University belonging on Canadian post-secondary campuses: The Autism Centred – University Belonging Model

By

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Abstract

Background. Higher education transcends academic pursuit; it fosters social community, exploration, exposure to diverse experiences, and career fulfillment. However, Autistic post-secondary students often face barriers that hinder their sense of belonging. Studies indicate 40-70% of these students struggle with depression and anxiety due to social exclusion and isolation, highlighting the need for inclusive practices in post-secondary institutions (McMorris et al., 2019; Cage et al., 2017). Addressing these challenges requires more than just implementing inclusion policies; it necessitates fostering a genuine sense of belonging in their educational journey (Maitland et al., 2021; O'Keeffe, 2013).

Objective. This study aims to understand and improve the sense of belonging for Autistic post-secondary students in Canada by reframing an existing model of university belonging through an interactionist approach to disability.

Methods. The study involved a qualitative analysis, including surveys with Autistic students across Canadian universities. Participants were selected based on specific eligibility criteria, ensuring a diverse sample. Data was analyzed using both codebook (phase 3) and reflexive (phase 4) thematic analysis to identify patterns and themes related to belonging.

Results. Central to this study is the development of the Autism Centred – University Belonging Model (AC-UBM). This model builds on Slaten et al. (2018)'s University Belonging Questionnaire (UBQ) by incorporating specific factors relevant to Autistic students. The AC-UBM includes four main pillars: 1. University Support and Acceptance. This pillar emphasizes the importance of addressing sensory needs, providing accessible support and personal growth opportunities, destigmatizing disability, and recognizing contributions. 2. University Affiliation. None of the participant responses in our study aligned with the University Affiliation pillar as

defined by Slaten et al. (2018). Therefore, a new pillar (Pillar 4) was created. 3. Faculty and Staff Relations. This pillar highlights the significance of supportive interactions with faculty and staff, adapting instruction to fit learning styles, and maintaining confidentiality regarding autism diagnoses. 4. Peer Relations. This new pillar addresses the impact of external perceptions, the need to mask identity, and the significant role of friendships and social communities in enhancing belonging. The final phase of the analysis identified key factors necessary for Autistic students to experience a sense of belonging, which include (1) addressing sensory needs, (2) providing accessible support and personal growth opportunities, (3) institutional efforts to de-stigmatize disability, (4) recognizing and valuing their contributions, (5) adapting instruction to fit individual learning styles, (6) maintaining confidentiality of diagnoses, (7) having openly neurodivergent staff members, (8) managing external perceptions and the need to mask aspects of their identity, and (8) building and maintaining friendships on campus with both Autistic and non-Autistic peers.

Conclusion. The findings emphasize the need for comprehensive strategies to create inclusive environments that support the well-being and academic success of Autistic students. Some recommendations include specialized orientations for Autistic students, Universal Design for Learning principles, support groups, Autistic-led mentorship programs, and integrating neurodiversity into Equity, Diversity, and Inclusion initiatives. By addressing these areas, universities can significantly improve the sense of belonging and overall experience for Autistic students in Canada.

Preface

This is an original work by Hannah Santilli. The research conducted for this thesis was supervised by Dr. Heather M. Brown at the University of Alberta. This thesis represents part of a broader research project developed by Dr. Heather M. Brown. Given that this thesis uses secondary data, I reviewed the literature specific to the research questions of interest, analyzed the data, and conducted a qualitative analyses described herein. The study was approved before data collection commenced by the University of Alberta Research Ethics Board, Project Name "Campus Belonging: Exploring Accessible Education in Canadian Post-Secondary Environments" No. Pro00117903, June 12, 2022.

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I owe my friends and family the deepest debt of gratitude. Your constant enthusiasm for my success has motivated me every step of the way. To my grandma, your pride in me has been the foundation of my achievements. Your uplifting words and insight continue to inspire me to strive for greatness. Finally, to my parents. Your endless love and encouragement have been my guiding light through the hardest times. From picking up every call and patiently listening to my frustrations, to celebrating my achievements and sending love from afar, you have been my champions and my anchors. This accomplishment is as much yours as it is mine. With all my love, thank you.

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Motivation for Research

I would like to begin with an anecdote illustrating my experience with an Autistic peer growing up. I wish to clarify that what follows is a mere recollection of my interaction with this classmate that has stayed with me for many years.

In the first grade, I met Christian – an extremely intelligent boy with an energetic personality. I soon noticed he had his own teacher, Angie, who provided him with special accommodations during class. While Angie was meant to help him, her support set him apart from the rest of us in a way that made him seem different. He would sometimes work on separate assignments, sit at a different table, or even leave the classroom with Angie when things got too overwhelming for him. I remember asking Angie why Christian needed her help, she replied, "Christian has autism, and sometimes he needs support with his classwork." That was the first time I heard the word 'autism,' and while I did not fully understand what it meant, I could sense that Christian was being treated differently because of it. Some other kids would whisper about him while he was working or avoid including him in games during recess. When we were paired up for group activities, he was often left out or chosen last, as if his differences made him less worthy of being a part of the team. Sometimes, even the teachers would lower their expectations for him, like not pushing him to participate like they did with the rest of us. It was as if they assumed he could not handle more, and in doing so, they reinforced the idea that Christian was different and did not quite belong. I was only in first grade, and although I did not completely understand what I was doing, I felt an instinctive need to show Christian that he did belong. I would play with him at recess, pair up with him during class activities, and even invited him to my upcoming birthday party. I was eager to

understand Christian's differences, but it frustrated me to see others overlooking him because of his perceived 'unusual' behaviours and social challenges. Even though I worried that no one else truly understood Christian the way I did, I was determined to show him that he was just as much a part of our class as everyone else.

Through my graduate studies in School and Clinical Child Psychology and my dedication to autism research and advocacy, I can now recognize that the attributes of traditional education environments concealed Christian's capabilities. Since I was six years old, I made an implicit promise to Christian that I would continue to advocate for vulnerable populations, focusing on disability research and creating environments where everyone feels like they truly belong. Thus, Christian's significant role in my childhood motivated me to complete a graduate program in School and Clinical Child Psychology and conduct this research.

Introduction

Higher education transcends academic pursuit; it provides a gateway to belonging through social community, opportunities for exploration, exposure to diverse experiences, the formation of adult identity, and the pursuit of fulfilling careers. Yet, as students with Autism Spectrum Disorder (hereafter, autism) enter post-secondary education in growing numbers, they face unique barriers that hinder their sense of belonging within this community. Research indicates that between 40 to 70% of these students grapple with depression and anxiety, primarily due to experiences of social exclusion and feelings of isolation (McMorris et al., 2019). These alarming statistics stress the urgent need for post-secondary institutions to adopt more inclusive and flexible practices.

Addressing these challenges requires more than just implementing inclusion policies; it necessitates fostering a genuine sense of belonging in the educational journey. That is, mental

health challenges linked to social exclusion and isolation can severely impact educational progress and overall well-being (Cage et al., 2017). When Autistic students feel accepted, valued, and connected within their campus community, there is an improvement in both their mental health and academic success (Maitland et al., 2021; O'Keeffe, 2013). Despite this, the specific experiences and environments that foster a sense of belonging for Autistic students remain unclear, particularly within the Canadian context.

Therefore, addressing these gaps is critical. Without a comprehensive understanding of the barriers and needs of Autistic students, efforts to implement effective and meaningful change will remain incomplete. This study aims to fill this gap by reframing an existing model of university belonging through an interactionist approach to disability (Dwyer, 2022; Gustavsson, 2004; Tøssebro, 2004). Through this approach, we can accurately capture the experiences of Autistic post-secondary students and develop targeted strategies to create more inclusive environments that support the well-being and success of all students. The stakes are high: without such efforts, we risk perpetuating cycles of exclusion and isolation that undermine the fundamental goals of higher education.

Mapping Our Understanding of Autism

This section first explores three models of disability and then delves into our current understanding of autism.

Overview of the Pathology Paradigm and the Social Model of Disability

When discussing autism, it is important to recognize the diversity in how individuals experience and identify with the condition. As research on autism advances, it becomes increasingly clear that autism includes a diverse array of characteristics and experiences unique to each individual (Dwyer, 2020). This wide array of experiences means that a single definition

cannot capture all aspects of autism fully. Therefore, respecting and reflecting the diverse preferences for identity in discussions about Autistic individuals is essential, especially in academic and professional texts (Bottema-Beutel et al., 2021). Many members of the Autistic community prefer identity-first language (e.g., "an Autistic student"), as it recognizes autism as a core aspect of an individual's identity (Kenny et al., 2015; Taboas et al., 2023). On the other hand, person-first language (e.g., "a student with autism") is more commonly used in professional and clinical settings to highlight the individual before the condition, conveying the belief that a person is not solely defined by their disability (Kenny et al., 2015; Taboas et al., 2023). The choice between these two language styles is not merely a matter of preference but reflects deeper values related to autonomy, respect, and identity (Best et al., 2022). Ames et al. (2021) recommend using both identity-first and person-first language to more inclusively engage with the Autistic community. To better understand this issue, it is crucial to examine how disabilities are framed in modern literature, particularly through the medical model/pathology paradigm and the social model of disability.

Comparing these models highlights their fundamentally different perspectives, goals, and assumptions (Walker, 2021). Drawing from existing literature, I will use the example of deafness to illustrate the differences between these models[1]. The pathology paradigm views disability as an inherent flaw or weakness within an individual's body. For instance, someone who is hard of

[1] The illustration of deafness was selected to elucidate the contrast between the medical and social models of disability due to the pronounced social isolation experienced by members of the Deaf community and their separation from mainstream (hearing) society. Additionally, there exists a prevalent belief that hearing technology can alleviate many hearing impairments. However, contemporary perspectives within disability studies, as articulated by Bauman and Murray (2017), tend to position deafness outside the conventional framework of disability. These perspectives reframe the perception of deafness from mere sensory deficiency to a form of sensory and cognitive diversity that enriches human existence. This shift in perspective introduces the concept of Deaf-gain, which opposes the notion of hearing loss as a deficit and instead highlights the cultural richness and contributions of Deaf communities and their languages to the broader spectrum of human diversity.

hearing may be considered flawed, which could limit their ability to communicate effectively and engage in typical social interactions. Medical solutions, such as hearing aids or cochlear implants, are often suggested to correct this perceived flaw. On the other hand, the social model makes a distinction between impairments and disabilities. An impairment is a biological difference, like the inability to hear, while a disability is created by societal barriers and constraints faced by those with impairments. For example, a deaf student may encounter disability when schools fail to provide sign language interpreters for in-person classes or captioning for online lectures. The social model suggests that it is not the impairment itself but the external challenges that restrict an individual's activities and opportunities.

Autism According to The Pathology Paradigm

Dr. Leo Kanner and Dr. Hans Asperger provided the initial descriptions of autism in the 1940s. Kanner's research centred on case studies of 11 children exhibiting 'unusual' behaviours, including "a fascination with objects but indifference to people; sensitivity to feeding and loud noises; a preference for strict routines, social withdrawal; repetitive physical actions; language issues including echolalia and pronoun confusion; and in some instances, a regression in development after initially normal progress" (Kanner, 1943). During this time, people often derogatorily labelled such children as 'idiots' or 'imbeciles,' and they often resided in "housing for the feebleminded" due to their perceived differences and challenges in adaptive skills (Kanner, 1943, p. 242). Kanner (1941) also noted that these 11 children shared "an inability to relate to people and situations in an ordinary way" (p. 140) and exhibited "an anxiously obsessive desire for the preservation of sameness," (p. 140) a condition he termed as 'infantile autism.' Asperger also documented the behavioural traits of such children in Austria, noting

behaviours such as limited eye contact, repetitive actions, and intense special interests (Fletcher-Watson & Happé, 2019).

Today, healthcare professionals commonly use the Diagnostic and Statistical Manual of Mental Disorders, 5th Edition, Text Revised (DSM-5-TR), and the International Classification of Diseases, 11th Edition (ICD-11) as key diagnostic tools (American Psychiatric Association [APA], 2022; World Health Organization [WHO], 2019). The DSM-5-TR defines autism as "persistent deficits in social communication and social interaction across multiple contexts" and "restricted, repetitive patterns of behaviour, interests, or activities" (APA, 2022, pp. 56-57). Common characteristics include "deficits in social-emotional reciprocity, deficits in nonverbal communicative behaviours, challenges in developing, maintaining, and understanding relationships, stereotyped or repetitive motor movements, insistence on sameness, highly restricted fixated interests, and hyper- or hypoactivity to sensory input" (APA, 2022, pp. 56-57). Attempts to 'treat' these behaviours through various interventions, such as social skills training or intensive behavioural therapies, often fail to recognize the vital roles these behaviours play in the lives of Autistic individuals (Bottema-Beutel et al., 2018). This approach aligns with the pathology paradigm, which views autism as a disorder to be fixed or cured (Walker, 2021). The pathology paradigm reinforces this perspective by focusing on deficits and prescribing interventions aimed at 'correcting' these differences, suggesting that the challenges faced by Autistic individuals are solely due to their neurological makeup and should be addressed primarily through a medical lens (Kapp et al., 2013). In the context of post-secondary education, this model may lead to efforts centered solely on individual accommodations and, for example, teaching social skills, while potentially ignoring broader systemic issues that affect students' ability to thrive. That is, while personal counselling and tailored study sessions can support

individual needs, they do not address campus-wide issues such as sensory overload in communal spaces or the inflexibility of teaching methods.

The Influence of the Social Model of Disability

The social model of disability makes an important distinction between impairments and disabilities. It argues that while someone might have a biological condition (an impairment), what actually makes them disabled is society's response—or lack of response—to their needs (Oliver, 2004). For example, Autistic students might struggle with sensory processing in bright and loud lecture halls. In this case, it is not the Autistic traits that are disabling; it is the environment. If the setting were quieter and more controlled, those same students might not face any challenges at all, removing the disability. This model stresses that it is not the person's traits that are disabling—it is the environment and societal norms that are not accommodating those traits (Oliver, 2004; 2013). However, this perspective does not always capture the full range of experiences within the Autistic community (Dwyer, 2018). To build a stronger model of disability, we must consider how individual traits interact with their environments. This means recognizing that while societal barriers are a significant part of the problem, the way individual traits and environments interact also plays a crucial role in the challenges Autistic individuals face.

The Rise of The Neurodiversity Movement

Although Judy Singer is often credited with the concept of neurodiversity, it was actually the result of collaborative efforts by Autistic activists in the mid-1990s (Botha et al., 2024). Judy Singer, an Australian sociologist and disability rights advocate, played a key role in bringing the idea to wider attention through her undergraduate thesis in the late 1990s. In her work, she argued that neurological differences like autism, ADHD, dyslexia, and dyspraxia should be

recognized as natural variations in human diversity rather than disorders requiring a cure (Botha et al., 2024; Singer, 2017). Alongside other prominent autism advocates, Singer's work emphasized the importance of societal changes to better accommodate and support Autistic individuals, advocating for their acceptance and rights (e.g., Blume, 1998; Dekker, 2023; Tisoncik, 2020; Singer, 1999).

Building on these early ideas, Steve Silberman expanded and popularized the concept of neurodiversity through his influential book, 'NeuroTribes: The Legacy of Autism and the Future of Neurodiversity' (Silberman, 2016). Silberman's book provided a detailed historical and cultural exploration of autism, shedding light on the contributions of Autistic individuals and calling for a shift away from the medical model that views autism solely as a disorder. 'NeuroTribes' brought widespread attention to the neurodiversity movement, highlighting the need for systemic changes to create inclusive environments that support the well-being and success of neurodivergent individuals (Silberman, 2016).

Building on the foundational work of Singer, Silberman, and other disability advocates, the concept of neurodiversity has been articulated and expanded by scholars such as Nick Walker, who introduces the neurodiversity paradigm, its core principles, and implications for understanding neurological differences. Walker (2021) describes the neurodiversity paradigm as an approach encompassing three main principles. First, it recognizes neurodiversity as a valuable form of human diversity; neurological differences, such as those associated with autism, will continue to exist in diverse ways among the human population (Walker, 2021). Second, the neurodiversity paradigm challenges the idea of a 'normal brain' or typical neurocognitive functioning; the notion of a 'normal brain' does not exist and is instead a social construct shaped by historical ableism and discrimination (Walker, 2021). Lastly, the social dynamics connected

to neurodiversity resemble those seen with other forms of human diversity, such as ethnicity, gender, and culture (Walker, 2021).

Autism According to The Interactionist Model

While the social model of disability and the neurodiversity paradigm are lauded for being strength-based approaches to understanding autism, advocates like Oliver (2013) and Watson (2004) argue that removing social and physical barriers creates an inclusive environment. However, this approach may not adequately address individual variability among Autistic people. Critics have noted that focusing only on removing barriers can overlook the specific challenges that people with disabilities face (Ballou, 2018). For example, even if a university offers quiet spaces, disability can still be experienced through the interaction between individual traits and the environment. An Autistic student might thrive in a quiet library but struggle in a bustling cafeteria due to sensory sensitivities. Conversely, another neurodivergent student might feel antsy and trapped in overly isolated and quiet spaces and perform better in environments with background noise. This, albeit an attempt to accommodate neurodivergent students, illustrates how the experience of disability depends on the interaction between the individual's traits and their environment. While the neurodiversity paradigm seeks to encourage reframe perceptions of disability, it alone does not offer a complete, practical framework for application.

