Neurodiversity, Intersectionality and Distress: A Quantitative Survey on the Experiences of

University Students

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Abstract

Neurodiversity, Intersectionality and Distress: A Quantitative Survey on the Experiences of

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The purpose of this study is to examine the profile and mental health status of

neurodivergent (ND) students in a large university sample ($N = 2,206$), as well as to examine

how intersectionalities of neurodivergence with other minority statuses impact mental health and

wellbeing. Participants were recruited to an online survey, and were coded based on their

reported gender, sexual orientation, racial minority status, linguistic minority status, citizenship

status, relationship preferences, religiosity, socioeducational profile and presence of

neurodivergent and mental health conditions. Psychological distress was assessed with the

Depression, Anxiety and Stress Scale (DASS-21) and the Everyday Discrimination Scale (EDS)

was used to examine experiences of discrimination in racialized groups. Neurodivergent

participants were more likely to belong to LGBTQ+ groups, to engage in non-conventional

relationship dynamics and styles, and to engage in non-conventional academic and religious and

spiritual paths. Women were more likely to self-identify as ND than men, and white participants

were more likely to self-identify as ND than participants from racial minorities, which might

reflect larger systemic and institutional factors. ND participants had on average higher scores in

all three subscales of the DASS-21, but not in the EDS. Main and interaction effects in DASS-21

scores were observed between neurodivergence and gender, racial status and income, and main

effects were observed between neurodivergence and sexual minority status. Both main and

interaction effects were found between neurodivergence and racial and linguistic minority

statuses in discrimination scores. Limitations and future directions are discussed, as well as

clinical and institutional implications.

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teaching me that there's much more to the human experience than the mind; to the science communication community for teaching me patience in times of chaos; and to the Brazilian feminist community for teaching me that our victories and challenges are always collective;

Finally, and more importantly, my sincere appreciation and gratitude to the autistic community, which inspired me to pursue this project, to realize the complexity and importance of this topic, and to hopefully start filling important gaps in the literature on neurodiversity and mental health; and to all students who generously invested their time to participate in this Study, and for sharing, despite all the emotional challenges that it entails, your honest thoughts on the difficulties of the student life. You are seen, and you belong.

Neurodiversity, Intersectionality and Distress: A Quantitative Survey on the Experiences of

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Only Nature is divine, and she is not divine…

If sometimes I speak of her as a being
It is that to talk about her I need to use the language of men
Which gives personality to things,
And imposes names to things.

But things have neither names or personalities:
They exist, and the sky is great and the earth large,
And our heart is only as big as a closed fist…

Blessed be everything about which I do not know.
I enjoy all things, just as I know there is a sun.
                —Fernando Pessoa, "Poems of Alberto Caeiro" [1]

The term *neurodiversity* was first used in print in the late 1990s by the journalist Harvey

Blume, who argued that individual traits and characteristics that differ from the "neurological

norm" —particularly those found in autistic individuals, who are highly represented in the

technology industry, where such traits are advantageous— are vital to the survival of the human

species (Blume, 1988). The term was then established in social sciences by the Australian

sociologist Judy Singer. In her work, *Why Can't You be Normal for Once in Your Life?* (Singer,

1999), she proposed that such neurological differences constitute a political category like race,

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[1] Pessoa, F. (2018). *Poems of Alberto Caeiro* (D. Scanlon, Transl.). The Foolish Poet Press. (Original work published 1914).

gender and class (Singer, 1999, as cited in Liu, 2018), a perspective that inaugurated the neurodiversity political movement.

Following Singer's work, the neurodiversity movement was consolidated by autistic self-advocates and activists, and was later on joined by individuals with other types of conditions that are "neurologically diverse"—or *neurodivergent* (ND), as opposed to "neurologically typical", or *neurotypical* (NT). Such conditions include Attention Deficit Hyperactivity Disorder and Attention Deficit Disorder (ADHD/ADD), Learning Disabilities — also referred to as *Learning Differences* (e.g., Griffin & Pollak, 2009)—, Dyslexia, Dyspraxia, Dyscalculia and Tourette's Syndrome (Aftab, 2021; Doyle, 2020; Griffin & Pollak, 2009). Some conditions are not ubiquitously included under the ND umbrella, but are debated as potential forms of neurodivergence, including Epilepsy, Schizophrenia (Aftab, 2021), Obsessive-Compulsive Disorder (OCD) (Mellifont, 2021), as well as acquired conditions (e.g., Traumatic Brain Injury) and conditions not scientifically recognized as disorders, such as Synaesthesia, Sensory Processing Sensitivity (SPS), Misophonia and the Highly Sensitive Person (HSP) category (Dykhuizen, n.d.; Resnick, 2022).

