for its annual Valentine's Day event. This was the first event that participants were recruited to participate in the study. The survey was accessible at each pet therapy event designated for the study for participants to fill out and was closed on the last pet therapy event on March 1st, 2023. A total of 42 survey responses were collected for this research study.

Students were asked if they identified as neurodivergent, which was worded in the survey as: Identifying as neurodivergent means that you identify with one of the following: ADHD, ADD, Autism Spectrum, Dyslexia, Obsessive Compulsive Disorder, Traumatic Brain Injury, or other neurodivergent identities. The total number of responses to this question was 30. Out of 42 total survey responses, 30 answered that they identify with ADHD as their neurodivergent identity and 12 did not respond to this question.

Questions were then posed in the survey about students' participation in pet therapy events and whether therapy dogs made the students feel more relaxed or less anxious. Table one contains responses from students at Rowan University who responded

they felt petting a dog was relaxing. 35 out of 42 respondents answered 100% that petting a dog was relaxing.

Table 1

Q9- Did You Find Petting a Dog Relaxing?

Relaxation Level	<i>n</i>
100%	35
97%	1
80%	1
36%	1

Note. Participants responded using a sliding scale from 0-100%.

Table two contains responses from students who said they felt less anxious petting a therapy dog. Participants responded to this question with a sliding scale from zero to ten. The table shows that 30 students answered the highest number on the scale to feeling less anxious after petting a therapy dog. The rest of the data collected shows that 8 participants responded just under ten and five did not respond at all.

Table 2

Q10- Did You Feel Less Anxious After Petting a Therapy Dog?

Impact on Reducing Anxiety	<i>n</i>
10	30
9	2
8	2
7	2
6	1
5	1

Table three contains responses from students who answered if they were familiar with The Shreiber Family Pet Therapy Program at Rowan University. This question was used to examine whether participants have used or heard of pet therapy as an organization or student resource on campus.

Table 3

Q1- Have You Ever Heard of Rowan University's Shreiber Family Pet Therapy Program?

Familiarity	<i>n</i>
Yes	28
No	2
Not sure	7

Note. Participants responded using a sliding scale from 0-10, with 0 being no and 10 being yes.

Table four contains responses from students who answered whether they liked therapy dogs on campus or not. This question was only answered by six participants. This question was also asked in a multiple-choice format to easily collect data on if they like therapy dogs being a part of the Rowan University campus community. Often times there are several therapy dogs on campus every day.

Table 4

Q4- Do You Like Having Therapy Dogs On Campus?

Response	<i>n</i>
Yes	2
No	2
Not sure	2

Table five contains responses from students who answered how they heard about the pet therapy event today. This question had several options that could be chosen but the two represented on the chart show the two most popular ways that students were notified.

Table 5

Q5- How Did You Hear About The Event Today?

Responses	<i>n</i>
Rowan Announcer	13
Friend	12

Table six contains responses from students who answered whether the pet therapy event was a positive experience. This question was asked on a sliding scale from zero to one hundred: zero being no and 100 being yes to show the participants' experience level.

Table 6

Q8- Did You Have a Positive Experience At The Pet Therapy Event Today?

Experience Level	<i>n</i>
100	29
90	2
80	1
70	2
60	1
50	1

Note. Participants responded using a sliding scale from 0-10, with 0 being no and 100 being yes.

Chapter 5

Summary, Discussion, Conclusions, and Recommendations

Summary of Study

As previously mentioned, the number of neurodivergent students in higher education is increasing and will continue to increase over time (Cooper, 2016). This study examined whether neurodivergent students at Rowan University benefited from therapy dogs being on campus. The survey launched on February 14th, 2023. The survey was open until March 1, 2023 and the total number of students that participated in this survey was 42. The data from the survey was saved and downloaded into a password-protected laptop. The password-protected laptop was used to begin the analysis for the study.

Discussion

Research Question 1

What impact, if any, do therapy dogs have on helping neurodivergent college students' anxiety levels and help them relax?

Question seven, asked: what neurodivergent identity do you identify with? This question provided several identity options and if not listed participants may choose “other” or “prefer not to answer”. Approximately, 71.42% answered that they identify with attention deficit hyperactivity disorder (ADHD) as their neurodivergent identity. This question allowed participants to select more than one neurodivergent identity if applicable. 28.57% did not answer this survey question.