According to Dwyer (2022), the interactionist neurodiversity framework views disability as a subjective experience that results from the interaction between an individual's traits and their environment. It argues that disability is not solely determined by personal characteristics, such as a hearing impairment, but by how these traits interact with the external environment (Dwyer, 2022). This model is used to identify changes needed in educational settings, social spaces, and support services to create a more inclusive environment.

Using an interactionist model of disability, autism can be defined as a neurodevelopmental difference, which is often characterized by unique social communication styles, passionate interests, love of patterns and routines, and sensory processing differences, such as heightened sensitivity to sounds or textures, as well as a distinct way of processing information. (Dwyer, 2022; Fletcher-Watson & Happé, 2019). These traits can be illustrated by a constellation, representing how different characteristics create the unique way an Autistic person functions by coming together and shaping their overall experience and interactions with the world. The support needs of Autistic individuals can range from low to high. Those with high support needs often have a co-occurring intellectual disability, as well as difficulties with daily living skills and limited verbal communication (Fletcher-Watson & Happé, 2019). Environmental factors and conditions significantly impact the level of support needs; for example, an Autistic person with sensory sensitivities might require high support in a busy environment like a crowded shopping mall, but much less in a calm, familiar place like their bedroom. This understanding shows that autism is not a one-dimensional, linear spectrum of 'severe' versus 'limited' symptom presentation; rather, it is a complex and multifaceted neurological difference that affects individuals differently depending on their environment (Fletcher-Watson & Happé, 2019). I will now explore how these individual traits and their interaction with environments can affect Autistic post-secondary students on campus.

Autistic Student Experiences on Post-Secondary Campuses

There are approximately 2.19 million post-secondary students in Canada, and 14% of them (~306,600) have a disability (National Educational Association of Disabled Students, 2017; Statista Research Department, 2024). Considering that the prevalence of autism in the general population is estimated to be 1-2% (Anagnostou et al., 2014), we can apply this rate to the post-

secondary student population. Based on available data, it is estimated that around 1% of post-secondary students in Canada are Autistic. This suggests that a significant number of Autistic students are attending Canadian universities. However, the lack of detailed statistical data means that these students' specific challenges are likely under-researched. This gap underscores the importance of gathering more accurate data and highlights the need for Canadian universities to better understand and address the experiences of Autistic students. By doing so, universities can more effectively foster a sense of belonging on campus, ensuring that all students are supported and included. The following paragraphs will explore the various challenges these students encounter in the educational environment.

While 15% of Canadian institutions provide autism-specific supports (Ames et al., 2022), Autistic students still face significant barriers that hinder their academic and social success. These barriers include stigma and social climate, social interaction or isolation, mental health challenges such as anxiety or depression, the lack of appropriate accommodations, and sometimes the attitudes of faculty or staff (Anderson et al., 2017). Autistic post-secondary students frequently experience stigmatization and misconceptions about their disability (Turnock et al., 2022). The stigmatization of autism has been shown to have detrimental effects on the well-being of Autistic individuals, negatively impacting their mental health, physical health, and sense of belonging on campus (Davis et al., 2021). For instance, McLeod et al. (2019) found that Autistic students faced higher levels of social rejection and discrimination compared to their non-disabled peers, resulting in lower GPAs and increased academic challenges. This illustrates how stigma and social rejection, rather than the characteristics of autism itself, significantly affect the academic and social experiences of Autistic students. Moreover, faculty who are unaware of the specific needs of Autistic students may not recognize behaviours related to

autism and may mistakenly attribute these behaviours to a lack of effort or engagement (Gillespie-Lynch et al., 2017). This lack of understanding can also result in the stigmatization of Autistic students, who may be perceived as less capable or less motivated than their neurotypical peers (Roberts & Simpson, 2016).

Moreover, unconscious ableism refers to subtle, unconscious biases that assume neurotypical standards as social norms (Dunn, 2019). These biases can devalue or disadvantage disabled individuals, further marginalizing Autistic students (Dunn, 2019). Faculty, staff, and peers may unconsciously hold biases that favor neurotypical behaviors—such as typical social interaction styles, communication patterns, and ways of processing information—without recognizing the diverse ways in which Autistic students may learn and express themselves (Brown & Leigh, 2020). These biases can lead to teaching practices and classroom environments that inadvertently exclude or disadvantage Autistic students. For instance, instructors might enforce participation through spontaneous verbal responses during class discussions, assuming this is the best measure of engagement. This approach exemplifies ableism, as it overlooks the fact that some Autistic students may find spontaneous speech challenging or require more time to process and articulate their thoughts, increasing their anxiety and unfairly affecting their academic performance (Dolmage, 2017).

The impact of stigma extends beyond immediate academic challenges. Studies have shown that a lack of belonging can exacerbate feelings of loneliness and mental health issues, such as anxiety and depression, which are more prevalent among Autistic students than their neurotypical peers (Dwyer, 2018; Schembri-Mutch et al., 2023). Interestingly, Ghanouni and Quirke (2023) found that Autistic individuals emphasized the importance of being included and experiencing a sense of belonging as crucial to developing resilience and coping strategies. This

highlights that being an integral part of a community can provide the emotional support and motivation necessary for navigating the often-rigorous demands of post-secondary education (Duerksen et al., 2021; Schembri-Mutch et al., 2023).

To create a sense of belonging for Autistic students, it is crucial to address the social climate of post-secondary institutions. When students feel acknowledged and valued by their peers and educators, they are naturally more inclined to engage actively in academic discussions, collaborate in group settings, and immerse themselves deeply in the curriculum (Coristine et al., 2022). This active participation enhances learning outcomes and strengthens the community within the educational setting. For Autistic students, the need for inclusive environments is even more significant. Educational settings that prioritize inclusivity and diversity do more than accommodate these students; they actively engage and integrate them into the academic community (Anthony et al., 2020).

While fostering a positive social climate is critical, the physical environment and availability of accommodations also play a vital role in the experiences of Autistic students. The transition to post-secondary education represents a pivotal period in a student's life, marked by new responsibilities, social dynamics, and importantly, unfamiliar environments (Lindsay et al., 2019). For Autistic students, this transition can be particularly daunting (Elias et al., 2018), as they often encounter environments that are not well-suited to their specific needs (Graetz & Spampinato, 2008; Schembri-Mutch et al., 2023). For example, receiving inadequate accommodations can further complicate their adaptation to the post-secondary setting (Cox et al., 2017). One of the key challenges that Autistic post-secondary student face is the inflexibility of traditional teaching methods. The lack of flexible teaching options, such as lecture recordings or varied assessment formats, can create significant barriers to academic success for Autistic

students (Schembri-Mutch et al., 2023). Additionally, the physical environment of campuses can pose substantial challenges. The absence of sensory-friendly spaces and quiet areas can lead to heightened anxiety and difficulty concentrating, further hindering academic performance (Anderson et al., 2017). These sensory challenges, combined with the lack of proper accommodations, make it difficult for Autistic students to fully engage with their educational environment. Without the necessary supports, such as sensory-friendly learning areas and clear communication of expectations, Autistic students may struggle to cope with the demands of post-secondary education, further isolating them from the academic community (Cox et al., 2017).

Stigma extends beyond perceptions of autism itself and includes the stigma associated with the use of accommodations (Hong, 2015). Some faculty and students may view accommodations as giving an "unfair advantage" rather than as essential supports that level the playing field for Autistic students (Witcher, 2020). This stigmatization can discourage students from requesting the accommodations they need to succeed academically, further exacerbating their challenges (Lightner et al., 2012). Traditional teaching methods also contribute to the difficulties faced by Autistic students. The lack of flexibility in teaching methods can create significant barriers, as Autistic students may require alternative formats, such as lecture recordings or extended time for assessments, to fully demonstrate their knowledge and abilities (Schembri-Mutch et al., 2023).

In conclusion, Autistic students in post-secondary education face a variety of challenges that can hinder their academic and social success. These challenges often stem from widespread stigma and misunderstandings about autism, leading to social isolation and mental health difficulties. Many faculty, staff, and students lack awareness of autism, which can result in environments that are not well-suited to these students' needs. Additionally, traditional teaching

methods and the absence of necessary accommodations make it even harder for Autistic students to navigate their educational experience. These issues create a complex set of barriers that Autistic students must overcome to succeed in higher education.

What is 'Belonging'?

Ghanouni and Quirke (2023) found that Autistic individuals emphasize the importance of inclusion and belonging for building resilience and coping skills. A supportive community additionally provides emotional support and motivation (Dureksen et al., 2021). Therefore, promoting a sense of belonging in educational settings is essential for improving the academic performance and overall well-being of Autistic post-secondary students, as it plays a key role in helping them manage the challenges of higher education (Schembri-Mutch et al., 2023).

The significance of belongingness in human behaviour and motivation is well-documented in psychological theory. Maslow's 1943 work, 'A Theory of Human Motivation,' identified belongingness as a fundamental human need, placed just after physiological and safety needs in his hierarchy (Maslow, 1943). He argued that love and belonging are crucial for forming meaningful relationships and building a sense of community, which are essential for achieving psychological well-being and personal growth (Maslow, 1943). When these needs are met, individuals can avoid loneliness, build self-esteem, and improve their overall well-being (Maslow, 1943).

Building on Maslow's framework, Baumeister and Leary (1995) explored the deep-rooted need for belonging, emphasizing how it drives much of human behavior. They argued that humans are naturally inclined to form and maintain relationships, and when this need is fulfilled, it results in significant psychological benefits such as reduced stress and improved mental health (Baumeister & Leary, 1995). However, when people feel disconnected or excluded, they may

experience loneliness, isolation, and a range of negative psychological effects (Baumeister & Leary, 1995). This makes fostering a sense of belonging particularly important, especially in environments like schools and universities. Allen et al. (2021) further support this by explaining how the need to belong is linked to mental health and social behavior in students. Their research shows that students who feel a strong sense of belonging are more likely to thrive academically and socially, while those who feel disconnected are at greater risk for anxiety, depression, and other mental health issues (Allen et al., 2021). This research reinforces the idea that promoting belongingness in educational settings is essential for student success.

For Autistic students, who may already face challenges in social integration, creating an environment that fosters a strong sense of belonging is important. Educational settings that actively promote inclusion and community help meet this fundamental need, supporting both the academic success and overall well-being of these students (Allen et al., 2021; Ghanouni & Quirke, 2023). By addressing the essential human need to feel accepted, valued, and connected, educators can create environments where all students, including those with autism, can succeed (Allen et al., 2021; Baumeister & Leary, 1995; Maslow, 1943).

Existing Models of University Belonging

There are several models of belonging on post-secondary campuses that offer different perspectives and insights. Since I decided to use the University Belongingness Model by Slaten and colleagues (2018) to interpret and code my data, I will start by exploring that model in detail. Following this, I will briefly cover key findings from other models focused on non-autistic Asian post-secondary students. Finally, I'll describe the results of one study that examined university belonging among Autistic post-secondary students.

University Belongingness Model – Slaten et al. (2018)

Slaten and colleagues (2018) developed the University Belonging Questionnaire (UBQ) to more accurately and comprehensively measure the construct of university belonging, providing a universal tool for scholars across various research studies and disciplines. The study comprised two main phases: Study 1 focused on scale development and exploratory factor analysis, while Study 2 involved confirmatory factor analysis and validity assessment. In Study 1, the initial pool of items for the UBQ was generated based on qualitative research about university belonging among Asian university students. These items were refined through collaboration between researchers and graduate students, resulting in a list of 40 items categorized into six domains related to university belonging. The final UBQ consisted of 40 items, which 421 undergraduate students from a large Midwestern university in the United States rated on a 4-point Likert scale. An exploratory factor analysis (EFA) identified three underlying factors:

- The first factor, University Affiliation, suggested that students experienced belonging in post-secondary education when they perceived a sense of membership to the university, including pride in being part of a large group. This factor captured students' pride and identity with their institution, reflecting how their connection to the university contributed to their sense of belonging. For example, students participated in university sporting events, wore university apparel, and discussed their affiliation with others outside the university community.
- The second factor, University Support and Acceptance, identified the perceived supportiveness and inclusiveness of the university environment. This factor

highlighted the role of institutional structures and resources in fostering a sense of belonging. Items in this subscale included perceptions of feeling supported and accepted unconditionally by the university, acceptance based on individual differences, access to resources on campus, and acknowledgments of individual successes.

- The third factor, Faculty and Staff Relations, emphasized the importance of interpersonal relationships with university personnel. This factor acknowledged that interactions with faculty and staff significantly influenced a student's feeling of being valued and integrated into the university community. Each item on this subscale underscored the value of students feeling accepted and affirmed by university employees. Relationships with faculty and staff were crucial for students, especially in fostering feelings of acceptance and empathy. Interestingly, relationships with peers did not emerge as a significant factor in this study.

In Study 2, the research aimed to replicate the factor structure of the UBQ using a new sample of 290 undergraduate students. The UBQ was compared to the Sense of Belongingness Scale (SOBS; Hoffman et al., 2002) and other related constructs. The UBQ demonstrated high internal reliability and showed expected correlations, confirming its convergent and divergent validity. A Confirmatory Factor Analysis (CFA) was used to assess a 3-factor model of the UBQ, which included university affiliation, support and acceptance, and faculty and staff relations. The analysis showed that this 3-factor model fit the data well, better than the 2-factor or 1-factor models. Additionally, the results indicated that the UBQ measures these constructs consistently for both men and women, showing measurement invariance across genders. The three identified subscales of the UBQ–University Affiliation, University Support and

Acceptance, and Faculty and Staff Relations–were found to be reliable and contributed to understanding university belonging.

In summary, Slaten and colleagues (2018) offer strong evidence for the validity and reliability of the UBQ when capturing the three key dimensions of university belonging: university affiliation, support and acceptance, and faculty and staff relations. While this model presents a robust framework for understanding university belonging, it is important to recognize that the UBQ was designed with a more generalized population in mind. Given the experiences of the specific student population I am studying, simply administering this scale may not fully capture the nuances of their belongingness. Instead, the UBQ provides a valuable foundation and reference point, guiding the interpretation and analysis of belonging in a way that acknowledges these complexities and allows for a more tailored exploration of the construct within this context.

Other Models and Relevant Findings of University Belonging

Ahn & Davis (2020) offered a nuanced exploration of university belonging by analyzing data from the Bangor University Research project, which used the '10 Words Question' to capture students' perceptions of belonging. Their study revealed the importance of social engagement—highlighted through terms like 'friends' and 'clubs and societies'—as a critical factor in fostering a sense of belonging among a general population of post-secondary students. Additionally, they identified two other significant domains: 'Surroundings' and 'Personal Spaces,' which included the physical, environmental, and emotional aspects of university life. These findings broadened the understanding of university belonging beyond traditional academic and social engagement, recognizing the importance of the physical environment and personal psychological elements. However, the model proposed by Ahn & Davis (2020) still centred on social engagement as a primary component of belonging. This focus may inadvertently

marginalize Autistic students, who may experience belonging through non-social factors more strongly, or differently, than their non-autistic peers. The study's inclusion of personal and environmental elements was a step forward, but it did not go far enough in addressing the specific sensory, cognitive, and social needs of Autistic students. The model lacked a deeper exploration of how these students navigate and interact with their environments, which is essential for understanding their sense of belonging.

Existing models of belonging in academic settings, like the Belonging in Academia Model (BAM) by Teng and colleagues (2020), and studies by Ménard and colleagues (2024), Young and colleagues (2023), and Fernandez and colleagues (2023), emphasize social and academic engagement, interpersonal relationships, and institutional support as key to fostering a sense of belonging. These models focus on shared academic goals, achievement, social connections, and cultural identity. However, these frameworks often miss the experiences of Autistic students. While they offer valuable insights for the general student population, they do not fully capture how Autistic students experience belonging. For example, Autistic students might find belonging more in structured, quiet environments than in social interactions or shared identities. This suggests that these models, while helpful, may need to be adapted or expanded to better address the specific needs of Autistic students in post-secondary education.

Each of these models provided valuable insights into the general concept of belonging in post-secondary education, but they all shared a common limitation: they focused heavily on social and academic factors while overlooking the non-social, environmental, and interactional aspects that impact belonging among post-secondary Autistic students. Therefore, this study argues that existing models are insufficient for fully conceptualizing Autistic belonging in post-secondary institutions. While these models expanded the scope of belonging to include a variety

of factors, they did not account for the unique needs of Autistic students. A more tailored approach is needed to develop a model of belonging that truly reflects their experiences in the university setting.

University Belonging Among Autistic Post-Secondary Students

While there are few studies that focus on belonging among Autistic post-secondary students, only one study has explored the sense of belonging among Autistic postsecondary students using a conceptual model of belonging. Pesonen and colleagues (2023) investigated the experiences of Autistic students in the Dutch higher education system, identifying several key factors that influenced their sense of belonging. They found that personal recognition and self-awareness played central roles in enhancing students' academic engagement. The study also emphasized the importance of physical proximity to campus, noting that students who lived closer to university facilities felt more integrated into campus life. These findings demonstrated that belonging for Autistic students extends beyond social interactions, including critical environmental factors like location and the overall university climate. Additionally, the research revealed wide variability in peer relationships among Autistic students—some felt well-integrated, while others faced significant social challenges and isolation. This variability suggested that social connections alone cannot guarantee a sense of belonging for Autistic students. The study also highlighted the significant impact of supportive interactions with academic staff, underscoring the need for more individualized support. However, the study's focus on the Dutch higher education system, which differs significantly from the Canadian context, and its small sample size raises concerns about the generalizability of its findings. This presents an opportunity for researchers to explore these issues further within the Canadian context to better understand and address the needs of Autistic students.