The neurodiversity movement aims to promote a paradigm shift from the pathologization of neurodevelopmental conditions towards—as described by the philosopher Robert Chapman—a "social ecological approach to understanding disablement" (Aftab, 2021). This approach proposes that these conditions are natural variations within human diversity, which do not require cure, and should be understood through the lenses of a *social model of disability* (Liu, 2018). In other words, neurodevelopmental disabilities are, from this perspective, caused by the "misfit" between an individual's neurological impairments and a social environment that

excludes and denigrates non-normative bodies and brains, rather than being determined by an intrinsic defect (Goering, 2015).

The Neurodiversity Movement and Intersectionality

There is some level of convergence between the social model of disability and the contemporary feminist scholarship on *intersectionality*. The intersectional framework, established in the late 1980s by the activist and scholar Kimberlé Crenshaw, refers to the combination of (and interaction between) different forms of subjugation and domination experienced by an individual with membership in more than one discriminated group (Cooper, 2016), and to the "need to account for multiple grounds of identity when considering how the social world is constructed" (Crenshaw, 1991, as cited in Cooper, 2016). Crenshaw differentiates *structural intersectionality* from *political intersectionality*: the former refers to the interaction between different structural systems of power (namely race, gender and class), and the latter refers to conflicts across political agendas pursued by different subordinated groups (Cooper, 2016) (e.g., a Black woman may experience racism by White women and simultaneously experience sexism by Black men) [2].

Contemporary feminist scholarship accounts for (and critically examines the need for) the inclusion of ability and disability statuses in the intersectional framework. The philosopher Patricia Hill Collins (2019) argues that the notion of social "fit" and "unfit" are essentially eugenic and determined by a Western medical discourse that attempts to dictate notions of normal and deviant. Thus, the disability (including neurological disability) discourse can be

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[2] In the next sections, I will briefly cover structural intersectionalities experienced by ND individuals. However, it is worth mentioning that, within the neurodiversity movement, there are several controversies and disagreements about ableism and ability status, which include: "high functioning" nomenclature; power and privilege; whether the concept of a linearly determined "position on the spectrum" is harmful, as opposed to a multidimensional set of qualities and vulnerabilities that are as heterogenous as in neurotypical populations; and other tensions (for an introduction to this topic, see Nicolaidis, 2012) which, in my perspective, could be understood though the lens of political intersectionality.

understood as a social construction that conceptualizes ability (and lack thereof) as intrinsic to a body, rather than a product of the "social meanings attached to all bodies" (Collins, 2019). In other words, membership in a "disabled" group, like membership in any other groups that deviate from the hegemonic norm, is understood as 1) socially constructed; and 2) producing unique experiences if combined with other minority statuses.

The present work will attempt to provide a preliminary examination of the levels of psychological distress experienced by neurodivergent individuals who belong to different minority groups, as well as the interaction produced by the intersection of neurodivergence and other minority statuses.

Neurodiversity, Mental Health and Minority Stress

Both community shared knowledge and scientific research indicate that individuals with neurodivergent conditions are more likely to experience mental health issues such as depression, anxiety and phobias (e.g., Gillott & Standen, 2007; Hollocks et al., 2019; Riglin et al., 2021; Robertson, 2009), as well as higher suicidality rates (e.g., Pelton et al., 2020). The severity of psychological distress in these populations has been liked to comorbidity with (and high incidence of misdiagnosis of) conditions such as bipolar disorders (e.g., Masi et al., 2020; Schiweck et al., 2021) and personality disorders (e.g., Lugnegård et al., 2012).

Research suggests that higher suicidality rates among ND patients is linked to the co-occurrence of racial minority status, sexual minority status, female gender identity, lower levels of education, and lower socioeconomic status (Beauchaine et al., 2020; Lund, 2021; Segers & Rawana, 2014; Strang et al., 2021). These correlations suggest that the combination of (or *intersection* between) neurodivergence and membership in other marginalized groups are particularly likely to produce higher levels of minority stress or, in other words, chronic exposure

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to socially driven stressors such as harassment, discrimination and prejudice (Lund, 2021) as well as internalized stigma and expectations of rejection (Meyer, 2003).