At the end of the survey, question ten asked participants if they felt less anxious petting a therapy. The pet therapy events took place during the career fair at Rowan

University. The therapy dogs were placed in a location that provided students the opportunity to engage with them while entering the career fair or exiting. Based on the location and time of the pet therapy events when participants filled out the survey, petting a therapy dog made them feel less anxious.

In what ways, if any, do therapy help neurodivergent students relax? Question nine asked: did you find petting a dog relaxing? 85.7% of participants answered ninety that they 100% felt petting a dog was relaxing. There was one participant who answered 80% and one participant who answered 36%. In addition, there were five participants who did not answer this question. Overall, 85.71% of participants in this study benefitted from petting a dog.

Research Question 2

What general perceptions do neurodivergent students hold about the pet therapy program at Rowan?

Students heard about the pet therapy event through a Rowan Announcer and through a friend. As shown in Table five it was almost an even split between Rowan Announcer and friend. This even split shows that students are being notified through email as well as talking with the campus community. In addition to hearing about the event, students were also asked how their experience was at the event and most answered they had a great experience. 29 students ranked their experience at 100% being the highest experience level. The majority of the students answered 100% while others had differing answers. Table four asked participants if they liked having therapy dogs in campus. Not every survey participant answered this question but those who responded showed that some said yes, others no and some were unsure.

Recommendations for Practice

According to the findings of this study, these are the recommendations for practice:

1. Because therapy dogs reduced anxiety levels among the neurodivergent students who participated in this study, the Shreiber Family Pet Therapy Program should attend the larger events on campus like career fairs, prep for the fair events, and other larger events on campus that may bring anxiety and stress to students.
2. Rowan University should host events that advertise The Shreiber Family Pet Therapy Program educating the campus community on how the program is here to serve students, faculty, and staff. An equal number of students in this study heard about pet therapy events through the Rowan Daily Announcer or friends, making both written and word-of-mouth advertisements successful.
3. The Shreiber Family Pet Therapy Program should work on advertising the benefits of therapy dogs since some students did not have a good experience at the event or have enough information to hold an opinion.

Recommendations for Further Research

According to the findings of this research study, these are the recommendations for further research:

1. Expand the targeted student population to examine several neurodivergent identities and the benefits of therapy dogs.
2. Conduct a mixed methods research study to compare survey responses to interpersonal interview settings and responses.

3. Include graduate and professional students in future studies to compare differences among the various student populations.

Conclusions

This research study shows trends that are very clear and others that can be expanded upon based on the results. First, it can be concluded that neurodivergent college students who identify with ADHD and who felt that petting a therapy dog made them feel less anxious or more relaxed are benefitting from this resource on Rowan University's campus. Secondly, the results of this study also show that a majority of students responded that they had a positive experience at the pet therapy event. Even though this study does only show results from The Shreiber Family Pet Therapy Program at Rowan University, additional research is needed on other pet therapy programs in higher education to see how those centers are serving their neurodivergent student population. It is also important to mention that most of the participants had heard of the program before proving that pet therapy is not unheard of entirely. Thirdly, reducing anxiety is an important element in the study in which the results show that participants felt less anxious and more relaxed from petting a therapy dog. The benefits of pet therapy in higher education are already making an impact on neurodivergent students at Rowan University. Lastly, promoting pet therapy for students and the campus community will provide positive experiences for all and maintain the goal of reducing levels of anxiety in the transition to providing relaxation.