The Importance of the Study

Significant gaps in the literature persist, particularly in how research on Autistic postsecondary students is conducted. This shortcoming leaves educational institutions with limited practical and effective solutions to address Autistic students' needs. Most studies have valued Autistic individuals primarily as participants rather than collaborators, which significantly limits the depth, applicability, and overall quality of the research (Fletcher-Watson et al., 2019; Nicolaidis et al., 2011; Pellicano et al., 2022). This traditional approach often results in a superficial understanding of the true challenges and needs faced by Autistic students, leading to research outcomes that can be both ableist and pathologizing (Botha & Cage, 2022). Without the active involvement of Autistic individuals in the research design and implementation processes, studies fail to capture critical aspects of their lived experiences, producing findings that may inaccurately reflect their realities or inadequately address their experiences (Pellicano et al., 2022).

There is a significant gap in belonging research, with few conceptual or theoretical models specifically developed to address the needs of Autistic students. Effective models are crucial as they offer structured frameworks for analyzing, conceptualizing, and evaluating experiences and interventions (Rycroft-Malone & Bucknall, 2011). Janse van Rensburg and Liang (2023) highlight the potential of a supportive community framework to enhance the higher education experiences of Autistic students. This stresses the need for theoretical frameworks that guide the integration of inclusive policies and practices on post-secondary campuses. To address these gaps, research must focus on developing a framework that accurately reflects the diverse experiences of Autistic students, with active involvement from Autistic researchers.

Therefore, my study seeks to address these significant gaps by utilizing the University Belongingness Model (UBM) by Slaten et al. (2018) as a comparative framework. This model is selected for its proven validity and reliability in exploring complex psychological constructs like belonging. Slaten et al. (2018)'s methodical approach, which combines qualitative depth with quantitative rigor, offers a robust foundation for understanding the experiences of Autistic students in post-secondary education. Moreover, many existing models of belonging rely heavily on qualitative research that often excludes Autistic researchers or community partners, leading to a potentially skewed or incomplete understanding of belonging in the context of autism (Raymaker & Nicolaidis, 2013). For example, Pesonen and colleagues (2023) lacks involvement from Autistic community partners as active researchers. Without the direct input of Autistic individuals, the study may have missed essential perspectives that could have shaped the research more accurately and comprehensively. Autistic community involvement is crucial for ensuring that research reflects the lived experiences of Autistic students and addresses their needs in ways that resonate with them. The absence of direct input from Autistic individuals in these studies can result in findings that overlook essential aspects of the Autistic experience (Roche et al., 2021). My study prioritizes the inclusion of Autistic voices in the research process, ensuring that the findings are reflective of the diversity within the Autistic community and are more relevant to their lived experiences. Finally, this research is conducted across Canada, involving participants from various provinces. By focusing on a national sample rather than a specific province, this study aims to capture the broader Canadian context, making the findings more applicable to post-secondary institutions across the country. This approach ensures that the study's conclusions are relevant to the diverse educational environments found throughout Canada.

Purpose

This study conducted a firsthand analysis of the experiences of Autistic students in post-secondary environments to evaluate their sense of belonging on campus. It aimed to understand how these students experience belonging and identify ways to improve these experiences. The following questions were addressed throughout the study:

1) Across the UBM pillars, what factors promote university belonging among Autistic post-secondary students? From the perspective of Autistic PS students, what are the key components of each pillar which contributes to their sense of belonging?
2) Did the UBM miss any key aspects of the participants' experiences of belonging? If so, how might the framework need to be adapted?

Methods

Participant Recruitment

The data in this study was collected by the Campus Ready Project: Advancing post-secondary opportunities for Autistic students, a Canadian research team led by researchers from the University of Alberta, the University of Calgary, Carleton University, and McMaster University, to better support Canadian Autistic post-secondary students by developing and refining guidelines and strategies. This project will co-design targeted supports, enhanced strategies, and practice-based policies to strengthen Autistic postsecondary students' sense of belonging within Canadian institutions. Our goals are to: (1) assess how well the supports and services available at Canadian universities benefit Autistic students and foster a sense of belonging; (2) evaluate the alignment between university perspectives and Autistic students' views; and (3) identify practical supports and strategies that effectively promote a sense of belonging for Autistic students at Canadian post-secondary institutions.

Eligibility Criteria

To be eligible, participants had to be diagnosed with autism or self-identify as Autistic, be 18 years old or older, and have completed at least six months of study at a Canadian university within the past five years.

Recruitment

During the pilot of the Belonging Questionnaire (TBQ), we posted the study advertisement (recruitment flyer, see Appendix A) on social media sites such as autism-specific Facebook groups (e.g., Autism Canada ASD Central, Autism Society Alberta support group, A4A Ontario). We also asked agencies with whom we have a personal connection to send out the ad to their mailing lists (e.g., Sinneave Family Foundation, Autism Ontario, READ Centre (Carleton U), MacART (Autism Centre at MacMaster), Centre for Autism Services Alberta/AUTGEMS). Additionally, the project coordinator asked the CB Network, including Autistic Community Partners (ACPs), to forward the ad to personal contacts and share it on personal social media accounts. Recruitment was further supported through snowball sampling and study advertisements on campuses such as the University of Calgary, University of Alberta, McMaster University, and Carleton University. The E-fliers and advertisements directed interested participants to the aidanlab.ca website (https://www.aidanlab.ca/CB-TBQ), where we posted a more in-depth description of the research team, our participatory approach, our aims and goals, and the types of questions that would be asked in each section of the TBQ. If participants were still interested after reviewing the website information, there was an embedded direct link to the screening survey in Qualtrics.

Data Collection Methods/Instruments

Screening Survey

The Campus Ready Project employed a purposeful sampling technique, selecting participants based on specific population characteristics and the study's objectives (Palinkas et al., 2015). The recruitment prioritized adults with multiple marginalized identities to ensure that recommendations would be responsive to the nuanced realities of those most affected by intersecting forms of oppression and discrimination. The screening questionnaire (Appendix A) included 18 questions divided into two main sections. The first section, focusing on eligibility, asked whether participants had attended a Canadian university for at least six months, had a formal autism diagnosis or self-identified as Autistic, and were comfortable completing the study in English. The second section collected demographic information, such as the participant's name, pronouns, and email address, along with their preference for identity-first or person-first language. This section also gathered detailed demographic data, including year of birth, the most recent university attended, race/ethnicity, additional languages spoken, gender identity, sexual orientation, co-occurring conditions, financial situation during post-secondary education, and experiences with food insecurity. Participants had the option to skip questions if preferred.

As noted by Pellicano et al. (2024), the use of online data collection methods has revolutionized research, particularly during the COVID-19 pandemic, by enabling the recruitment of large and geographically diverse samples with relative ease and promoting inclusive practices (Lobe et al., 2020). However, these methods, especially those offering participant incentives, come with the significant drawback of potential fraudulent participation (Johnson et al., 2023; Teitcher et al., 2015). The asynchronous nature of online methods, for example, can provide a convenient and anonymous opportunity for 'scammer' participants to

supplement their income, particularly during economic hardships. Each time the study was advertised on social media platforms, especially Facebook groups, we would get thousands of volunteers completing the screening survey. To address the challenge of maintaining the integrity of our qualitative data while upholding trust with genuine participants, we implemented stringent screening measures. These measures were designed to prevent the misrepresentation of Autistic identity and ensure the authenticity of our study participants.

To ensure the validity of our data, we first used CAPTCHA to block automated responses and deleted any multiple submissions from the same IP address or those originating outside Canada. We also monitored alerts from Qualtrics' bot detection AI to check the authenticity of responses (Pellicano et al., 2023). For example, if the system flagged responses with similar patterns across different email addresses or if submissions used random strings instead of real names or emails, we decided not to follow up with those participants due to concerns about the legitimacy of their participation. This allowed the project coordinator to delete most of the volunteers from the database, leaving eighty volunteers who met our edibility criteria in our screening questionnaire database.

Second, in line with recommendations from Pellicano et al. (2023), we asked participants to provide a brief description of what being Autistic means to them. The Principal Investigator (PI), Dr. Brown, and the project coordinator, Chelsea Hack, reviewed each potential participant's response to the question about what autism means to them. Participants whose responses were vague, inaccurate, or nondescriptive were not selected. For example, in response to the questions of what being Autistic means to them, one volunteer wrote, "It really means a lot to me and I have faced a lot of challenges." Another volunteer answered, "I struggle a lot with communication and people", while a third volunteer described autism as "Being Special" and

wrote, “it changed the way I perceive being loved.” While Autistic individuals often struggle with written communication (Zajic & Brown, 2022), it was not clear from the responses that these volunteers understood the traits of autism. Therefore, they were not selected to complete the larger survey. However, this method of screening responses introduces a potential confound related to the lack of detailed written responses and the characteristics of the participants ultimately chosen for the study. This will be discussed further in the limitations section of the paper.

The Belonging Questionnaire (TBQ)

The Belonging Questionnaire (TBQ) was developed using a community participatory approach and administered through Qualtrics. Participants were given a $25 gift card as an incentive for completing each part of the TBQ. To accommodate different language preferences, the study offered two versions of the survey: one using identity-first language (e.g., “Autistic person”) and the other using person-first language (e.g., “person with autism”), allowing participants to choose the version that matched their identity. Only those who expressed interest after completing TBQ-1 were invited to participate in TBQ-2.

The Belonging Questionnaire – Part 1 (TBQ-1).

Of the 56 invitations sent based on the volunteers in our screening survey database, 35 participants returned a signed consent form to participate in the study. All participants completed TBQ-1 between November 6, 2022, and March 7, 2023. Most participants completed TBQ-1 in two hours, ranging from four minutes to 29 hours. The TBQ-1 (as shown in Appendix A) consisted of three researcher-created survey measures: Belonging Survey: Part 1 (Short Answer), Strengths survey (Bellier-Teichmann & Pomini, 2015), and the Ranking Priorities Activity (Dwyer et al., 2023). Participants also completed measures of Autistic traits (Comprehensive

Autistic Trait Inventory; CATI; English et al., 2021), and executive functioning skills (Executive Skills Questionnaire-Revised, ESQ-R; Straight et al., 2020). Each of the TBQ-1 subtests are described below.

The Belonging Survey: Part 1 (Short Answer) asked 28 short-answer questions ranging across several dimensions, including participant demographics (such as gender, sex, age, race, ethnicity, diagnosis, institution, and sexual identity), financial and employment information, and ratings of post-secondary services and accommodations. It also incorporated a university environment scale adapted from Gloria and Kurpius (1996), with five general questions about campus experiences, along with questions addressing employment and finances, supports and accommodations, and university environments.

The Strengths survey assessed participants' strengths in relationships, community involvement, Autistic pride, self-advocacy, and various cognitive and inter-personal skills. It included topics like attention, memory, logical thinking, creativity, ethical behavior, problem-solving, organization, compassion, reliability, humor, and hobbies.

The Comprehensive Autistic Trait Inventory (CATI) assessed traits such as attention to detail, repetitive behaviours, sensory sensitivities, and social skills. It included questions on concentration, routines, sensory reactions, social cues, and specific interests to provide a detailed profile of Autistic characteristics. The Executive Skills Questionnaire-Revised (ESQ-R) evaluated participants' executive functioning abilities, such as cognitive processes like planning, organizing, self-control, inhibition, attention, and problem-solving. Finally, the Ranking Priorities Activity asked participants to rate various recommendations for improving the campus experience for neurodivergent individuals, covering aspects like EDI initiatives, neurodiversity training, Disability Cultural Centers, leadership involvement, accommodation coordination,

flexible accommodations, sensory accommodations, transition supports, mental health supports, and mechanisms for providing accommodation remediation.

The Belonging Questionnaire – Part 2 (TBQ-2).

Participants who fully completed TBQ-1 (n=35) and were not removed for suspicious responses (n=5) were invited to complete a second questionnaire (TBQ-2; as shown in Appendix A). Only those who expressed interest during TBQ-1 were asked to complete TBQ-2 using the same data collection system. Unfortunately, we do have the data on TBQ-2 completion times or date ranges, so we are unable to provide details regarding this data. The TBQ-2 consisted of 9 long-answer questions that gathered more in-depth information about belonging on campus, including questions about peers and friends, barriers, campus climate, intersectionality, disclosure, negative attitudes, and unintentional outcomes of support. As an incentive, participants received a $25 gift card after completing the survey.

Specific Prompt. This study explored participants' written responses to one of two long-answer questions aimed at understanding their sense of belonging on campus. The prompts were:

1. Can you tell me about a vivid memory of a time when you felt like you belonged on campus? What was happening? Who else was there?
2. Can you share a little bit about why you may not have always felt that you belonged on campus? Why not?

To generate ideas and clarify the prompts, participants were further guided with the following explanation:

- To what extent did your university provide opportunities for you to feel that you belong on campus? For example, was there an easy-to-find mention of supports for autism online? Did your professors normalize using the disabilities office during their opening

classes? Did anyone in a mentoring program express acceptance of neurodiversity? Please give an example if you can.

Participants – Final Sample

Thirty participants returned TBQ-2 during the pilot study. However, not all participants gave a response to the questions we analyzed (n=3). At the same time, we excluded two other participant responses that contained significant grammatical errors and other issues that made them difficult to understand, interpret, and code accurately. We discussed these two responses with the ACPs, who agreed that the quotes should be deleted (see Appendix B to read these deleted quotes). This left a final sample of 25 participants. Based on the recruitment methods used, the study's participant pool is composed of a diverse group of individuals, including seven Autistic cisgender women (assigned female at birth – AFAB), eight Autistic cisgender men (assigned male at birth – AMAB), eight participants identifying as gender diverse, and two participants who did not report their gender identity. The study includes participants from various races and ethnicities, sexual orientations, and educational backgrounds. It also includes both formally diagnosed and self-identified Autistic individuals. Table 1 provides a detailed description of the participant demographics.

Table 1

Demographics for our Sample of Autistic Adults

Frequencies for Race and Ethnicity		Frequency	Percent
0	NR	1	4
1	Asian	3	12
2	Black	8	32

3	Indigenous	3	12
4	white	10	40
Frequencies for Gender Identity			
0	NR	2	8
1	Cis-woman	7	28
2	Cis-man	8	32
3	Gender diverse	8	32
Frequencies for Sexuality			
0	NR	1	4
1	Heterosexual	13	52
2	Homosexual (gay, lesbian)	3	12
3	Bisexual, pansexual	8	32
Frequencies for Highest Degree Completed			
0	NR	1	4
1	Highschool	1	4
2	College	13	52
3	Bachelors	7	28
4	Post-graduate	3	12
Frequencies for Diagnosis (formal, self)			
0	NR	1	4
1	Formal	20	80.0
2	Self-diagnosed	4	16
Descriptives for Age and Autistic Traits			

	Mean	SD	Range
Age	25.17	4.23	20-37
CATI	164.23	22.64	126-202

NR - Not reported, N = 25

Data Analysis

Braun & Clarke's (2006) method directed the codebook thematic analysis (TA) in step 2 of the analysis, and reflexive thematic analysis in step 3 of the analysis. These methods involved a systematic approach to identifying, analyzing, and reporting patterns (themes) within data. While rooted in a qualitative framework, a 'Codebook' thematic analysis involves methods that make some practical compromises (Braun & Clarke, 2020). This approach used a structured coding framework to develop and document the analysis, but it did not typically rely on coder consensus for quality (Braun & Clarke, 2020). Themes are often established early, but they can be refined, or new themes can emerge through inductive engagement with the data and the ongoing analytical process (Braun & Clarke, 2020). 'Reflexive' thematic analysis, fully aligns with qualitative research principles and leverages the subjective expertise of the researcher (Braun & Clarke, 2020). This approach does not require a research team for quality assurance (Braun & Clarke, 2020). The analysis can be either inductive or theoretical/deductive and involves a situated interpretative reflexive process (Braun & Clarke, 2020). In reflexive TA, coding is open and evolves organically without a predetermined framework, and themes are the outcome of a comprehensive data coding and iterative theme development process (Braun & Clarke, 2020).

Using both codebook and reflexive methods allowed us to conduct a detailed and credible analysis, ensuring accurate representation of the participants' experiences. Additionally, the

process was not linear but recursive, involving six key phases: familiarization with the data, generating initial codes, searching for themes, reviewing themes, defining and naming themes, and producing the final report (Braun & Clarke, 2006). This approach allowed us to derive rich, detailed, and complex accounts of data. The analysis also paid additional attention to their updated 15-step guidelines (Braun & Clarke, 2021).

Step 1: To familiarize myself with the data, I began by breaking down the participants' written responses into t-units. This approach helped me better understand and engage with the data. T-units can be conceptualized as a single 'act,' 'sentence,' 'statement,' or 'meaning phrase' (Auld Jr & White, 1956). A t-unit is often defined "as the minimum meaningful utterance having a beginning and an end" (Hatfield & Weider-Hatfield, 1978, p.46). T-units can vary in length, consisting of at least one independent clause that is focused on a single theme or idea, in which the subject and predicate may be expressed or implied (Auld Jr & White, 1956; Hatfield & Weider-Hatfield, 1978).