In the case of autism, "outness" [3] about the ND status correlates with poorer mental health. This correlation might be explained by an increased likelihood of being perceived as "different" and, as a consequence, being harassed and othered (Botha & Frost, 2020), which indicates that perceived stigma, a common source of distress, might reflect accurate observation of the experience of ND peers. Nonetheless, the (deliberate or unconscious) hiding of autistic traits, also known as *masking* or *camouflaging*, correlates with poorer mental health outcomes (Hull et al., 2020; Cage et al., 2018). Conversely, being connected to autistic communities (or other "safe spaces" where "unmasking" is accepted) is known to reduce the feeling of *autistic burnout* (Raymaker et al., 2020, as cited in Lund, 2021).

In particular, autistic women present higher levels of camouflaging of autistic traits (Hull et al., 2020), which might explain, at least partially, why epidemiological data systematically indicates that men are more likely than women to present autistic conditions. Women with Autism Spectrum Disorder (ASD) are more likely to be diagnosed (and misdiagnosed) with mental health conditions such as Borderline Personality Disorder (BPD) and Anorexia Nervosa (AN), which are also risk factors for suicidality (Oldershaw et al., 2011; Rydén et al., 2008). Interestingly, some authors propose that AN in particular might be a female-specific presentation of autism (Oldershaw et al., 2011). According to these authors, if that is true, the large difference in male to female ratios between both psychiatric categories (10:1 for ASD and 1:9 for anorexia) might have been perpetuated by the stereotype of autism as a consequence of an "extreme male

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[3] The concept of *outness* is frequently used to refer to an individual's level of public disclosure of their minority status, typically in the context of *invisible minorities*, such as LGB individuals who might be "passable" as heterosexual and neurodivergent individuals who might be "high functioning" or "passable" as neurotypicals.

brain" (proposed by Baron-Cohen, 2002), combined with the fact that women experience higher body image disturbances due to cultural pressures, and higher desire for affiliation with groups (Zucker et al., 2007), which could be fulfilled by online membership in anorexia-related groups.

Racial stereotypes and biases also impact the perception and the diagnostic status of ND conditions. Black children in the US are less likely to receive an accurate diagnosis of autism or ADHD on a first visit to a health provider than their white counterparts, and more likely to be diagnosed with an adjustment disorder (Mandell et al., 2007). Black and Hispanic children are also more likely to be diagnosed with Oppositional Defiant Disorder (ODD) and Conduct Disorders (CD), which are more stigmatized and less likely to be institutionally supported than ADHD and other forms of neurodivergence (Fadus et al., 2020). Moreover, parents of Black autistic children are less likely to report concerns about repetitive behaviors and social interactions to health professionals (Donohue et al., 2019), suggesting that racial status also impacts families' perceptions of children's symptomatologies. Adult Black autistic individuals also report being othered, silenced and discriminated in autistic communities (e.g., Wright, 2021), which might produce even higher levels of distress due to increased isolation and experienced discrimination both in NT and ND environments.

Community Wisdom: Unconventional Profiles

There is consistent anecdotal evidence in the autistic and neurodivergent communities about the representation of ND individuals in several "unconventional" (non-normative) groups. Although not all of those groups are, to date, covered by the scientific literature on neurodivergence, such anecdotal knowledge and collective wisdom shared in activist and educational ND communities, combined with the current literature on ND, might inspire new and potentially interesting research hypotheses.

In the sexual, gender, and relational spheres, ND individuals seem to be more likely to report LGBTQ+ (lesbian, gay, bisexual, transgender, queer, questioning, and others) identities: both autistic people and people with ADHD (especially AFAB[4] individuals) are over-represented in transgender and gender diverse communities (Strang et al., 2021; Warrier et al., 2020). Autistic people are also over-represented in sexual minority groups (lesbian, gays, bisexuals, and other non-heterosexual orientations), and are more likely to report satisfaction in singlehood (Dewinter et al., 2017) and polyamorous relationships (e.g., Yau, n.d.). Self-advocates and members of the community also suggest that autistic people are more likely to identify (and often less likely to be acknowledged) as asexual (e.g., Weinstein, 2021) or demisexual (e.g., Sam, 2019) and are also more likely to engage in unconventional relationship styles and preferences.