References

- ADA National Network. (n.d.a.). *What are major life activities?* Retrieved May 4, 2022, from <https://adata.org/faq/what-are-major-life-activities>
- ADA National Network. (n.d.b.). *What is the Americans with disabilities act (ADA)?* Retrieved April 6, 2022, from <https://adata.org/learn-about-ada>
- American Psychiatric Association. (2013). *Diagnostic and statistical manual of mental disorders* (5th ed.; DSM-5)
- Anderson, A. M., Cox, B. E. J., & Andring, A. W. (2019). Support systems for college students with autism spectrum disorder. *College Student Affairs Journal, 37*(1), 14-27.
- Armstrong, T. (2015, April 1). *The myth of the normal brain: Embracing neurodiversity*. Journal of Ethics | American Medical Association. Retrieved March 28, 2023, from <https://journalofethics.ama-assn.org/article/myth-normal-brain-embracing-neurodiversity/2015-04>
- Bannon, W. (2015). Missing data within a quantitative research study: How to assess it, treat it, and why you should care. *Journal of the American Association of Nurse Practitioners, 27*(4), 230–232. <https://doi.org/10.1002/2327-6924.12208>
- Cai, & Richdale, A. L. (2015). Educational experiences and needs of higher education students with autism spectrum disorder. *Journal of Autism and Developmental Disorders, 46*(1), 31–41. <https://doi.org/10.1007/s10803-015-2535-1>
- Centers for Disease Control and Prevention. (2022, March 2). *Data & statistics on autism spectrum disorder*. Retrieved May 4, 2022, from <https://www.cdc.gov/ncbddd/autism/data.html>
- Clouder, L., Karakus, M., Cinotti, A., Ferreyra, M. V., Fierros, G. A., & Rojo, P. (2020). Neurodiversity in higher education: A narrative synthesis. *Higher Education, 80*(4), 757–778. <https://doi.org/10.1007/s10734-020-00513-6>
- Cooper, G. J. (2016). *The growing population of students with autism: The support capabilities of Mid-Atlantic Colleges and universities*.
- Denbo, S. M. (2003). Disability lessons in higher education: Accommodating learning-disabled students and student-athletes under the Rehabilitation Act and the Americans with Disabilities Act. *American Business Law Journal, 41*(1), 145–203. <https://doi.org/10.1111/j.1744-1714.2003.tb00004.x>
- Den Houting, J. (2019). Neurodiversity: An insider's perspective. *Autism, 23*(2), 271–273. <https://doi.org/10.1177/1362361318820762>

- Elias, R., & White, S. W. (2018). Autism Goes to College: Understanding the Needs of a Student Population on the Rise. *Journal of autism and developmental disorders*, 48(3), 732–746. <https://doi.org/10.1007/s10803-017-3075-7>
- Gobbo, K., & Shmulsky, S. (2013). Faculty experience with college students with autism spectrum disorders. *Focus on Autism and Other Developmental Disabilities*, 29(1), 13–22. <https://doi.org/10.1177/1088357613504989>
- Goodall, C. (2018). ‘I felt closed in and like I couldn’t breathe’: A qualitative study exploring the mainstream educational experiences of autistic young people. *Autism & Developmental Language Impairments*, 3, 2396941518804407.
- Grové, C., Henderson, L., Lee, F., & Wardlaw, P. (2021, May 14). *Therapy dogs in educational settings: Guidelines and recommendations for implementation*. Frontiers. Retrieved February 14, 2023, from <https://www.frontiersin.org/articles/10.3389/fvets.2021.655104/full>
- Hire. AskEARN. (n.d.). Retrieved March 28, 2023, from <https://askearn.org/page/hire>
- Jalongo, M. R., & McDevitt, T. (2015). Therapy dogs in academic libraries: a way to foster student engagement and mitigate self-reported stress during finals. *Public Services Quarterly*, 11(4), 254–269.
- Kapp, S. K. (Ed.) (2020). *Autistic community and the Neurodiversity Movement*. Palgrave Macmillan.
- London, M. D., Mackenzie, L., Lovarini, M., Dickson, C., & Alvarez-Campos, A. (2020). Animal assisted therapy for children and adolescents with Autism Spectrum Disorder: Parent perspectives. *Journal of Autism and Developmental Disorders*, 50(12), 4492–4503.
- Maslow’s hierarchy of needs. (2015). *The SAGE Encyclopedia of Theory in Counseling and Psychotherapy*. <https://doi.org/10.4135/9781483346502.n224>
- Mathes, E. W. (1981). Maslow's hierarchy of needs as a guide for living. *Journal of Humanistic Psychology*, 21(4), 69-72.
- Mayerson, A. (1992). *The history of the Americans with Disabilities Act*. Disability Rights Education & Defense Fund. Retrieved April 6, 2022, from <https://dredf.org/about-us/publications/the-history-of-the-ada/>
- McDonald, T. A. M., Lalani, S., Chen, I., Cotton, C. M., MacDonald, L., Boursoulian, L. J., Wang, J., & Malow, B. A. (2022, May 26). *Appropriateness, acceptability, and feasibility of a neurodiversity-based self-determination program for autistic adults - journal of autism and developmental disorders*. SpringerLink. Retrieved March 28, 2023, from <https://link.springer.com/article/10.1007/s10803-022-05598-9>