Step 2: In the second phase of analysis, I categorized each t-unit under the pillars of Slaten and colleagues' (2018) University Belonging Model. This deductive coding allowed me to map the participants' experiences directly onto the established pillars of university belonging, ensuring alignment with an existing framework and enhancing our understanding of how Autistic students perceive their sense of belonging within the university context. The active participation of 10 Autistic Community Partners (ACPs) was crucial in refining the analysis. From November 3, 2023, to March 7, 2024, we held eight one-hour meetings, with around seven attendees at each meeting (~5 ACPs and ~2 non-Autistic graduate students). These biweekly consultative meetings and coding tasks played a key role in interpreting the data. To ensure the accuracy and reliability of the coding, each meeting attendee was provided with a Google Sheet a week in advance

containing the participant responses alongside the pillars I had assigned them to. Using a dropdown menu in the adjacent column, attendees indicated whether they agreed with the coding decisions. In cases of disagreement, I created a PowerPoint slide listing the differing opinions and reasons for the disagreement. These disagreements were then presented and discussed in the following meeting until we reached a consensus.

Step 3: In the third analysis phase, the research team proceeded to inductive coding (e.g., reflexive TA), where we identified subthemes within the defined pillars. This involved a closer examination of the data to uncover more specific, nuanced aspects of Autistic students' university belonging. By moving from a general framework to detailed subthemes, we were able to highlight the varied experiences of the participants. This process effectively integrated the UBM's themes with the data and an inductive approach, allowing for a robust and comprehensive analysis. The coding verification process in this phase was similar to what we used in Step 2. However, instead of categorizing each t-unit under a pillar, the Google Sheet contained the participant responses next to the subthemes I had generated based on the data. This approach enabled the team to review and confirm the coding at a more detailed level, ensuring that the analysis accurately reflected the participants' experiences.

Role of the Researcher

Positionality Statement

In undertaking this research, I recognize that my identity and background inevitably shape the lens through which I approach my work. As Holmes (2020) highlights, positionality influences how researchers engage with their subject matter, interact with participants, and interpret data. As a white, middle-to-upper-class woman raised in an environment that valued higher education, I am conscious of the privileges that have afforded me certain perspectives and

opportunities. These privileges also bring potential biases, particularly when researching marginalized groups such as Autistic individuals. My role as a researcher extends beyond merely collecting and analyzing data. My personal history shapes the questions I ask and the way I interpret responses. As someone who is neurodivergent but not Autistic, I occupy a space that is both insider and outsider. I understand some aspects of the experiences I study. Yet, I must remain vigilant about the limitations of my understanding, especially in a context where my training in School and Clinical Child Psychology may inadvertently lead to a more pathologized view of neurodivergence. My role as a researcher extends beyond that of a collaborator, facilitator, and moderator, as I recognize that my connection to the topic may shape my interpretations. Therefore, I am committed to approaching the research process with self-awareness and reflexivity.

Reflexivity

To ensure the findings were valid and reliable, I used reflexivity as a key strategy. Reflexivity, which is the ongoing self-examination and critical reflection on the research process, helped me address potential biases (Braun & Clarke, 2020). I regularly reflected on my own positionality, experiences, culture, and beliefs that could influence how I interpreted the data. By doing this, I aimed to minimize personal biases and accurately reflect the participants' experiences. I maintained this practice through reflexive journaling, regular self-reflection, and seeking feedback from ACPs.

During the research process, disagreements occasionally arose about categorizing certain themes within the UBM pillars and generated subthemes. These disagreements often stemmed from differing perspectives on whether a theme reflected more interpersonal experience or broader external social interactions. For example, when debating the placement of a theme that

some believed was more reflective of internal processing, some ACP members advocated for categorizing it under a pillar that emphasized personal experiences. When such differences in opinion arose, I facilitated discussions that encouraged open dialogue, allowing all ACPs and non-Autistic graduate student meeting members to express their views. This approach ensured that the decision-making process was inclusive and reinforced the authenticity of the research. I structured these discussions to actively encourage ACPs to take the lead, prioritizing their voices to ensure their insights and experiences guided the thematic analysis and any necessary adjustments in data categorization. By doing so, I aimed to minimize any potential bias introduced by my non-Autistic perspective. This method of resolving thematic categorization conflicts helped maintain the integrity and credibility of the analysis, ensuring that it resonated genuinely with the lived experiences of our ACP members and other Autistic individuals. These measures also strengthened the trust and communication between me, the ACPs, and other non-Autistic group members, making the research process more collaborative and reflective of the Autistic community's experiences.

However, this approach brought its own set of challenges. I was often concerned about possibly overpowering or undermining the opinions of Autistic individuals during these decision-making moments. This anxiety stemmed from my responsibility to ensure that the findings and themes identified in my study accurately represented the perspectives and experiences of the Autistic community without being unfairly influenced by my own non-autistic interpretations or biases. In one instance, a discussion centred on whether a particular subtheme truly reflected the physical environment and participants sensory needs. The t-unit read, "Nobody commented on my wearing sunglasses indoors or not making facial expressions. If someone said something awkward nobody freaked out and demanded the person justify their

lack of social skills." In this example, the ACPs emphasized the importance of environmental and sensory needs by relating them to their experiences and the participant's quote. Meanwhile, the non-autistic graduate student perceived it as a feeling of interpersonal acceptance rather than a reflection of external factors. While each interpretation is valid, the ACPs likely have a deeper understanding of the lived experiences and nuances of what the participant was expressing. Therefore, I prioritized the perspectives of the ACPs and their decision on the coding, despite not having a consensus. This acknowledged their direct experiences and insights as central to understanding and representing Autistic students' sense of belonging, ensuring that the analysis was more aligned with the realities of the Autistic community.

Autistic perspectives were prioritized in several ways. I would regularly check in during meetings, specifically asking ACPs if they felt their views were being heard and respected. At the end of each meeting, I would ask, "Does everyone feel like their opinions were valued and recognized?" The ACPs agreed each time. However, recognizing that not everyone is comfortable speaking up in a group setting, I also made it clear that ACPs could contact me privately if they had thoughts, they were not ready to share in the meeting. This gave everyone a chance to contribute in a way that worked best for them. By taking these steps, I tried to create a space where Autistic voices included and guided the analysis and decision-making. By intentionally stepping back and allowing more space for Autistic voices to guide the analysis, I sought to reduce the impact of my non-Autistic perspective and prevent potential misrepresentation.

Results

After dividing my participants' written responses into t-units, I identified a total of 46 unique t-units from 25 participants. Among these, 21 t-units (46%) from 13 (52%) participants

pertained to Pillar 1: University Support and Acceptance. The written responses showed little reference to Pillar 2: University Affiliation, which might suggest that participants did not emphasize a strong sense of overall association with the university or pride in its culture. However, it is important to recognize that this lack of evidence does not necessarily mean that participants did not feel connected to the university; it could simply indicate that this aspect was not prominently addressed in their responses. Additionally, 7 t-units (15%) from 6 (24%) participants were related to Pillar 3: Faculty and Staff Relations. Interestingly, the remaining 18 t-units (39%) from 12 (48%) participants all referenced peer relations and social support. Therefore, my results section includes a fourth pillar, Pillar 4: Peer Relations. Table 2 shows the number and percentage of participants with at least one t-unit categorized under each pillar and the total number and percentage of t-units for each pillar. Additionally, the table details the subthemes, including the count and percentage of t-units associated with each subtheme.

Table 2

Distribution of Participant Responses Across the AC-UBM

Pillar	No. of Participants with at least one t-unit categorized under each Pillar (% of total)	No. of t-units categorized under each Pillar (% of total)	Subtheme t-units n (%)
Pillar 1: University Support and Acceptance	13 (52%)	21 (46%)	Addressing my environment to fit my sensory needs is important to my sense of belonging 3 (7%) I can enhance my belonging through accessible support and personal growth opportunities 9 (20%)

			Institutional efforts to de-stigmatize disability increase my sense of belonging 6 (13%) When others recognized and considered my contributions, I felt like I belonged 3 (7%)
Pillar 2: University Affiliation	0	0	N/A
Pillar 3: Faculty and Staff Relations	6 (34%)	7 (15%)	When faculty adapts instruction to fit my learning style, I feel more understood, and my sense of belonging is enhanced 2 (4%) When I am able to disclose my Autism diagnosis comfortably, it fosters trust and improves my sense of belonging 3 (7%) Having openly neurodivergent staff members makes me feel better understood, which strengthens my sense of belonging 2 (4%)
Pillar 4: Peer Relations	12 (48%)	18 (39%)	External perceptions and the need to mask my identity impact my sense of belonging 7 (5%) By building and maintaining friendships on campus (both Autistic and non-Autistic), I can build a social community and increase my sense of belonging 11 (24%)

When given the option of sharing positive and/or negative campus experiences, 15 participants (60%) reported only positive experiences, four participants (16%) reported only negative experiences, and six participants (24%) reported both negative and positive experiences of belonging on campus. These reports highlight that while many Autistic students find moments of acceptance, a significant portion purposefully chose to share that they have had negative experiences. When discussing negative experiences, participants highlighted how these challenges significantly affected their overall campus experience, drawing attention to the existing barriers they faced. For instance, Sam shared his challenges despite being actively involved in university life: "I found a lot more opportunities to belong on campus than others due to being heavily involved in extracurriculars. Despite this… I always felt on the outside, but honestly, there's not really anything anyone could do about that." Sam's experience highlights that even with active participation, Autistic students may still feel like outsiders, suggesting that there are deeper, systemic issues that need to be addressed. Sonia's experience also sheds light on the feelings of exclusion that many Autistic students face. She noted, "I felt I did not belong on campus when I was not chosen to participate in the school sports competition because they doubted my ability." Considering that many Autistic students continue to face challenges in achieving a sense of belonging, it is essential to address these systemic issues and create environments that promote inclusion and acceptance.

Through our four-phase analysis and the different experiences of Autistic post-secondary students, we proposed an Autism Centred – University Belonging Model (AC-UBM; Table 3) The AC-UBM provides a framework that illustrates how Autistic post-secondary students experience belonging and the challenges they face in achieving that sense of belonging on Canadian campuses. Within the first pillar, University Support and Acceptance, I identified four

subthemes: (1.1) addressing sensory needs, (1.2) providing accessible support and personal growth opportunities, (1.3) normalizing disability, and (1.4) recognizing contributions. In contrast, none of the t-units could be categorized under Pillar 2. University Affiliation. Within the third pillar, Faculty and Staff Relations, I identified three subthemes: (3.1) the adaptation of instruction to fit learning styles, (3.2) the importance of comfortable disclosure of autism diagnoses, and (3.3) the impact of having openly neurodivergent staff members. Lastly, the remaining t-units all related to an additional pillar, which I have called Pillar 4: Peer Relations. This last pillar includes two subthemes: (4.1) the impact of external perceptions and the need to mask identity, and (4.2) the role of friendships and social communities. Each will be discussed in more detail below.

Table 3

The Autism Centred - University Belonging Model (AC-UBM)

Pillar	Subthemes
Pillar 1. University Support and Acceptance	1. Addressing my environment to fit my sensory needs is important to my sense of belonging; 2. I can enhance my belonging through accessible support and personal growth opportunities; 3. Institutional efforts to de-stigmatize disability increase my sense of belonging; 4. When others recognized and considered my contributions, I felt like I belonged.
Pillar 2. University Affiliation	
Pillar 3. Faculty and Staff Relations	

	1. When faculty adapts instruction to fit my learning style, I feel more understood, and my sense of belonging is enhanced; 2. When my professors and faculty enact processes that allow my diagnosis to remain confidential from the broader university community, I feel like I belong; 3. Having openly neurodivergent staff members makes me feel better understood, which strengthens my sense of belonging.
Pillar 4. Peer Relations	1. Perceptions and the need to mask aspects of my identity impact my sense of belonging; 2. By building and maintaining friendships on campus (both Autistic and non-Autistic), I can build a social community and increase my sense of belonging.

Pillar 1. University Support and Acceptance.

Subtheme 1.1. Addressing my environment to fit my sensory needs is important to my sense of belonging.

Three (12%) Autistic students across three t-units (7%) referred to the impact of the sensory environments of campus spaces on their sense of belonging. For example, Saoirse stated, "I did not feel like I belonged on campus. I constantly struggle with my sensory issues and feel overwhelmed by crowds and layers of conversation." This quote illustrates how sensory challenges, such as dealing with crowded spaces and the difficulty in processing and engaging in multiple conversations in loud environments, significantly impacted this Autistic students' sense

of belonging on campus. The expectation to listen, engage, and interact in these environments can be overwhelming and hinder their ability to feel included and accepted. Similarly, while reflecting on a positive experience of belonging, Naomi explained she loved her research lab in part because she "was able to work during hours when the lab was quiet [which was] good for [her] sensory sensitivities." The impact of attitudes within the campus community on the relationship between sensory-friendly environments and a sense of belonging was also discussed when Imani explained, "nobody commented on my wearing sunglasses indoors" as they were reflecting on a positive experience of belonging at a university autism conference. These examples highlight the dual importance of both creating comfortable sensory environments for Autistic post-secondary students while also promoting acceptance of individual accommodations for sensory processing differences. By doing so, post-secondary campuses can support students by allowing them to feel more supported. This connection between sensory needs and the attitudes of others will be further discussed in section 2.1.

Subtheme 1.2. I can enhance my belonging through accessible support and personal growth opportunities.

Six (24%) Autistic participants across nine t-units (20%) directly linked their sense of belonging to the availability and accessibility of university resources. This sub-theme underscores how accessible, visible, and tailored supports and accommodations enhance a sense of belonging at university. For example, James highlighted the significant positive impact of easily accessible autism-specific support information on his university's website. He wrote, "There were resources available online that helped me understand what autism is and how it can affect people with different types of disabilities." The visibility of these resources improves accessibility while affirming the presence and needs of Autistic students within the campus

community. Students also stressed the necessity of having these supports customized, readily accessible, and easily findable through university websites, disability offices, and other service centers. This underscores how crucial specific, approachable supports are in helping Autistic students feel integrated and valued within the university community.

However, not all students reported positive experiences when seeking academic accommodations or other autism-related support, which threatened their sense of belonging. While likely responding to the part of our belonging prompt that asked, "…was there an easy-to-find mention of supports for autism online?" Emma shared, "I have never seen specific autism support through my university. We have many disability associations, etc., but nothing specific to [autism]." Emma's observation about the presence of general disability associations but the lack of autism-focused resources highlights a significant gap in the support system. This absence of targeted support can contribute to Autistic students feeling marginalized and disconnected from the broader campus community. Similarly, Imani expressed feelings of alienation due to the lack of resources for Autistic students on campus, which they felt mirrored the exclusion Autistic people face in society at large. Imani concluded, "I would say campus is not that different from the outside world," reflecting the persistent systemic barriers that can prevent Autistic students from developing a sense of belonging. These responses from our participants demonstrate that, while some universities are beginning to implement resources that improve support and inclusivity, significant work remains to ensure that all Autistic students feel adequately supported and included on post-secondary campuses.

Subtheme 1.3. Institutional efforts to de-stigmatize disability increase my sense of belonging.

Six (24%) Autistic students across six t-units (13%) referred to how their sense of belonging on campus was influenced by their university's efforts (or lack thereof) to normalize

and destigmatize disability/autism within the university culture. For example, Emma highlighted a significant gap in her university's approach to normalize and destigmatize neurodivergence, when she wrote: "while our disability office is prominent …nothing specific to neurodivergence is ever discussed." Imani echoed this sentiment, writing that they had not seen many "…attempts by the general [university] population to understand and accept autism", which negatively impacted they sense of belonging.

In contrast, other students reported a sense they belonged on campus because "the atmosphere was very inclusive and accepting of neurodiversity." Autistic students really appreciated when universities intentionally took proactive steps to de-stigmatize disability and foster a more inclusive environment. Notably two different participants from separate universities described educational events at their institutions which encouraged an understanding that autism is a valuable form of human diversity. Ocean highlighted the positive impact of such educational events, writing: "Our school organized an event for all students to be trained and educated about autism, which changed students' attitudes towards Autistic individuals." Devin also appreciated similar efforts at his school "to train students on the need to accept and respect Autistic students and others with disabilities." Such events can provide immediate support to Autistic students and have lasting effects on student culture, significantly enhancing their sense of belonging, and can transform the campus climate by promoting a more positive understanding and perception of autism. These programs enable non-Autistic students to gain a better understanding of their Autistic peers, reducing stigma and fostering a more inclusive environment.

Subtheme 1.4. When others recognized and considered my contributions, I felt like I belonged.