In the professional sphere, ND individuals, particularly women, are more likely to report struggling to find a conventional or stable career path (e.g., Nagib & Wilton, 2019). In religious and spiritual domains, autistic individuals are reportedly more likely to identify as atheists or agnostic and, when religious, to follow their own, unique belief system or adhere to religious traditions from other cultures (Caldwell-Harris et al., 2011). Anecdotal evidence suggests that people with ASD are more likely to be victimized by religious cults (e.g., Turner, 2019) and/or by religious fanatics in their communities attempting to "cure" their autism via magical means (for an example, see The Local Denmark, 2016).

The current study examined a large university sample, and aims to preliminarily assess 1) the incidence of ND participants across various minority groups, as well as across groups with unconventional profiles and 2) the mental health status of ND students and, specifically, how

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[4] Assigned female at birth

intersectionalities of neurodivergence with minority statuses impact mental health and discrimination.

Methods

Participants

The dataset used in this study is a subset of the data collected between February and March of 2022 for the Student Mental Health project, conducted at Concordia University (Montreal) by members of the Culture, Health and Personality Laboratory. The study consisted of an online survey comprising four modules, one for all participants and three pertaining specific groups, and was approved by Concordia University's Human Research Ethics Committee. Students were recruited by email in two waves of data collection. Only participants who finished the survey were included.

Eligible students ($N = 2,206$) were enrolled in undergraduate (80.8%), graduate (18.5%) and diploma (0.7%) programs, and aged between 18 and 75 years old ($M_{age} = 24.1$, $SD = 5.7$). Among all participants, 67.0% were Canadian citizens, 27.3% were international students, 5.4% were permanent residents of Canada, 0.1% had First Nations or Indigenous status, and 0.1% had refugee status.

Survey Structure

The survey was implemented on Checkbox (Checkbox Survey Team., 2022), and comprised four thematic modules. "Module 0" consisted of questions to which all participants responded, and included demographics and general questions on wellbeing, social support, financial deprivation and everyday discrimination. Students who identified with at least one underrepresented group were requested to complete at least one additional thematic module corresponding to their respective group or groups, and were offered the option to complete any

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other modules relevant to their particular intersectionality. Module 1 was designed for ethnocultural minorities and international students (students who identified as a member of an ethnocultural minority but are not international students only responded to the first part of the module, and vice-versa). Module 2 was designed for all students who identified as *Woman (Cisgender)*. Module 3 was developed for all students who identified as a sexual minority, a gender minority, or both (likewise, students who only identified as sexual minorities or only as gender minorities were shown only the corresponding section of the module, and students who identified as both were shown the complete module).

Both in Modules 2 and 3, participants were shown content warnings, given the delicate nature of some of the questions, and were offered the chance to interrupt the survey, in which case they were referred to a list of mental health resources. Students who chose to exit the study in this way were considered to have completed the survey, but in cases where there were not enough answers to particular modules, only responses to previous modules were included.

The datasets from the two waves of data collection were merged into a single dataset. In the present project, a subset of the measures was analyzed, as described below.

Measures

Demographics

Participants were invited to report their age, gender, degree type, status in Canada, whether they have immigrated to Canada in the past, relationship status, sexual orientation, number of children (if any), yearly household income, religion, first language, ethnocultural identity, whether they identified as first generation students and/or as students with a non-conventional academic path, and disability status. In this sample, 16.8% of participants self-

identified as members of ethnocultural minorities. It is estimated [5] that 4.7% of participants are

Black, 44.1% are IPOC (Indigenous and People of Color) and 51.2% are White; 25.7% of

participants immigrated to Canada at some point during their lives, and 37.5% of participants

belong to linguistic minorities (defined here as 'allophones', non-native speakers of either

English or French). Finally, 3.8% of participants are parents, 29.7% identified as first-generation

students, 22.1% reported non-conventional academic paths (e.g., mature entry, breaks or leaves,

second degree, change of program), 35.8% reported a yearly household income lower than

25,000 CAD, and 28.6% reported a yearly income higher than 50,000 CAD. Gender and other

demographic data will be reported in the following sections.

The questions on gender, relationship status, religion, ethnocultural identity, non-

conventional path and disability status included follow-up open-ended questions (e.g., *Other.*

Please specify:), so that participants could specify their particular case in detail and/or express

their identities and statuses in their own words if none of the options available applied to them.