- McLeod, S. (2007). Maslow's Hierarchy of Needs. *Simply Psychology*, 1.
- Pet Partners. (2020, November 24). *Understanding animal-assistant intervention in relation to the ADA*. Retrieved November 8, 2022, from <https://petpartners.org/blog/understanding-animal-assisted-interventions-in-relation-to-the-americans-with-disabilities-act-an-interview-with-ellie-wetzel-haley/>
- Pinder-Amaker, S. (2014). Identifying the unmet needs of college students on the autism spectrum. *Harvard Review of Psychiatry*, 22(2), 125–137. <https://doi.org/10.1097/hrp.0000000000000032>
- Pollak, D. (2009). Introduction. *Neurodiversity in Higher Education*, 1–11. <https://doi.org/10.1002/9780470742259.ch1>
- Prevatt, F., Dehili, V., Taylor, N., & Marshall, D. (2012). Anxiety in college students with ADHD. *Journal of Attention Disorders*, 19(3), 222–230. <https://doi.org/10.1177/1087054712457037>
- Quintana, Stephanie; Borckardt, Michelle; and Aditya, Tanvi (2019) "Dog Days of Final Exams: Using Canine-Assisted Therapy to Reduce Stress and Improve Mood Among Community College Students," *Quest*: Vol. 3, Article 3.
- Rosales, R., & Whitlow, H. (2019). A component analysis of job interview training for young adults with autism spectrum disorder. *Behavioral Interventions*, 34(2), 147–162. <https://doi.org/10.1002/bin.1658>
- Rothstein, L. (2015). The Americans with Disabilities Act of higher education 25 years later: An update on history and current disability discrimination issues for higher education. *Journal of College and University Law*, 41(3), 531-590.
- Roux, Anne M., Shattuck, Paul T., Rast, Jessica E., Rava, Julianna A., & Anderson, Kristy, A. National autism indicators report: Transition into young adulthood. Philadelphia, PA: Life Course Outcomes Research Program, A.J. Drexel Autism Institute, Drexel University, 2015.
- Rowan history. (n.d.). Retrieved April 4, 2023, from <https://www.rowan.edu/about/oppaf/history.html>
- Schuck RK, Tagavi DM, Baiden KMP, Dwyer P, Williams ZJ, Osuna A, Ferguson EF, Jimenez Muñoz M, Poyser SK, Johnson JF, Vernon TW. Neurodiversity and Autism Intervention: Reconciling Perspectives Through a Naturalistic Developmental Behavioral Intervention Framework. *J Autism Dev Disord*. 2022 Oct;52(10):4625-4645. doi: 10.1007/s10803-021-05316-x. Epub 2021 Oct 13. PMID: 34643863; PMCID: PMC9508016.

Sayman, D., M. (2015). I still need my security teddy bear: Experiences of an individual with autism spectrum disorder in higher education. *Learning Assistance Review*, 20(1), 77-98.

The United States Department of Justice. *Disability rights section* (2023, March 1). Retrieved April 7, 2023, from <https://www.justice.gov/crt/disability-rights-section>

The inclusion of students with dyslexia in higher education: A ... (n.d.). Retrieved March 28, 2023, from <https://onlinelibrary.wiley.com/doi/10.1002/dys.1484>

Therapet Animal Assisted Therapy. (n.d.). *What is AAT?* Retrieved March 12, 2023, from <https://therapet.org/about/what-is-animal-assisted-therapy/#:~:text=Animal%20Assisted%20Therapy%20is%20when,with%20the%20patients%20or%20residents>

Watts, K., & Everly, J. S. (2009). Helping children with disabilities through animal-assisted therapy. *Exceptional Parent*, 39(5), 34–35.

Winkle, M., & Jackson, L. (2012). Animal kindness best practices for the animal assisted therapy practitioner. *OT Practice*, 16(6), 10–14.