Three (12%) participants across three t-units (7%) referred to experiencing belonging on campus when their perspectives contributions were recognized and valued by others. In this context, 'contributions' encompass sharing ideas in class, participating in group projects and student organizations, and engaging in university activities. For these Autistic students, it is not merely about being present; it is about their input being acknowledged, respected, and acted upon, affirming their worth and reinforcing their connection to the university community. For example, Kenai said,

> *I remember one day walking down the hall after attending a meeting with one of my professors. I was feeling stressed—it had been a long meeting and I hadn't been able to focus on much of what was said because I was so exhausted from working hard to try and keep up with everything he said. I remember thinking, 'I hope everyone gets out of this meeting soon so I can go back to my room and take a nap!' And then we were all leaving, and someone came over to me, put their hand on my shoulder and said 'You did great today! You really helped us understand what is going on.' And that is something that has happened several times throughout college—people have come up to me when they see me struggling or stressed out, or just trying really hard at something. They say things like 'Wow! You are really good at [task]. You must have worked really hard at it!' And sometimes they offer advice or suggestions for how we can make things easier for ourselves.*

Kenai's experience emphasizes the critical importance of being acknowledged and respected by members of the university community in fostering a sense of belonging for Autistic post-secondary students.

Having one's ideas, tasks, and contributions acknowledged by faculty and peers may also increase Autistic students' self-esteem and academic engagement. For example, Jabari wrote that he "suggested a program to support Autistic students, and with little persuasion, the school agreed to introduce the program," which suggests that when students' ideas are recognized and acted upon, it can foster a sense of belonging. This example illustrates the positive impact of valuing students' contributions and involving them in shaping their educational environment. When Autistic students see that their efforts and insights lead to tangible changes, they are more likely to feel respected and engaged in their academic community. Therefore, engagement and respect for the contributions of Autistic students have the potential to create supportive environments where students feel that their efforts and insights truly matter and contribute to the university's growth and inclusivity.

Pillar 2. University Affiliation.

There was little evidence in the written responses of my Autistic participants that their sense of university belonging was strongly driven by "an overall association with the university, including being a member of campus-affiliated organizations and having a global sense of university culture and/or pride" (Slaten et al., 2018, p. 639). A few t-units could be interpreted as suggesting the students were not particularly proud of their universities, such as when Imani stated "campus is not that different from the outside world" as discussed in subtheme 1.2. However, while Imani's statement suggests she is disappointed in her institution, the key message is not necessarily her lack of University Affiliation. Rather, her quote illustrates how Autistic students may view the university environment as lacking in specific support and inclusivity tailored to their needs. This observation points to a broader issue—when Autistic students do not see themselves reflected in the resources and support systems available on

campus, they may feel disconnected and excluded. This lack of targeted support can undermine their sense of belonging, which is crucial for creating an inclusive and supportive university experience (see subtheme 1.3).

We initially categorized one of the t-units under University Affiliation, as the Autistic participant, Sam, explicitly referenced his involvement in joining a varsity team. When he wrote, "I started my undergrad involved in a varsity team, which gave immediate belonging". (see subtheme 2.2). While Slaten and colleagues (2018) suggest that University Affiliation involved participating in a varsity team or being a part of a student council, Sam went on to write, "despite this all though I always felt on the outside." This suggests that while involvement in university activities might provide a superficial sense of belonging, it does not necessarily lead to a sense of affiliation or connection to the university itself. In discussing this quote with our ACPs, they explained that their sense of belonging in any community often arises from making meaningful connections with peers in smaller, interest-based groups, rather than having a broad, generalized affiliation with the university. This means that Autistic students may more readily find their sense of university affiliation through more intimate, focused interactions within specific clubs, teams, or groups that share their interests and values (see Pillar 4.2).

Pillar 3. Faculty and Staff Relations.

Subtheme 3.1. When faculty adapts instruction to fit my learning style, I feel more understood, and my sense of belonging is enhanced.

Two (8%) participants across two t-units (4%) described how their sense of university belonging was fostered when faculty and staff adapted instruction to fit their learning styles. In one example, Saoirse felt like she belonged when her professor offered to "have meetings as walks", discussed her "thinking style" as they "learned philosophy", and talked "about cats

during meetings." Saoirse's sense of belonging was strengthened through tailored meetings that accommodated her specific needs and interests, demonstrating the impact of personalized and empathetic approaches from faculty. Quinn also described an experience about his accommodations, writing, "Belonging has meant being able to have my educational assistant with me [in-class]." However, he was quick to clarify that this worked only because the professor and other students always treated the educational assistant "as a student first." This emphasizes the importance of integrating all forms of support, such as EAs, into the classroom environment seamlessly without singling out those who receive them. The support of the educational assistant, combined with the inclusive attitude of professors and peers, contributed to Quinn's sense of belonging on campus.

Subtheme 3.2. When my professors and faculty enact processes that allow my diagnosis to remain confidential from the broader university community, I feel like I belong.

Three (12%) participants across three t-units (7%) expressed that having their autism diagnosis kept confidential were crucial for fostering a sense of trust and belonging within the university community. Sam and Mark's sense of university belonging was threatened by the forced disclosure of their autism diagnosis. Sam described experiencing "a lot of awkward situations with disability exams that basically outed me." Similarly, Mark wrote, "I had a professor from a different cultural background (meaning they weren't as familiar with accessibility rights) mention that I was Autistic to the class." The professor's lack of understanding and accidental disclosure of Mark's diagnosis led to feelings of social rejection, which decreased his sense of belonging. This incident highlights the need for cultural competence and sensitivity to protect students' confidentiality about their diagnosis.

Emma's experience sheds light on the need for individuals to discuss neurodivergent people with respect, sensitivity and confidentiality in academic settings. She recounted, "A mentor/professor of mine mentioned another student's social mishap and that he disclosed to her that he is Autistic, which made me uncomfortable—she assumed that I was not." The discomfort and breach of trust caused when faculty members discuss students' diagnoses without consent show the need for faculty education on the importance of confidentiality and the impact of their actions on students' sense of belonging.

Subtheme 3.3. Having openly neurodivergent staff members makes me feel better understood, strengthening my sense of belonging.

Two (8%) participants across two t-units (4%) highlighted how the presence of openly neurodivergent staff members significantly contributed to their sense of belonging. For example, Saoirse described a strong sense of connection with her academic supervisor when they wrote, "My supervisor struggles with chronic mental health challenges, so she deeply understands me insofar as mental health advocacy and neurodiversity overlap." This connection reflects a deep, shared experience where Saoirse feels that her supervisor can truly relate to her situation. This feeling creates a space for Saoirse, as it fosters a more meaningful and authentic relationship with her supervisor, where she feels that her needs and experiences are intuitively understood. Katie shared a similar experience with one of her professors. She shared,

> *I feel like I belong on campus when I am able to express myself and be accepted for who I am [by faculty and staff]. During my first semester of college, I was taking a class on the history of psychology.…The professor started class by saying that she was Autistic, and that she knew that this would be a topic we would discuss throughout the semester. She then said that she would always be available to talk with anyone who had questions or*

> *concerns about neurodiversity. This made me feel like someone had my back, and it gave me confidence that I could ask questions or voice my concerns without feeling judged or ostracized. It also reminded me that there are people out there who understand what it's like to be Autistic—even if they can't fully relate to my experiences, they can at least empathize with me and help me figure out solutions for my difficulties.*

Katie's experience demonstrates the sincere impact that openly neurodivergent faculty can have on Autistic students' sense of belonging. The professor's disclosure of her own Autistic identity provided a positive model of autism – combating harmful stereotypes - and created a safe space where Katie felt like she belonged. The professor's disclosure also enabled Katie to express herself freely and seek help without fear of judgment. This openness provided Katie with confidence and highlighted the importance of having role models/mentors who can empathize with the challenges faced by Autistic students. It exemplifies that such representation can make a notable difference in fostering a sense of belonging and acceptance on campus.

Pillar 4. Peer Relations

The remaining 18 t-units (39%) authored by 12 (48%) Autistic students related to our new Pillar 4: Peer Relations. In phase 3, we conducted an inductive analysis of these 18 t-units, identifying two subthemes. Each subtheme highlights different facets of peer relationships, influencing Autistic students' experiences, sense of belonging, and engagement with their university.

1. External perceptions and the need to mask aspects of my identity (i.e., sensory needs) impact my sense of belonging;
2. By building and maintaining friendships on campus (both Autistic and non-Autistic), I can build a social community and increase my sense of belonging.

Subtheme 4.1. Peer judgements and the need to mask Autistic traits and needs impact my sense of belonging.

Autistic post-secondary students are often highly attuned to the disapproval of their peers including negative judgements of Autistic traits, personal limitations, sensory needs, and even personal strengths. Six Autistic students (24%) across seven t-units (15%) reported feeling as though they needed to hide aspects of their identity to belong as was seen when Saoirse candidly shared, "... I cannot have both belonging and being myself at the same time. In part, that's just a reality of social connections and how they work." This statement highlights the oftentimes painful compromise that Autistic students make, choosing between masking their Autistic traits to gain societal acceptance, and being, as Saoirse noted, their 'authentic self'. This external pressure hinders true belonging for Autistic post-secondary students on university campuses.

Autistic students frequently feel compelled to conceal their Autistic traits and personal challenges from their peers, fearing that revealing them will lead to social exclusion. For example, Faygele described drawing unwanted peer attention with their tics when they wrote, "I felt like I didn't belong on campus when I ticced loudly... because I felt like people were looking at me and thinking I was strange.". A powerful illustration of this challenge was shared by Aaliyah, when she explained shared her struggle in make new friends while managing her co-occurring health conditions: "...my first [new] friends [on] campus wanted to go out drinking. But I couldn't because I'm always carefully managing my health, and since I had not explained [my health issues] to them… they felt like I was a disappointment," which led Aaliyah to feel like she did not belong. This scenario highlights how the need to manage health conditions and the lack of understanding from peers can create barriers to social inclusion and belonging.

Non-autistic individuals' negative judgements of Autistic students' sensory needs can also significantly impact the Autistic students' sense of belonging. Sensory needs, such as the need for quieter environments or the use of sensory accommodations like headphones, are often misunderstood and/or judged negatively by non-Autistic students and faculty, which was captured by Saoirse when they wrote, "I know that my headphones and sunglasses, comfortable and informal clothing, body language, facial expressions, and stimming are [perceived as] odd." Perceiving negative judgment from others for making choices based on sensory needs can make it challenging for Autistic students to feel accepted and valued within the university community. This often leads them to mask their sensory needs to avoid judgment, hindering their ability to be authentic and comfortable in the academic environment.

Ironically, peers' views of Autistic students' personal strengths can also complicate their sense of belonging. Naomi noted the conditional nature of acceptance in her environment: "While I don't love that this space worked for me because my dedication and love for science was praised as a 'superpower,' it was an incredibly rewarding environment to be in." For Autistic students, being labelled as a 'savant' or 'inspirational' often creates a barrier to genuine acceptance. The pressure to fit into these exaggerated narratives ties their sense of belonging to others' expectations rather than being valued for who they truly are. This conditional acceptance not only undermines true inclusion but also fosters feelings of inadequacy and stress, complicating their university experience and making it harder to achieve a real sense of belonging.

Subtheme 4.2. By building and maintaining friendships on campus (both Autistic and non-Autistic), I can build a social community and increase my sense of belonging.

Being surrounded by neurodivergent peers. Nine (36%) Autistic students across 11 t-units (24%) felt a stronger sense of belonging when they were surrounded by openly neurodivergent peers. For many Autistic students, finding a community of openly neurodivergent peers often leads to an immediate sense of acceptance and belonging. For example, Alphonse mentioned, "I belonged [on] campus when I [met] a few students who were also Autistic. They made me feel welcomed, and they showed me around campus." This shared understanding and mutual support among Autistic students helped Alphonse feel more integrated and comfortable in the campus environment, reducing the isolation often felt in broader social settings. Similarly, Amani described a comparable experience at an autism conference: "During this year's autism conference, being surrounded by other Autistic people created a level of comfort I'm not used to experiencing." Alphonse and Amani's stories highlight the importance of being in a community that understands and embraces autism. This shared understanding and mutual support helped them feel more integrated and comfortable on campus, reducing the isolation often experienced in broader social settings. In such an environment, Amani felt free from judgment and social pressure, which greatly enhanced their sense of belonging.

Engaging in shared activities centred around interests. Engaging in activities with peers who share similar passions is crucial for fostering a sense of belonging. These enjoyable experiences create opportunities for forming strong social connections and a deeper sense of community. For example, shared academic interests, like those among members of a research lab, can lead to belonging, as described by Naomi,

> *I felt I belonged on campus when I started working in a research lab. I was able to deep dive on a very specific topic, and people in the lab with me were always open to having an 'info dump' or discussion about the topic... I was always surrounded by other people who were committed to a common interest. These people included other keen undergrad students, graduate students, and professors.*

Similarly, Sam experienced belonging through a shared love of sports and recreational activities, recounting, "I started my undergrad involved in a varsity team, which gave immediate belonging." Jin also highlighted the impact of extracurricular involvement, recounting, "I felt I belonged on campus when my fellows challenged me to participate in a tournament for badminton (my favourite)." Playing a favourite sport with peers fostered connection and enjoyment for Jin, strengthening her sense of belonging.

Shared interests can allow students to join activities or clubs despite their discomfort in social settings. Jake reflected on this, saying, "I was always encouraged to join clubs I felt out of place to be in… Despite this, I was once made to co-chair a planning team." Interestingly, despite initially feeling that he did not belong, Jake's involvement in this leadership role ultimately led him to experience a sense of belonging. In another response, he even recommended that universities "employ ways to bring [Autistic post-secondary students] out of their comfort zones as the world needs us to adapt." This illustrates how shared interests foster a sense of belonging, even in initially uncomfortable settings.

Being surrounded by supportive friends. Beyond the specific communities formed through neurodivergent peers or shared interests, five participants (31%) across five t-units (25%) described the importance of having the social support of their peers in fostering a sense of

belonging. For example, Isabella explained, “I felt I belonged on campus when my friends were very willing to join me in some counselling sessions with our school counsellor.” Their willingness to accompany Isabella to counselling sessions helped her navigate personal challenges and reinforced her connection to the campus community by showing she was not alone in her struggles. In a second example, Faygele described how the presence of friends made a significant difference: “I felt like I belonged on campus during student council meetings with all my friends around me. There were many people I didn’t know, but I sat with five other friends, and they made me feel welcomed.” Despite the larger group of unfamiliar faces, Faygele’s small circle of friends provided a sense of belonging and a buffer from any potential social exclusion.

Seeking out and building a social network. Furthermore, contrary to misconceptions that Autistic individuals lack motivation to build social connections, many participants reported that their intrinsic drive to form connections, along with a strong support network, significantly enhanced their campus belonging. Mark illustrated this by sharing how extroverted students helped him engage socially:

> *The majority of my belonging experiences came from extroverted students ‘recruiting’ me into various social activities. This included going to pubs, having video game nights, going to house parties, etc. Although some of these experiences were fairly overstimulating, many are dear to me.*

Mark’s intrinsic drive to connect, coupled with the efforts of extroverted peers, led to valuable social interactions that, despite sometimes being overwhelming, contributed significantly to his sense of belonging. Miskomin also described her overall positive experience of belonging on campus: “I had the chance to experience belonging at [university name], and it was a great

experience. I was able to make friends with people who I wouldn't have otherwise, and I loved that." This narrative emphasizes Miskomin's proactive approach to building social connections, which allowed her to form meaningful relationships and feel integrated into the university community. These examples show that, despite common misconceptions, Autistic students have a strong desire to build connections. With the right support and opportunities, they can foster a deep sense of belonging within the university community.

Discussion

What Does Belonging Mean for Autistic Post-Secondary Students? The AC-UBM

The Autism Centred - University Belonging Model (AC-UBM) builds upon Slaten and colleagues' UBM (2018) but distinguishes itself by clarifying factors that seem to drive the sense of belonging among Autistic post-secondary students in our sample. A second important contribution of this study is the importance of peer relations to Autistic post-secondary students' sense of university belonging, which aligns to an earlier conceptual version of university belonging from Slaten and colleagues (2016) as well as other models by Ahn & Davis (2020), Ménard and colleagues (2024), Vaccaro and colleagues (2015), and Young and colleagues (2023). By identifying key factors that promote belonging of Autistic post-secondary students, the AC-UBM also offers recommendations for creating supportive, inclusive spaces where Autistic students can truly belong. The following sections will discuss each pillar of the AC-UBM in detail, highlighting how University Support and Acceptance, University Affiliation, Faculty and Staff Relations, and Peer Relations shape the sense of belonging for Canadian Autistic post-secondary students. Additionally, actionable recommendations for universities to create more inclusive and supportive environments will be integrated throughout.

Pillar 1: University Support and Acceptance

Slaten et al. (2018) described University Support and Acceptance as "participants' sense of support and acceptance from their university, particularly the university's ability to provide supportive resources and opportunities for students' personal growth" (p. 7). This concept is particularly important for Autistic students, who face barriers that can hinder their sense of belonging in the university community. Research indicates that many Autistic students grapple with depression and anxiety due to social exclusion and feelings of isolation, emphasizing the need for more inclusive and supportive environments (McMorris et al., 2019). According to the interactionist model of disability (Dwyer, 2022), the experiences of Autistic students in post-secondary education are shaped by the interaction between their individual traits and the university environment. The AC-UBM builds on this model to explain why some students may not feel fully supported on campus: their sense of belonging is influenced by both their Autistic traits and the university environment, as well as the dynamic interaction between the two.