Sexual, Gender and Racial Identities

For the purposes of this study, all participants who reported any gender identity other

than *Woman (Cisgender)* or *Man (Cisgender)* were considered gender minorities. Among

participants, 54.3% identified as cis women, 36.7% identified as cis men, and 8.9% identified as

gender minorities (trans men, trans women, Two-Spirit, non-binary, agender, genderfluid, gender

nonconforming, genderqueer and others). Likewise, participants who reported any sexual

orientation other than *Straight (heterosexual)* were coded as sexual minorities. In our sample,

31.3% of participants identified as non-heterosexual.

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[5] Due to implementation issues during the first wave of data collection, the number of Black, IPOC and white participants was estimated based on a combination of answers to questions related to ethnocultural (but not racial) identity and reported visible minority status.

For racial minorities, due to the nature of this project and the small representation of Black, Indigenous and other specific visible minority categories, racial minorities were merged into a BIPOC (Black, Indigenous and People of Color) group, as opposed to White. Participants who did not explicitly identify as White or as belonging to any of the BIPOC categories, and who provided responses that are intrinsically ambiguous (e.g., *European*, *Canadian*) or rejected any racial and ethnocultural identification, were not assigned to a racial group. In some groups (namely *Portuguese* and *Italian)*, some respondents explicitly reported questioning whether their identity could be considered white. Given 1) the intrinsic ambiguity imposed by the way the question was asked in the context of this study, especially in the first round of data, where racial status was not explicitly asked; 2) sociohistorical factors that, albeit fluid, impose ambiguity in the determination of racial minority status in the Canadian context, which was informed by the data; and 3) the need to fit participants into discreet categories for the present purposes, all participants who listed these two groups and, by extension, *Semitic*, *Armenian*, *Greek* or *Mediterranean* participants, and who did not explicitly identify as White, were also not assigned to either the White or the BIPOC group. Participants who listed any of those groups and none of the BIPOC groups, and self-identified as White, as well as participants whose only reported identities were Irish, German or Eastern European, were considered, for the purposes of this study, White.

Due to differences between the two rounds of data, some BIPOC participants who were excluded from the preliminary coding due to ambiguous categorization between Black or IPOC were not assigned to any categories after data merging. The final sample sizes are $n_{BIPOC} = 1,008$; $n_{White} = 1,077$. In total, 121 participants were not assigned to either racial group.

Depression, Anxiety and Stress Scale (DASS-21)

The survey included a short version (21 items) of the *Depression, Anxiety and Stress Scale* (Lovibond & Lovibond, 1995). Participants were offered four response options to rate the frequency at which they experience certain events, from *Did not apply to me at all* (0 point) to *Applied to me very much or most of the time* (3 points). The scale items are distributed across three dimensions: depression (e.g., *I couldn't seem to experience any positive feeling at all)*, anxiety (e.g., *I was worried about situations in which I might panic and make a fool of myself*) and stress (e.g., *I found myself getting agitated*.). The final scores for DASS and each of the subscales were calculated, as per standard procedure, by doubling the sum of the individual items' scores. The Cronbach's alpha for DASS-21 in this study was .937, 95% CI [.933,.941].

Everyday Discrimination Scale (EDS)

The *Everyday Discrimination Scale* (Williams et al., 1997) was included in the survey, and the original heading was adapted to include the cultural component of discrimination (*In your day-to-day life, how often do any of the following things happen to you because of your race, ethnicity, or culture?*). Participants could rate the frequency of discrimination experiences ranging from *Never* (0 point) to *Almost everyday* (5 points). The questionnaire consists of nine items (e.g., *You are treated with less courtesy than other people are*; *People act as if they're better than you are*). Scores were averaged for each participant. In this study, the Cronbach's alpha for EDS was .912, 95% CI [.907, .918].

Coding of Variables: Self-Reports

In the present project, five other variables were coded manually, based on participants' answers to three questions: 1) Disability: *Do you identify as having one or more disabilities?*. Participants who answered *Yes* were asked *If you are comfortable disclosing your specific disability or disabilities, please do so below*; 2) Religion: *Do you follow a religious / spiritual*

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practice?, participants were offered the options "*Yes (please specify which):" and "No"*; *and* 3)

Relationship: *Which relationship status best describes you now?*, to which several options were

offered, including *other (please specify)* [6].

Neurodivergence

A binary variable was created to represent the presence of at least one form of

neurodivergence. Participants who answered the disability question by listing conditions

considered neurodivergent, diagnosed or undiagnosed, were included under the ND category.

The remaining participants were included under the neurotypical (NT) category. The following

conditions were included under the ND category: *autism* and variations (*autistic*, *ASD*, *Autism*

Spectrum Disorder, *Asperger's*, *Asperger's Syndrome*), *ADHD*, *ADD*, *dyslexia*, *dysgraphia*,

dyscalculia, *dysphasia*, *dysorthographia*, *learning* disabilities, *HSP* (Highly Sensitive Person),

FND (Functional Neurological Disorder), *Tourette's syndrome*, *brain injury*[7] and *OCD* [8]. In six

cases, participants' answers required a degree of subjective interpretation of symptoms and

complaints that are knowingly typical of ND experiences, but will be omitted here due to the fact

that our Consent Form did not explicitly anticipate the possibility of having delicate qualitative

data provided by the participants publicly published. In the present dataset, there were no

occurrences of other conditions that are disputed as ND, such as epilepsy, sensory processing

disorder, misophonia and synaesthesia. The total number of participants coded as neurodivergent

is $N_{ND} = 208$, which constitutes 9.4% of the total sample.

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[6] Across the two waves of data collection, some changes in the displayed options have been implemented, and answers were standardized during the coding phase (for instance, in the first wave of data collection "in an open or poly relationship" were merged into the same option, while in the second wave, there were two different options for each of these relationship types.

[7] The total number of participants who listed at least one among Tourette's, traumatic brain injury, FND and HSP combined is four, one of which explicitly identifying as neurodivergent.

[8] OCD is one of the conditions that are often but not universally recognized as a form of neurodivergence in ND communities, and autism is often misdiagnosed as OCD. There were in total six occurrences of OCD in the dataset that were not explicitly listed in combination with other ND conditions.

Mental Health Conditions

The presence of mental health conditions was coded based on qualitative answers to the same question on disabilities described above. Both diagnosed and undiagnosed conditions were included. Conditions attributed to the mental health category include depression and variations (e.g., diagnosed Major Depressive Disorder), anxiety and variations (e.g., *chronic anxiety*, Generalized Anxiety Disorder), borderline personality disorder, bipolar disorders, Post-Traumatic Stress Disorder (PTSD) and complex PTSD (C-PTSD), panic disorder, panic attacks, Substance Abuse Disorder, and all reported forms of phobias. The total number of participants coded under this category is $N_{MH} = 170$, which constitutes 7.7% of the total sample. This is of course a limited measure of the incidence of mental health conditions in this sample, since there were no questions explicitly asking about mental health status, but rather participants spontaneously reporting mental health conditions as a disability. In total, 92 participants reported both at least one form of mental health condition and at least one form of neurodivergence.

Non-Conventional Relationship Styles

Another binary variable was created to differentially highlight participants in non-conventional forms of relationships. Participants who reported being in open or polyamorous relationships were coded under this category, as well as participants who qualitatively reported non-conventional relationship dynamics (e.g., queerplatonic relationships, romantic friends, long-distance relationships, being in a relationship with a poly partner) or non-conformism with normative models of relationship (e.g., *not interested in relationships*, *relationship anarchist*). Participants who reported being single (strictly), in a monogamous relationship, strictly dating (and variations, e.g., *I see someone very sporadically, situationship*), in a domestic partnership, engaged, or married were excluded from this category. Widowed, separated and divorced

participants were also excluded, for lack of possibility of inference on their respective relationship preferences. The total number of participants coded as engaged in non-conventional relationship styles is $n_{NCR} = 70$, representing 3.2% of the sample.

Non-Religiosity and Non-Conventional Religious/Spiritual Path

Two binary variables were created to differentiate participants who did not identify with normative and/or traditional religious groups, and coded based on answers to the religion question. Participants who did not report any religion (in the first phase of data collection), or who explicitly identified as either atheist or agnostic (in the second phase of data collection), or qualitatively reported secularism (e.g., secular Jewish) were coded as non-religious ($n_{NR} = 1,367$, representing 62.0% of the sample). The second category (non-conventional religious or spiritual path) was attributed to all participants who answered *Questioning* (and variations), *Personal sense of spirituality*, or *Pagan/Neopagan/Wiccan*, as well as participants who qualitatively reported neopagan religiosity (e.g., *Ásatrúar*, *Hellenism*), personal interpretations of religious traditions (e.g., *Basic tenants of Judaism and Christianity; I pray and believe in God, but I don't follow a religion; I believe in past lives/spirituality*, *I respect all of them*, *Sufi* [White Canadian]; *Buddhism* [White Canadian]), meditation practices, and other non-conventional groups (e.g., Pantheism, Gnosticism, Unitarian Universalism, Satanism, Christian Left). The final sample was $n_{NCRS} = 133$, representing 6.0% of the sample.