University Support and Acceptance for Autistic students involves recognizing and respecting their needs, allowing them to participate fully in both academic and social aspects of university life without masking their true selves. For these students, environments that cater to their sensory needs are essential. This aligns with Gelbar and colleagues (2014), who found that sensory-safe environments significantly impact Autistic students' comfort and ability to engage fully in academic settings. Given these insights, we recommend that universities prioritize the creation of sensory-safe environments as a fundamental aspect of fostering a sense of belonging and inclusion for Autistic students. To achieve this, universities can implement several practical strategies that address the unique sensory needs of these students.

First, universities should establish dedicated quiet areas across campus where students can retreat from overstimulating environments. These areas could include sensory rooms equipped with dimmable lighting, noise-cancelling features, and soft furnishings to provide a calm and soothing atmosphere. Such spaces should be easily accessible and well-publicized to ensure students know where to decompress and manage sensory overload (Gelbar et al., 2014). From an interactionist perspective (Dwyer, 2022), these sensory-safe areas reflect how the environment can either exacerbate or alleviate the experience of disability for Autistic students. By offering sensory-friendly spaces, universities modify the environment to better interact with the needs of Autistic individuals, reducing the disabling impact of overstimulation.

Second, classrooms should be modified to reduce sensory distractions that hinder concentration and engagement. This could involve using softer, natural lighting instead of harsh fluorescent lights, minimizing background noise through soundproofing, and allowing students to use sensory aids like noise-cancelling headphones or fidget tools during lectures. Additionally, offering flexible seating arrangements that allow students to choose spaces where they feel most comfortable can help reduce sensory stress and enhance focus (Gelbar et al., 2014). In line with the interactionist model, such modifications acknowledge that sensory sensitivities become disabling through the interaction between an individual's traits and an unaccommodating environment (Fletcher-Watson & Happé, 2019). By adapting classroom environments to better respond to individual needs and sensitivities, universities can reduce disabling interactions and create a more supportive learning experience for Autistic students.

Furthermore, universities should incorporate sensory considerations into common areas such as libraries, dining halls, and student lounges. For example, libraries can offer designated quiet zones with low lighting and minimal visual clutter, while dining halls could have

designated areas with reduced noise levels and fewer strong smells. These modifications help create environments where Autistic students can feel more at ease, thus enhancing their ability to engage fully with the campus community (Gelbar et al., 2014). Finally, universities should engage in ongoing dialogue with Autistic students to gather feedback and continuously improve campus environments. This could involve regular surveys, focus groups, or the establishment of an advisory committee that includes Autistic students, ensuring that their voices are central to decision-making processes (McMorris et al., 2019). By implementing these strategies, universities reduce sensory overload and create spaces that affirm and respect the diverse needs of Autistic students. This commitment to sensory-safe environments is not merely about accommodating differences; it is about fostering an inclusive campus culture where every student feels accepted, valued, and able to succeed academically and personally. Such efforts are crucial in addressing the barriers to belonging that Autistic students face and in promoting their overall well-being and success in higher education (Cage et al., 2017; Maitland et al., 2021; O'Keeffe, 2013).

Creating a truly inclusive and supportive environment for Autistic students in higher education requires intentional efforts that address their unique needs, particularly sensory experiences. The interactionist model highlights how these intentional efforts are fundamental, as disability is shaped by how the student's sensory, social, and learning needs (i.e., the experience of disability) interact with the school environment (Dwyer, 2022). However, fostering a sense of belonging for these students involves more than just physical spaces; it extends to how universities provide accessible support and opportunities for personal growth. Research highlights that when Autistic students feel recognized and supported through specialized services—such as mentoring programs and skill-building workshops—they are better equipped

to navigate the complexities of academic life and build meaningful connections within the university community (White et al., 2017). One of the most effective ways to create an inclusive environment for Autistic students is by implementing Universal Design for Learning (UDL) principles in the classroom. Universal Design for Learning (UDL) is particularly beneficial for Autistic students because it provides a flexible framework that accommodates diverse learning styles and sensory needs. Autistic post-secondary students often face challenges related to traditional learning styles, making standard teaching methods less effective for them (Cage et al., 2017). UDL addresses these challenges by offering multiple means of engagement, representation, action, and expression, thereby creating a more inclusive learning environment (Almeqdad et al., 2023). For instance, UDL allows for the use of alternative assessment formats, flexible deadlines, and various forms of content delivery, which are essential for supporting the academic success of Autistic students and reducing the barriers they typically face in traditional educational settings (CAST, 2024).

In addition to UDL, creating support groups specifically for Autistic students is crucial for fostering a sense of community and belonging. Autistic students often face social exclusion and stigma, which can lead to feelings of isolation (Davis et al., 2021). Support groups provide a safe space for these students to share their experiences, offer mutual support, and develop strategies for navigating university life (Hillier et al., 2018). Such groups are essential for building resilience and helping students feel connected to their peers, which is a critical aspect of belonging and overall well-being (Ghanouni & Quirke, 2023). By offering these targeted support systems, universities can help Autistic students integrate more fully into the campus community, reducing the social barriers that often impede their success. Lastly, to create a truly supportive environment, universities should invest in a culture of inclusivity through explicit resources and

programs designed for Autistic students. This includes developing accessible websites that clearly outline available support services, offering therapeutic resources tailored to the needs of Autistic students, and promoting a broader understanding and respect for neurodiversity among the student body and staff (Dwyer et al., 2023; Singer, 2017). Educating the entire campus community about autism and neurodiversity can help reduce unconscious biases and foster a more welcoming environment for all students (Dunn, 2019). By embracing these principles, universities can ensure that Autistic students feel valued, supported, and fully integrated into the university community. This commitment to inclusivity enhances the academic experience for Autistic students and supports their personal growth, aligning with the broader goals of higher education.

Institutional efforts to de-stigmatize disability are also crucial for enhancing a sense of belonging among Autistic students. Cai and Richdale (2016) suggested that reducing stigma in educational settings helps create an inclusive environment where Autistic students feel valued and understood. My findings support this; when universities actively challenge stereotypes and promote a culture of understanding, Autistic students report experiencing a stronger sense of belonging. Therefore, in line with other research that emphasizes the importance of inclusive environments and mental health support for Autistic students (Cage et al., 2017; Maitland et al., 2021; O'Keeffe, 2013), we recommend that universities integrate neurodiversity and disability into their Equity, Diversity, and Inclusion (EDI) initiatives. Doing so ensures that the needs and perspectives of Autistic students are considered alongside those of other marginalized groups (Dwyer et al., 2023; Janse van Rensburg & Liang, 2023).

To operationalize this, universities should educate faculty and staff about autism and standard accommodations, such as modified instruction, where teaching methods are adjusted to

better suit different learning styles, and providing various class participation options, like allowing written responses instead of verbal participation (Dwyer et al., 2023). Moreover, recognizing Autistic students' contributions significantly reinforces their sense of belonging. Sarrett (2018) found that when individuals within the institution recognize Autistic students' perspectives and skills, their connection to the academic community is greatly enhanced. This includes recognizing and valuing their input in class discussions, group projects, student organizations, and other university activities. For Autistic students, it is not just about being present; it is about having their ideas acknowledged, respected, and acted upon, which affirms their worth and strengthens their connection to the university community. My research aligns with these findings, indicating that recognition from all university community members contributes to Autistic students feeling more integrated and accepted. Universities can foster this sense of belonging by involving Autistic students in designing supportive environments and policies. By actively seeking their input on what they need to thrive, universities can create a campus culture that welcomes and genuinely supports Autistic students, leading to more effective strategies and better outcomes for everyone (Gillespie-Lynch et al., 2022).

Pillar 2: University Affiliation

Slaten and colleagues (2018) described University Affiliation as involving "an overall association with the university, including being a member of campus-affiliated organizations and having a global sense of university culture and/or pride" (p. 7). However, in our study, participants' written responses showed little evidence that Autistic students felt a strong sense of association with the university or pride in its culture when discussing their experiences of belonging (or lack thereof) on campus. This is consistent with the interactionist model of disability (Dwyer, 2022), which posits that individual experiences of disability are shaped by the

relationship between an individual's traits and the environment. While several participants were involved in school-based activities such as clubs and sports, my findings suggest a disconnect between mere participation in university activities and developing a deeper connection to the institution. Although involvement in campus events might offer a temporary sense of belonging, it does not necessarily translate into a meaningful affiliation with the university (Trowler, 2010), particularly for marginalized groups who may not feel fully included or valued within the broader campus culture (Anderson et al., 2017; Strayhorn et al., 2012; Strayhorn, 2008; Tinto, 2017; Vaccaro & Newman, 2016). At the same time, some responses indicated that participants did not feel particularly proud of their universities, likely due to a perceived lack of inclusivity from faculty, staff, and the broader university community. This perceived exclusion may prevent Autistic students from fully identifying with the institution (Holmes, 2024), a topic that will be discussed further below.

It is also possible that the way our survey question was framed did not fully encourage participants to reflect on their sense of 'University Affiliation.' The question may have inadvertently directed respondents' focus on other aspects of their university experience, such as immediate social circles or academic challenges, rather than their broader connection to the institution. Given these considerations, future studies should explore the factor of University Affiliation more thoroughly by revising survey questions to explicitly prompt participants to reflect on their sense of connection to the university as a whole. This could involve asking more direct questions about university pride, participation in campus-wide events, and feelings of institutional loyalty. Addressing these gaps in future research will provide a more comprehensive understanding of how University Affiliation contributes to the overall sense of belonging for Autistic students.

Pillar 3: Faculty and Staff Relations

Slaten and colleagues (2018) defined this pillar as measuring "participants' sense of connection to university faculty and staff, with higher scores indicative of a stronger sense of connection" (p. 8). They emphasized that "faculty and staff are representatives of the university, forming bonds and mentoring relationships with students" (p. 8). My participants clearly described how positive interactions with faculty and staff, where Autistic students feel understood and supported, can enhance their sense of belonging. Conversely, negative experiences, such as being marginalized or not fully included because of misunderstandings and/or stigma about their disability, can diminish their connection to the university. The interactionist model of disability (Dwyer, 2022) helps explain these findings by highlighting how the dynamic between individual traits and their environment shapes the experience of disability. In the context of Autistic students, the faculty's approach to teaching and support directly influences how these students experience their environment and, consequently, their sense of belonging.

My findings suggest that faculty can significantly enhance Autistic students' sense of belonging through several key approaches. First, academic support is essential. Gobbo and Shmulsky (2014) demonstrated that when instructors adapt their teaching strategies—such as by providing alternative testing formats, offering lecture recordings, and allowing flexible deadlines—Autistic students perform better academically and feel a stronger connection to the learning environment. This adaptability accommodates the diverse learning styles and needs of Autistic students, fostering a more inclusive classroom where these students can thrive (Hees et al., 2015). Specific strategies, like offering materials in various formats or allowing sensory

breaks, can further enhance their academic experience and contribute to a deeper sense of belonging.

Another critical aspect of fostering a sense of belonging is the careful management of students' confidentiality, particularly regarding their autism diagnosis. Autistic students often manage the disclosure of their diagnosis with caution, revealing it only when necessary to secure accommodations (Cox et al., 2017). When students have control over when and how their diagnosis is disclosed, they tend to feel more secure and engaged in their academic environment. My findings, in line with Cox and colleagues (2017), suggest that this control over disclosure helps reduce the stigma associated with their diagnosis and strengthens their sense of belonging. However, when faculty or staff share a student's diagnosis without their consent, it can lead to feelings of vulnerability and alienation, exacerbating the challenges they face. To build trust and rapport, universities must educate faculty and staff on respecting confidentiality and understanding the potential impact of unauthorized disclosure (Cox et al., 2017; Dwyer et al., 2023).

The presence of openly neurodivergent faculty and staff in the university community can play a significant role in promoting belonging for Autistic postsecondary students. Elliott and Brundell (2024) highlighted that visible neurodivergent role models among faculty can normalize neurodiversity and provide crucial support to neurodivergent students. For my participants, the presence of neurodivergent staff members reduced feelings of alienation and offered a sense of shared experience, contributing to an environment where they felt they belonged. To create a more supportive environment, universities should actively recruit and hire neurodivergent faculty and staff, particularly in roles within accommodation offices. Accardo and colleagues (2024) support this recommendation, suggesting that including neurodivergent

professionals promotes a more inclusive culture where diversity is celebrated and supported. By increasing the representation of neurodivergent individuals in these roles, universities can enhance the sense of belonging for Autistic students through visible representation and a deeper understanding of their unique challenges (Accardo et al., 2024; Elliott & Brundell, 2024).

Pillar 4: Peer Relations

In the AC-UBM, Peer Relations are emphasized as a critical component of belonging, encompassing peer acceptance, emotional support, social engagement, and perceptions from friends and peers. For many Autistic students, a sense of belonging is closely tied to personal connections, participation in interest-based groups, and engagement in activities that resonate with their identities (Coombs et al., 2023; Davis et al., 2021; Dwyer et al., 2023; Hillier et al., 2018). Among my participants, forming and sustaining friendships with Autistic and non-autistic peers was pivotal in creating a supportive community that enhanced their sense of belonging. These students' shared understanding and mutual support were crucial in helping them feel more integrated and comfortable within the campus environment.

The importance of Peer Relations contrasts with Slaten and colleagues' (2018) final university belonging model, as these researchers "removed items…related to student's sense of peer social support, group affiliation and engagement, and classroom experience" because "the scale development process found that the peer items did not load in the final scale that was developed" (Slaten et al., 2018, p. 7, 14). However, this exclusion may stem from how their questions were phrased or framed. They might not have fully captured the importance of peer relationships, particularly regarding emotional support and social engagement.

My findings suggest that Peer Relations are essential for Autistic students, with 48% of participants emphasizing its importance for their sense of belonging. To better reflect this in the

University Belonging Questionnaire (UBQ), I propose modifying the scale to include peer-related items that address the social aspects of university life. Research by Ahn and Davis (2020) supports this approach, highlighting that students often join clubs and social events to build connections, not merely to affiliate with the university. As the interactionist model suggests, the impact of peer interactions goes beyond social connection. These interactions are part of the dynamic between Autistic students' traits and their environment, helping them manage and adapt to their surroundings (Dwyer, 2022). Redefining the University Affiliation pillar to include these peer-related elements could address the gaps in Slaten and colleagues' (2018) model.

Another key finding of my study was the significant influence of peer relationships on the sense of belonging among Autistic post-secondary students. As such, my results challenge the stereotype that Autistic individuals are uninterested in forming friendships. While this misconception remains prevalent in both academic literature and society (Gillespie-Lynch et al., 2017; Jones et al., 2021; Turnock et al., 2022), my research shows that many Autistic post-secondary students actively seek to build social connections and genuinely value friendships that encourage them to step outside their comfort zones, fostering personal growth and more meaningful interactions. Participants valued these relationships because they provided opportunities for personal growth and meaningful social engagement. This aligns with research by Duerksen and colleagues (2021) and Han and colleagues (2022), who found that Autistic individuals often seek and appreciate relationships that enhance their development and sense of belonging. Notably, 24% of my participants specifically highlighted the positive impact of meaningful peer relationships on their sense of belonging (see Subtheme 4.2). This stresses the significance of acknowledging and supporting the social needs of Autistic individuals, as they value relationships that contribute to their well-being and community connection (Brownlow et

al., 2012; Calder et al., 2013). The supportive role of peer connections highlights how Autistic students' experiences of disability are shaped by their social environment, for example, emphasizing the need to understand how the interaction between individual traits and social dynamics influences their overall sense of belonging and inclusion (Dwyer, 2022).

To enhance the environment within Canadian universities, institutions should implement initiatives that promote understanding, inclusion, and meaningful connections among all students, particularly those who are Autistic. One effective strategy is to offer mentorship programs led by Autistic individuals. Peer mentorship programs that pair Autistic students with both Autistic and neurotypical peers can provide valuable social connections and reduce feelings of isolation (Trevisan et al., 2021). Mentorship programs also offer new students valuable guidance and role models (Coombs et al., 2023; Davis et al., 2021). That is, the presence of supportive and understanding peers can provide emotional support, reduce feelings of isolation, enhance their integration into the campus environment, and ultimately foster a sense of belonging (Coombs et al., 2023; Duerksen et al., 2021; Hiller et al., 2018). Our findings reinforce this perspective, suggesting that fostering peer relationships is a crucial component in supporting the sense of belonging for Autistic students. To further support this initiative, universities should offer interest-based involvement opportunities and clubs so that Autistic students can engage socially in a way that aligns with their preferences and strengths (Atherton et al., 2024; Dwyer et al., 2023). Consequently, by focusing on the experiences of Autistic students in forming and sustaining peer relationships, our study provides a richer, more nuanced understanding of how these relationships contribute to their overall sense of belonging. This approach not only addresses a gap in Slaten and colleagues' (2018) model but also stresses the importance of peer relations in the lives of Autistic individuals.

Limitations

One fundamental limitation of this study is the small sample size. While qualitative studies aim to capture depth over breadth, fewer participants may have limited the variety of perspectives explored in this study. This could affect the credibility and transferability of the findings (Lincoln & Guba, 1985). Credibility, in this context, refers to how accurately the participants' experiences are represented (Lincoln & Guba, 1985). With a smaller sample, certain voices or experiences within the Autistic community (e.g., Autistic individuals with Intellectual Disabilities) may not have been fully captured, potentially reducing the range of insights into the broader Autistic population. Though effective for targeting specific groups, the use of purposeful sampling may have introduced selection bias. This method may lead to an overrepresentation of specific experiences while underrepresenting others, affecting the richness and diversity of the data (Palinkas et al., 2015; Patton, 2015). Consequently, the findings may reflect a narrower view of the Autistic community than intended, which raises concerns about transferability—how applicable the findings are to other contexts or groups (Lincoln & Guba, 1985).

Additionally, given the pilot nature of this study, we did not attempt to reach data saturation—the point at which no new themes emerge during analysis (Guest et al., 2006). In qualitative research, saturation is essential for ensuring that a study captures the full range of participant experiences (Guest et al., 2006). However, saturation was not expected because this was a pilot study aimed at generating initial insights. As a result, some key themes or nuanced insights may not have fully emerged, which could impact the dependability of the findings or their consistency and reliability over time (Shenton, 2004). While qualitative research does not aim for generalizability in the same way as quantitative studies, the small sample still challenges the broader application of these findings to the Autistic community. Purposeful sampling helps

gather detailed data, but it can skew the results toward certain experiences, limiting how representative the findings are for the wider Autistic population (Palinkas et al., 2015).

While this study intentionally recruited individuals with multiple minority identities to explore how intersecting factors might influence their sense of belonging, While this study intentionally recruited individuals with multiple minority identities to explore how intersecting factors might influence their sense of belonging, I am proud of the diversity in my sample, which included 32% gender-diverse participants, 32% bisexual/pansexual participants, and 12% who identified as homosexual (gay or lesbian). However, our sample could have been more extensive in many ways. Unfortunately, it was disappointing that few participants explicitly described how their intersecting identities impacted their sense of belonging at university. Since this was a pilot study, we have used these insights to improve the TBQ survey, which will be used in a more extensive study this fall. In the revised version, we added more targeted long-answer questions encouraging participants to explore and articulate how their identities—such as gender, sexuality, race, and disability—intersect and influence their sense of belonging in the university environment. This will help us gather more detailed and nuanced data on these aspects.

My mall sample size meant that I could not specifically examine how the experiences of Autistic postsecondary students with multiple minority identities (e.g., racial and ethnic minorities, sex and gender minorities) s might differ from Autistic adults who do not hold multiple minority identities. For instance, the experiences of participants who are people of colour or who are responsible for supporting themselves financially could differ significantly from others, potentially affecting their sense of belonging on campus. The importance of considering intersectionality in research is well-documented. For example, Else-Quest and Hyde (2016) emphasize that intersecting identities, such as race and gender, create unique experiences

of marginalization, which are often overlooked when studies focus on a single aspect of identity. Bowleg (2021) similarly argues that understanding these complexities requires an intersectional approach, revealing how multiple identities interact and shape lived experiences. Future research should address this limitation by incorporating an intersectional approach to examine how intersecting identities—such as race, gender, and socioeconomic status—impact the sense of belonging of Autistic students. Ames et al. (2020) highlight that Autistic individuals who also belong to other marginalized groups, such as racial minorities or LGBTQ+ individuals, face different challenges that are often missed when autism is studied in isolation. By adopting an intersectional lens, future research, including the forthcoming rollout of our study, can provide a more comprehensive understanding of the diverse experiences of Autistic post-secondary students in Canada.

Another limitation of this study relates to the impact of institutional characteristics on students' sense of belonging. Due to the small sample size and qualitative methodology, this study could not explore how factors such as geographic location, institutional size, the availability of resources (e.g., financial), or broader contextual factors affect students' experiences. Research suggests that these elements can significantly shape students' sense of belonging. For instance, Griffin and Allen (2006) emphasize that the availability and quality of support services, closely tied to institutional resources and funding levels, play a crucial role in fostering students' feelings of inclusion and belonging. To address this limitation, future studies should consider how location, institutional size, and available resources impact Autistic students' sense of belonging. By adopting a comparative approach, researchers could identify best practices and pinpoint areas where institutions excel and where there are opportunities for improvement.

Finally, it is important to recognize that broad comparisons across different institutions are challenging in qualitative research because qualitative studies focus on in-depth, context-specific experiences rather than generalizations (Maxwell, 2013). However, approaches such as multiple case studies can help researchers explore how external factors impact students' experiences across different institutions (Stake, 2013). For example, comparing the experiences of Autistic students at a large urban university with those at a small rural college could reveal how location, size, and available resources influence their sense of belonging on campus.

Conclusion

Belonging for Autistic post-secondary students is a multifaceted experience beyond mere physical presence on campus. It encompasses feeling accepted, valued, and integrated within the university community. The AC-UBM provides a more detailed and nuanced understanding of belonging for Autistic post-secondary students. It offers a comprehensive framework that surpasses existing models by incorporating subthemes, Autistic community partners as active researchers, and focusing on participant experiences and needs. The AC-UBM's emphasis on cultural change, social networks, and dynamic interactions provides a robust foundation for universities aiming to create truly inclusive and supportive environments for Autistic students. Implementing our recommendations can significantly enhance the university experience for Autistic students, ensuring they feel accepted, valued, and able to thrive in all aspects of university life. Therefore, continuous efforts to foster inclusive practices and understanding within the university community are essential to sustain a sense of belonging for Autistic post-secondary students in Canada–an experience they undoubtedly deserve

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Appendix A

Figure A1

Recruitment Flyer

Figure A2

The Screening Questionnaire

1. Does the following statement apply to your situation: "I have attended a Canadian university for at least 6 months at some point in my life" (Please note: It does not have to be 6 *consecutive* months):

    - Yes
    - No (Survey terminates)

2. Have you ever been formally diagnosed with autism? Autism diagnoses include the following labels: Asperger's syndrome, autism spectrum disorder, Autistic disorder, PDD-NOS, and more. (Please note that you will **not** be excluded if you are self-diagnosed.)

    - Yes
    - Unsure
    - No

3. Whether or not you have received a formal diagnosis of autism, do you self-identify as an Autistic person, as having autism, or of being on the autism spectrum?

    - Yes
    - No (Survey terminates)

4. Are you comfortable completing the study in spoken or written English?

- Yes
- No (survey terminates)

5. What is your first and last name?
6. What is your preferred name or what name would like us to use in our interactions with you?
7. Please share your pronouns (if you are comfortable doing so) Examples: he, she, they etc.
8. What is your email address?
9. How would you like to be identified?
    - Using Identity-first (e.g., Autistic person) language
    - Using person-first (e.g., person with autism) language
    - I do not have a preference. Either is fine.
    - Other: _____

A common criticism of researchers studying autism is that we do not capture diverse samples in our studies. To help us recruit a diverse sample of participants, we are asking you to describe whether or not you belong to other equity-seeking groups. These questions are to enable us to intentionally include marginalized and/or under-researched subpopulations of those on the autism spectrum in this study.

If you prefer not to answer **ANY** of the following questions, you may **skip the question**.

10. What is the year of your birth? (Please enter a 4 digit number, e.g., 2004): _____

11. What university did you most recently attend?

12. Please share your **race and/or ethnicity** (if you are comfortable doing so):

13. Other than English, what **language(s)** do you read, write and/or speak fluently? (If there are no other languages other than English, you may say 'none'):

14. Please share your **gender identity** (if you are comfortable doing so). Examples include (in alphabetical order): auti-gender, gender nonbinary, gender nonconforming, man, trans man, trans woman, two-spirit, woman, and many more:

15. Please share your **sexual orientation** (if you are comfortable doing so). Examples include (in alphabetical order): asexual, bi-sexual, demi-sexual, heterosexual, homosexual, and many more:

16. Do you have any **co-occurring conditions**? This includes both formally and self-diagnosed conditions. Examples might include mental health related conditions (e.g., anxiety) or medical conditions (e.g., epilepsy) and more. If you are comfortable doing so, please list all that apply:

17. Which of the following applies to your situation? Throughout my post-secondary education, my **financial resources** (including any support from my family) generally:

    - Did not meet my needs
    - Exceeded my needs
    - Met my needs

- I prefer not to answer this question

18. Someone who experiences **food insecurity** often worries about where their next meal will come from, worries about getting enough to eat, may need to access food banks, and/or often feels like they do not have enough money to eat. Are you experiencing (or did you experience) food insecurity during your post-secondary education?

    - Yes
    - No
    - Sometimes or to some extent
    - I prefer not to answer this question

Figure A3

Belonging Survey: Part 1

Belonging Survey: Part 1 (Short Answer) (B-SA)

DRAFT 5 Aug 1, 2022

Only participants who have been selected to participate will complete Belonging Survey: Part 1 (Short Answer). Participants will receive a $25 gift card for completing the Belonging survey and our three questionnaires (Strengths, CATI, ESQ-R, Ranking Priorities Activity)
Their will be two versions of the survey one using identity-first language and the other will use person-first, this will be done to ensure that the participants are filling out surveys that match the language they identify with.

Thank you for agreeing to complete our Belonging Survey: Part 1 (short answer). There are 28 questions on this survey across four sections:

Section 1. Background Information
Section 2. Employment and Finances
Section 3. Supports and Accommodations
Section 4. University Environment

Section 1. Background Information

This section has nine questions (Questions 1 - 9)

1. Which of the following applies to you:
   (*Please note*: It does not have to be 6 **consecutive** months):
   - ☐ I am currently attending a Canadian university and have done so for at least 6 months **(Takes participant to SURVEY 1)**
   - ☐ I have attended a Canadian university for at least six months, but I am not currently registered as a student **(Takes participant to SURVEY 2)**

2. **Survey 1 and 2**: Were you diagnosed in a clinical/professional setting? (Please note that you will **not** be excluded if you are self-diagnosed.) Please only tell us what you are comfortable with sharing.
   - ☐ I have a formal diagnosis by a medical/clinical professional (psychiatrist, psychologist, developmental pediatrician, medical doctor, etc.)
     - ☐ If so, what age did you first receive the diagnosis? _____
   - ☐ I have been told by a medical or clinical professional that it is likely that I am autistic, but I have not undergone an assessment.
   - ☐ I am self-diagnosed

3. How do you feel about being autistic? Please select all that apply. (Valence question from Kapp et al. 2013)
   - ☐ happy
   - ☐ sad

- ☐ proud
- ☐ angry
- ☐ content
- ☐ overwhelmed
- ☐ indifferent
- ☐ excited
- ☐ ashamed
- ☐ bored
- ☐ confused
- ☐ other (please specify): _____
- ☐ I don't know
- ☐ I prefer not to answer this question

4. At approximately what age (in years) did you first realize or understand that you were on the autism spectrum? Numeric response expected ____

5. When were you first offered accommodations for a diagnosis of autism, e.g., at school or at work, with SLP, OT, etc? Please give your age in years, even if it's the same as above_____

6. Do you have any co-occurring conditions? This includes both formally and self-diagnosed conditions. If you do not have any co-occurring conditions, please select the option "Not applicable". Note: Please only tell us about conditions that you are comfortable sharing. You will be included in the study whether or not you have co-occurring conditions. Please check as many that apply, if you are comfortable doing so.
    - ☐ **learning and attention disorders,** including but not limited to dyslexia or reading disability, nonverbal LD, dyscalculia or math disability, disorder of written expression, ADHD primarily inattentive, ADHD with hyperactivity
    - ☐ **autoimmune disorders**, including but not limited to rheumatoid arthritis, juvenile or type 1 diabetes, multiple sclerosis, thyroid disorders
    - ☐ **mental health conditions**, including but not limited to the anxiety disorders, bipolar disorder, clinical depression / dysthymia, OCD, PTSD, eating disorder, personality disorders, schizophrenia
    - ☐ **medical and neurological conditions** not already mentioned, including but not limited to chronic pain of any cause, chronic fatigue, epilepsy, long haul Covid, migraines, post-concussion syndrome, Tourette's syndrome
    - ☐ **Other**: any condition we haven't mentioned that has an impact on your overall health _____
    - ☐ I prefer not to answer this question
    - ☐ Not applicable: I do not have any co-occurring conditions

7. Survey **1 and 2**: When given a choice, would you rather attend post-secondary classes:
    - ☐ In-person
    - ☐ Online synchronous

- ☐ Online asynchronous
- ☐ Blended
- ☐ Any format is ok with me
- ☐ Other _____

8. **Survey 1 and 2**: What is the highest degree or level of school you have completed? If you are currently a post-secondary student, please indicate the highest degree you have received so far.
   - ☐ High school diploma or equivalent
   - ☐ College diploma
   - ☐ Bachelor degree (e.g., BA, BSc, BEng, and more)
   - ☐ Master degree (e.g., MA, MSc, MEd, and more)
   - ☐ Doctoral degree (e.g., PhD, EdD, PsyD, etc.)
   - ☐ Postdoctoral Fellowship or Medical Residency
   - ☐ Advanced law degree (e.g., LLB, LLM, JD, etc.)
   - ☐ Other (please describe)
   - ☐ I prefer not to answer this question

9. Academic discipline (short answer)
   SURVEY 1: What is your current faculty or discipline of study?
   SURVEY 2: What was your most recent faculty or discipline of study?

Section 2. Employment and Finances

This section has three questions (Questions 10 - 12)

10. During the regular school year (e.g., Fall and Winter terms), were you generally employed in at least one job in order to cover your basic expenses?
    a. Yes
    b. Sometimes yes, and other times no
    c. No
    d. I prefer not to answer this question

    [If participant chooses A or B, then they will get this follow-up question] Please check any of the following that apply to you:
    - A. I usually worked part-time (20 hours or less per week) during the regular school year
    - B. I often worked full-time even during the regular school year (more than 20 hours per week)
    - C. My working hours were highly variable from week to week (or from semester to semester)
    - D. I am (or have been) employed on-campus
    - E. Other _____
    - F. I prefer not to answer this question

11. During your post-secondary education, do you currently (**SURVEY 1**) … did you in the past (**SURVEY 2**) primarily live … (please check all that apply)
    - ☐ on-campus
    - ☐ off-campus
    - ☐ with family
    - ☐ with roommates
    - ☐ Alone
    - ☐ Other _____
    - ☐ I prefer not to answer this question

12. How do you currently pay (**SURVEY 1**) … did you in the past pay (**SURVEY 2**) …for university expenses (including: tuition, living expenses, textbooks)? Please select all that apply
    - ☐ Employment Income
    - ☐ Personal Savings
    - ☐ Parent/Guardian/Family Support
    - ☐ Student Loans
    - ☐ Scholarships/Bursaries/Grants
    - ☐ Student Line of Credit
    - ☐ I prefer not to answer this question
    - ☐ Other _____

Section 3. Supports and Accommodations

This section has five questions (Questions 13 - 17)

We are going to ask a short series of questions about your use of academic accommodations. Even if you used accommodations just once, we're interested in your experience. This may include formal accommodations provided by the university and informal accommodations provided by faculty, staff, or peers.

13. **SURVEY 1 and 2:** Did you use any accommodations available to students with a disability, e.g., test and exam accommodations, note-taking services, or access to a technology centre?
    1. Yes
    2. Most of the time
    3. Sometimes
    4. Rarely
    5. No

    [unranked option #1]: I prefer not to answer this question

14. **If participants answer 1-4 on question 12 they will get the following follow-up question:** Still thinking about accommodations available to any student with a disability, were the accommodations that were offered to you helpful?
    1. Yes, the accommodations were generally helpful

2. Yes, the accommodations were generally helpful, but the accommodations caused me other problems
3. Some of the accommodations were helpful, some were not
4. I tried what was offered, but the accommodations were too much work to set up every time
5. I tried what was offered, but the accommodations didn't help me
   [unranked option #1]: I prefer not to answer this question
   [unranked option #2]: none of these options fit my experience

15. **SURVEY 1 and 2:** Did you use accommodations that were designed specifically for autistic students (e.g., noise-reducing headphones; an autistic peer mentor program)?
    1. Yes, and my university offered accommodations that were designed specifically for autistic students
    2. Yes, but I designed the accommodation and the university implemented formally for other students
    3. Partially -- I designed the accommodation and arranged it informally with my professors or the accessibility office
    4. No -- I suggested an accommodation, but my needs were not heard/understood and it was not implemented
    5. No -- None were available; my university did not offer any accommodations that were designed specifically for autistic students
       [unranked option #1]: I prefer not to answer this question
       [unranked option #2]: None of these options fit my experience
       [unranked option #3]: I did not use accommodations because I was not in a position of knowing what would be helpful for me

16. **SURVEY 1 and 2:** Please select all on-campus supports or services that you currently access or that you have accessed in the past
    - ☐ Vocational Support (e.g. university career centre, etc.)
    - ☐ Mental Wellness Supports (e.g. counselling, peer support, etc.)
    - ☐ Religious/Spiritual Supports (e.g. interfaith chapel, etc.)
    - ☐ Physical Wellness Supports (e.g. campus gym, campus-based recreation and sports teams, etc.)
    - ☐ Hobby/Interest Groups, Clubs, or Associations (e.g. D&D, Robotics Club, Book Club, etc.)
    - ☐ On campus medical clinics (e.g. doctors, vaccination clinics, etc.)
    - ☐ Gender or 2SLGBTQIA+ Groups, Clubs, or Associations (e.g. University Pride Centre, women's groups, etc.)
    - ☐ Racial or Ethnic Groups, Clubs, or Associations (e.g. university BLM groups, etc.)
    - ☐ Disability Pride Groups (e.g., student disability societies, Autistic pride groups, etc.)
    - ☐ Prefer not to share
    - ☐ Other _____

[For each of the supports the student accessed, they will be asked to rate whether or not the support was generally helpful]

16A. Was **[insert NAME OF SUPPORT: e.g.,Vocational Supports or Hobby/Interest Groups, Clubs, or Associations]** generally helpful to you?