Other variables

Students who reported non-academic traditional paths were automatically coded as such because the original question (*Are you an older student returning to school, or a student with a non-traditional pathway?*) explicitly addressed that.

Household yearly income bands were merged into three categories for the ANOVA analysis (C = less than $24,999; B = $25,000 through $49,999; A = $50,000 or more) and into two categories for the contingency table (Poorer = below $25,000; Richer = $25,000 or higher), based on the Canadian poverty line.

Participants were coded as migrants to Canada if they reported having migrated at any point during their life (as opposed to being born in Canada), regardless of citizenship status (except for international students, who have their own specific category and were excluded from the migrant status categorization). Finally, participants were automatically coded as international students (as opposed to Canadian citizens and Permanent Residents) based on their reported status as such. Subgroups represented by fewer than five participants, including refugees and Indigenous participants, were omitted from the latter category.

Data Analysis

Raw data were exported from Checkbox, and then cleaned, merged and coded (as described above) using Microsoft Excel. Variables of interest were selected, and all data were analyzed using JASP (JASP Team, 2022). The demographic profiles reported in the sections above were calculated using the Descriptive Statistics option.

The correlation between reported neurodivergence and reported mental health conditions was calculated, as well as the correlations between reported neurodivergence and each of the DASS-21 subscores and the total EDS score, and between reported mental health conditions with each of the DASS-21 subscores and the total EDS score.

Four thematic groups of contingency tables were generated to visualize the frequency distribution of all the different binary variables between the neurotypical and the neurodivergent groups: 1) Socioeducational (includes program type, first generation students, non-conventional

academic path and yearly income); 2) Gender, Sex and Relationships (includes gender ratio, gender minority identity, sexual minority identity and non-conventional relationships); 3) Ethnocultural (includes racial minority status, migration status, citizenship status and linguistic minority status); and 4) Religion (includes non-religiosity and non-conventional religious/spiritual path). For each table, the χ^2 and respective p values were calculated.

Finally, 3 x 2 and 2 x 2 analyses of variance (ANOVA) were conducted to examine the differences in DASS-21 scores across ND and non-ND groups for sexual, gender, racial and linguistic minorities, as well as program type, migration, citizenship status and yearly income. Analyses of variance were also run to examine differences in EDS for racial minorities, linguistic minorities, migrants and international students.

Results

Zero-Order Correlations

The correlation (Spearman's ρ) between reported neurodivergence and reported mental health conditions is $\rho(2204) = .442$, $p < .001$. The correlations (Pearson's r) between reported neurodivergence and DASS-21 scores, and between reported mental health conditions and DASS-21 scores are shown in Tables 1 and 2, respectively. There was no statistically significant correlation between EDS scores and reported presence of neurodivergence ($r(2202) \sim 0$, $p = .99$) or EDS and reported presence of mental health conditions ($r(2202) = .04$, $p = .080$).

Table 1

Pearson's r for Reported Neurodivergence and Scores of the Depression, Anxiety and Stress Scale (DASS-21)

DASS-21 subscales	r (2204)
Depression	.096 ***
Anxiety	.147 ***
Stress	.129 ***
DASS-21 Total	.139 ***

*** $p < .001$

Table 2

Pearson's r for Reported Mental Health Conditions and Scores of the Depression, Anxiety and Stress Scale (DASS-21)

DASS-21 subscales	r (2167)
Depression	.195 ***
Anxiety	.190 ***
Stress	.217 ***
DASS-21 Total	.226 ***

*** $p < .001$

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Profile of Neurodivergent Participants

The contingency tables are displayed below. ND participants were proportionally more represented among undergraduate students and students who followed unconventional academic paths, and were more likely to report yearly income lower than $25,000 (Table 3). Regarding gender, sexual and relationship profiles (Table 4), ND participants were over-represented among gender minorities and sexual minorities, and reported proportionally higher adherence to non-conventional models of relationship. Ethnoculturally-wise (Table 6), BIPOC participants, migrants, international students and linguistic minorities were less likely to report neurodivergence. Finally, ND participants were over-represented among non-religious participants and among participants with unconventional religious or spiritual paths (Table 7).