1. Yes -- [name of support] was extremely helpful every time I accessed it.
2. Yes -- [name of support] was almost always helpful, with few exceptions
3. Sometimes -- [name of support] was helpful, but it depended on other factors (e.g., who else attended, who was running the activity)
4. Rarely -- [name of support] was generally not helpful to me.
5. No -- [name of support] was never helpful to me

   [unranked option #1]: I prefer not to answer this question

   [unranked option #2]: none of these options fit my experience

17. **SURVEY 1 and 2:** Did you feel that you needed to rely on your parent(s), mentor(s), family or friend(s) (i.e., your support network) to be successful at university? For example, some students need help getting to and from campus, staying organized and on top of deadlines, advocating with professors or university bureaucracy, etc.
    1. Yes, throughout the academic year, I needed to rely on my support network a great deal to be successful at university
    2. Yes, there were periods of time throughout the academic year during which I needed to rely on my support network
    3. Sometimes I required help throughout the academic year from my support network, but it wasn't often
    4. I did need help occasionally throughout the academic year from my support network, but it was no more than any of my peers
    5. No, I was able to navigate university throughout the academic year pretty much on my own

       [unranked option #1]: I prefer not to answer this question

       [unranked option #2]: none of these options fit my experience

       Follow-up short answer question: Who is/was your support system at university? Please tell us a little bit about the people in your support system.

Section 4. University Environment

This section has ten questions (Questions 18 - 28). We have divided Section 4. University Environment into two subsections:

4.1 Belonging and Advocacy (Questions 18 - 20)

4.2 Common Barriers to Accessibility (Questions 21 - 28)

4.1 Belonging and Advocacy

18. **SURVEY 1 and 2:** Please respond to the each of the following statements using this rating scale
(based on Gloria et al 1996 University Environment Scale)
    1. Not at all true of my university experience
    2. Rarely true of my university experience
    3. Somewhat true of my university experience
    4. Mostly true of my university experience
    5. Very true of my university experience
    [unranked option #1]: I prefer not to answer this question
    [unranked option #2]: none of these options fit my experience

    A. University staff have been warm and friendly
    B. I did not feel valued as a student on campus
    C. I felt comfortable in the University environment
    D. Faculty and staff have not been available to discuss my academic concerns
    E. My university seems to value neurodivergent students
    F. Library staff is willing to help me find books and/or other resources
    G. My university seems like a cold, uncaring place to me

19. How likely are (or were) you to disclose your autistic identity to the following groups of people at your university?

    1 - I never shared my autistic identity with this group of people, regardless of the person with whom I was interacting
    2 - I rarely shared my autistic identity with this group of people, unless I had met one of them before
    3 - I sometimes shared my autistic identity, depending on the individual with whom I was dealing
    4 - I almost always shared my autistic identity with this group
    5 - I always shared my autistic identity with this group of people, regardless of who I was dealing with
    [unranked option #1]: I preferred not to share my autistic idenity, but I often felt pressured to disclose to this group of people
    [unranked option #2]: I prefer not to answer this question
    [unranked option #3]: None of these options fit my experience

a. Accessibility advisors
b. Professors or instructors
c. Teaching assistants
d. Friends
e. Romantic partners
f. New classmates or unfamiliar peers
g. Mental health counselor or therapist

20. Do you engage in autism activism / advocacy? (please check any that apply)
    - ☐ yes, I actively educate others to help end stigma associated with being autistic
    - ☐ yes, I welcome helping people understand my differences
    - ☐ yes, it's a part of my life whether I like it or not
    - ☐ sometimes, but there are days when I don't feel like it
    - ☐ I prefer not to have to explain myself
    - ☐ no, who I am is my business
    - ☐ no, it's not my problem whether other people understand autism
    - ☐ I prefer not to answer this question
    - ☐ none of these options fit my experience
    - ☐ Add other option

    If yes, are you part of a group that engages in autism advocacy? Please tell us a little about your group: _____

4.2 Common Barriers to Accessibility

21. **SURVEY 1 and 2:** *"Accessible means a person with a disability is afforded the opportunity to acquire the same information, engage in the same interactions, and enjoy the same services as a person without a disability in an equally effective and equally integrated manner, with substantially equivalent ease of use. The [disabled person] must be able to obtain the information as fully, equally and independently as a person without a disability."* (NC State University, 2022).

    During my post-secondary education, I was able to obtain information, engage in the same interactions, and enjoy the same services as fully, equally and independently as a person without a disability

    1. Not at all true of my university experience
    2. Rarely true of my university experience
    3. Somewhat true of my university experience
    4. Mostly true of my university experience
    5. Very true of my university experience

    [unranked option #1]: I prefer not to answer this question

[unranked option #2]: none of these options fit my experience

We will now be asking some questions on common barriers to accessibility, we define these barriers as systemic issues that create unnecessary problems for people with disabilities. Specifically, we will ask about **five common barriers to accessibility (according to the Council of Ontario Universities, 2013).**

The participants will use a rating scale for Questions 22 through 26:

1. Not at all true of my university experience
2. Rarely true of my university experience
3. Somewhat true of my university experience
4. Mostly true of my university experience
5. Very true of my university experience

[unranked option #1]: I prefer not to answer this question

[unranked option #2]: none of these options fit my experience

22. **SURVEY 1 and 2:** *"Attitudinal Barriers refer to perceptions and assumptions that discriminate against [disabled persons]. These barriers often come from a lack of understanding, which can lead people to judge, to ignore, or have misconceptions about a person with a disability. Examples include forming ideas about a person based on stereotypes or presenting accommodations as a special favour, and more".*

    During my post-secondary education, I experienced ***Attitudinal Barriers***.

23. **SURVEY 1 and 2:** *"Organizational or Systemic Barriers refer to the procedures, policies, or practices that unfairly discriminate or can prevent a [disabled] person from participating fully in a situation. Examples include requiring students to take a full course load, onerous documentation or paperwork requirements to access services or accommodations, requiring students to demonstrate their understanding of course content in only one way, inflexible required courses, and more".*

    During my post-secondary education, I experienced ***Organizational or Systemic Barriers.***

24. **SURVEY 1 and 2: "Architectural or Physical Barriers** refer to elements of indoor or outdoor spaces of buildings that create barriers to disabled persons. Examples might include: poor

lighting making a physical space inaccessible for those with reduced visibility, narrow doorways making a physical space inaccessible to wheelchair users, attending class in spaces with unfriendly sensory environments (e.g., noisy machines or too bright lights), offering a narrow range of foods in cafeterias, and more."

During my post-secondary education, I experienced ***Architectural or Physical Barriers.***

25. **SURVEY 1 and 2:** *"Information or Communications Barriers occur when sensory disabilities (such as seeing or hearing) or learning disabilities have not been considered. These barriers often relate to the sending and receiving of information. Examples include confusing and poorly designed lectures, unclear language, or print that is too small or difficult to read, and more."*

    During my post-secondary education, I experienced ***Information or Communications Barriers.***

26. **SURVEY 1 and 2:** *"Technological Barriers occur when a technological platform or a device is not accessible to its users and no appropriate assistive device is provided by the university. These technical barriers are often related to information and communications barriers, but we are interested in hearing more about technical barriers in particular. Examples include professors not providing documents with readable text, providing lecture videos with poor audio quality, not using subtitles, and more.*

    During my post-secondary education, I experienced ***Technological Barriers.***

27. **SURVEY 1 and 2:** People tend not to be explicit about their biases and judgments, yet their behaviours still show us their prejudice. For example, a peer will treat you like a child by patting you on the head or giving you information that is evident to everyone, including you, in the room -- that is, they'll be condescending at the same time they are appearing to be helpful or kind. Throughout your university experience so far, did the following groups of people generally treat you as their equal, or did you feel that they were condescending towards you? Please respond using the following scale:

    1. I never felt that they treated me as an equal
    2. I rarely felt treated as an equal
    3. It's about 50/50
    4. I felt like I was treated as an equal most of the time, but not always
    5. I felt that I was almost always treated with respect

    [unranked option #1]: I prefer not to answer this question

    [unranked option #2]: Not applicable AND/OR none of these options fit my experience

a. Accessibility Advisors
b. Professors or instructors
c. Teaching assistants
d. Friends
e. Romantic partners
f. New classmates or unfamiliar peers
g. Mental health counselor or therapist

28. **SURVEY 1 and 2:** Thank you for taking the time to complete this survey! We appreciate the opportunity to learn from your experiences to help improve the post-secondary education in Canada for autistic students and we will now send you the first $25 gift card.

    Would you be willing to tell us about your experiences in more detail? If so, we will send you one final survey in which you can share your experiences at university in more depth. Completing the final survey will earn you a second $25 gift card.

    - ☐ Yes - I am willing to share more about my experiences in university. Please send me the final survey!
    - ☐ No - I am not interested in completing the final survey
    - ☐ No - I am not interested in completing the final survey at this time. However, you may follow-up with me at a later date

Figure A4

The Belonging Questionnaire – Part 2

Belonging Survey: Part 2 (Long Answer Questions) (B-LQ)

Note: We will initially ask for these responses in writing on the Belonging Survey. These are also the questions we intend to ask during the follow-up interviews (time permitting). Participants may choose to skip any question.

B-LQ1. Campus Climate

Refers to Autistic post-secondary students in general

Definition of Campus Climate: "The current attitudes, behaviors and standards of faculty, staff, administrators and students concerning the level of respect for individual needs, abilities and potential." (Rankin, 2008).

"Autism acceptance can be defined as an individual feeling accepted or appreciated as an Autistic person, with autism positively recognised and accepted by others and the self as an integral part of that individual" (Cage, Di Monaco, & Newall, 2017, p. 474).

Please respond to one or more of the following prompts:

- Thinking about Autistic students generally, how would you describe the level of autism acceptance on your campus?
- When thinking about campus climate, are there vivid memories that come to mind? What is one of your most positive/best (or most negative/worst) memories?
- How did the campus climate impact you?

B-LQ2. Belonging

Refers to you (the participant) specifically

Belonging Question 1: Fitting in requires changing who you are in order to be valued. Belonging means that you are accepted just as you are (Brown, 2010).

Belonging is the experience of being able to comfortably express who you are and being met with acceptance, connection, support, and understanding. It is also the feeling of being included in different groups, situations, experiences, places, and more.

Please respond to one of the following prompts:

- Can you tell me about a vivid memory of a time when you felt like you belonged on campus? What was happening? Who else was there?
- Can you share a little bit about why you may not have always felt that you belonged on campus? Why not?
- To what extent did your university provide opportunities for you to feel that you belong on campus? For example, was there an easy to find mention of supports for autism online? Did your professors normalize using the disabilities office during their opening classes? Did anyone in a mentoring program express acceptance of neurodiversity? Please give an example if you can.

Belonging Question 2: What do you think universities should be doing to identify and build environments in which Autistic students are welcomed?

B-LQ3. Peers and Friends

Peers and Friends Question 1: Can you tell me about one or more of your closest friends? Who are they? How long have you known them? Are they in your university program? What is/was it about them that makes/made them a good friend?

Peers and Friends Question 2: To what extent did your university provide opportunities for you to make meaningful peer connections (i.e. social events, peer mentorship)? For example,

1. Did your university offer any campus-based activities (i.e., rec teams, clubs) that helped foster peer connections? If so, please explain.
2. Did your university offer any online university student groups associated that helped foster peer connections (i.e. Facebook groups, Instagram pages, Discord). If so, please explain.
3. Did your university offer you opportunities to form meaningful connections with other neurodivergent students?

Peers and Friends Question 3: What do you think universities should be doing to foster friendships and peer connections for Autistic students?

B-LQ4. Intersectionality

We all have many identities, and each identity (gender, race/ethnicity, culture, class, sexual orientation, dis/ability, and many more) impacts all parts of our lives (Sins Invalid, 2019).

"What makes intersectionality unique is the fact that it considers identities as interacting with one another, rather than simply separate identities from which the most 'oppressed' is most salient (Pearson, 2010). The oppression that one is subject to - if one is a Black woman - is not a reaction to her race and gender separately, as would be explained by "...the additive analysis of oppression, which separates race, class,

and gender into either/or categories within a stratified hierarchy" (Pearson, 2010, p.342). Rather, it is the interaction of both of these identities that results in a qualitatively unique experience of oppression (Crenshaw, 1989; 1991; quoted in Saxe, 2017, p. 154/155)."

For example, an Autistic student who also identifies as BIPOC (Black, Indigenous, or Person of Colour) and/or identifies as 2SLGBTQIA+ would not only have to navigate as an Autistic person but also deal with prejudice and racism from their other identities, thereby creating a unique experience of oppression. In contrast, a BIPOC, Autistic person who was also born into an incredibly wealthy family may experience autism quite differently thanks to their privilege based on their family's wealth, power, and connections.

Can you tell us a story of how your intersectional identities may have influenced your experience at university? You can choose to tell us a story about when you experienced unique discrimination and/or privilege thanks to your intersectional identities.

B-LQ5. Disclosure

Autistic students often have to navigate when and how to disclose their Autistic identity with peers, friends, as well as with university faculty and staff.

Can you tell us about a time when you did (or did not) disclose your Autistic identity during university, and what your reasons were? Do you feel that you made the right decision to disclose or not disclose your Autistic identity in your example?

B-LQ6. Unintentional Outcomes of Support

Did any of the accommodations or supports that you were offered by your university make things better in some ways and harder in others?

In other words, the support or accommodation may have done what was intended and provided some support, but it also caused other negative consequences. For example, an Autistic student might have chosen to write their exam in a quiet, alternative location to help with noise sensitivities, but it also meant that they were not able to ask their professor for help when an exam question was unclear.

Can you tell us about a time when the accommodations or supports that you were offered by your university made things better in some ways and harder in others?

B-LQ7. Negative Attitudes

Attitudinal Barriers refer to perceptions and assumptions that discriminate against persons with disabilities. These barriers often come from a lack of understanding, which can lead people to judge, ignore, or have misconceptions about a person with a disability. Examples include forming ideas about a person based on stereotypes or presenting accommodations as a special favour, and more.

Have you experienced discrimination specific to being Autistic? If yes, please tell us about one instance or example that you remember well.

B-LQ8. Common Barriers to Accessibility

Referring to 4.2 Common Barriers to Accessibility on the Belonging Survey: Part 1 (Short Answer)

On Questions 22 - 26, participants who responded:

- “Somewhat true of my university experience”
- “Mostly true of my university experience”, OR
- “Very true of my university experience”

will get the following follow-up long-answer question:

“Attitudinal Barriers refer to perceptions and assumptions that discriminate against [disabled persons]. These barriers often come from a lack of understanding, which can lead people to judge, to ignore, or have misconceptions about a person with a disability. Examples include forming ideas about a person based on stereotypes or presenting accommodations as a special favour, and more”. Please provide one example of a time when you experienced Attitudinal Barriers?

“Organizational or Systemic Barriers refer to the procedures, policies, or practices that unfairly discriminate or can prevent a [disabled] person from participating fully in a situation. Examples include requiring students to take a full course load, onerous documentation or paperwork requirements to access services or accommodations, requiring students to demonstrate their understanding of course content in only one way, inflexible required courses, and more” Please provide one example of a time when you experienced Organizational or Systemic Barriers?

“Architectural or Physical Barriers refer to elements of indoor or outdoor spaces of buildings that create barriers to disabled persons. Examples might include poor lighting making a physical space inaccessible for those with reduced visibility, narrow doorways making a physical space inaccessible to wheelchair users, attending class in spaces with unfriendly sensory environments (e.g., noisy machines or too bright lights), offering a narrow range of foods in cafeterias, and more.” Please provide one example of a time when you experienced Architectural or Physical Barriers?

“Information or Communications Barriers occur when sensory disabilities (such as seeing or hearing) or learning disabilities have not been considered. These barriers often relate to the sending and receiving of information. Examples include confusing and poorly designed lectures, unclear language, or print that is too small or difficult to read, and more.” Please provide one example of a time when you experienced Information or Communications Barriers?

“Technological Barriers occur when a technological platform or a device is not accessible to its users and no appropriate assistive device is provided by the university. These technical barriers are often related to information and communications barriers, but we are interested in hearing more about technical barriers in particular. Examples include professors not providing documents with readable text, providing lecture videos with poor audio quality, not using subtitles, and more. Please provide one example of a time when you experienced Technological Barriers?

B-LQ9. Magic Wand Question

If you could change one thing today to improve the university experience for all Autistic students, what would it be and why?

Appendix B

Table 4

Deleted/Unused Participant Quotes

Participant	Quote
1	N/A
2	N/A
3	N/A
4	I can't wait to hear. Something special happened when you were on campus and can tell you a bit about it.
5	Once upon a time, there was a creature that loved all things blue. The sky, the ocean, the school of her youth... Everything. Except for one thing: she belonged here on campus. The people she came to know here were unlike any she knew anywhere else. And it wasn't just people. It was everything around you—your classes, your clubs and organizations, how you felt about them... Everything was different here.