Table 3

Contingency Table – Socioeducational Profiles, Neurotypical vs. Neurodivergent Participants

Program $\chi^2 = 13.78$ *** (N = 2190)		No Reported Neurodivergence (n = 1982)	Neurodivergent (n = 208)
Undergraduate (n = 1781)	Count	1592	189
	(Expected count)	(1612)	(169)
Graduate (n = 409)	Count	390	19
	(Expected count)	(370)	(39)
First Generation $\chi^2 = 0.08$ (N = 2206)		No Reported Neurodivergence (n = 1998)	Neurodivergent (n = 208)
No (n = 1562)	Count	1413	149
	(Expected count)	(1415)	(147)
Yes (n = 644)	Count	585	59
	(Expected count)	(583)	(61)
Non-Conventional Academic Path $\chi^2 = 35.84$ *** (N = 2206)		No Reported Neurodivergence (n = 1998)	Neurodivergent (n = 208)
No (n = 1719)	Count	1591	128
	(Expected count)	(1557)	(162)
Yes (n = 487)	Count	407	80
	(Expected count)	(441)	(46)
Yearly Household Income (Canadian Dollars) $\chi^2 = 4.25$ * (N = 1631)		No Reported Neurodivergence (n = 1462)	Neurodivergent (n = 169)
Below $25,000 (n = 911)	Count	804	107
	(Expected count)	(817)	(94)
$25,000 and higher (n = 720)	Count	658	62
	(Expected count)	(645)	(75)

* $p < .05$; ** $p < .01$; *** $p < .001$

Table 4

Contingency Table – Gender, Sexual Orientation and Relationship Profiles, Neurotypical vs. Neurodivergent Participants

Gender Ratio (cis) $\chi^2 = 8.95$ ** *(N = 2012)*		**No Reported Neurodivergence** *(n = 1857)*	**Neurodivergent** *(n = 155)*
Men (*n* = 812)	Count	767	45
	(Expected count)	(749)	(63)
Women (*n* = 1200)	Count	1090	110
	(Expected count)	(1108)	(92)
Gender Minorities $\chi^2 = 79.72$ *** *(N = 2206)*		**No Reported Neurodivergence** *(n =1998)*	**Neurodivergent** *(n = 208)*
No (cis) (*n* = 2012)	Count	1857	155
	(Expected count)	(1822)	(190)
Yes (non-cis) (*n* = 194)	Count	141	53
	(Expected count)	(176)	(18)
Sexual Orientation $\chi^2 = 127.81$ *** *(N = 2206)*		**No Reported Neurodivergence** *(n = 1998)*	**Neurodivergent** *(n = 208)*
Heterosexual (*n* = 1516)	Count	1445	71
	(Expected count)	(1373)	(143)
Non-Heterosexual (*n* = 690)	Count	553	137
	(Expected count)	(625)	(65)
Reported Non-Conventional Relationship $\chi^2 = 40.97$ *** *(N = 2206)*		**No Reported Neurodivergence** *(n = 1998)*	**Neurodivergent** *(n = 208)*
No (*n* = 2136)	Count	1950	186
	(Expected count)	(1935)	(201)
Yes (*n* = 70)	Count	48	22
	(Expected count)	(63)	(7)

* p < .05; ** p < .01; *** p < .001

Table 5

Contingency Table – Racial, Ethnocultural and Immigration Profiles, Neurotypical vs. Neurodivergent Participants

Racial Group $\chi^2 = 49.85$ *** $(N = 2085)$		No Reported Neurodivergence $(n = 1892)$	Neurodivergent $(n = 193)$
White ($n = 1008$)	Count	868	140
	(Expected count)	(915)	(93)
BIPOC ($n = 1077$)	Count	1024	53
	(Expected count)	(977)	(100)
Migration to Canada $\chi^2 = 6.79$ ** $(N = 2206)$		No Reported Neurodivergence $(n = 1998)$	Neurodivergent $(n = 208)$
Born in Canada ($n = 1830$)	Count	1644	186
	(Expected count)	(1657)	(173)
Migrated to Canada ($n = 376$)	Count	354	22
	(Expected count)	(341)	(35)
Immigration Status $\chi^2 = 20.54$ *** $(N = 2199)$		No Reported Neurodivergence $(n = 1992)$	Neurodivergent $(n = 207)$
Canadian Citizen/PR ($n = 1597$)	Count	1419	178
	(Expected count)	(1447)	(150)
International Student ($n = 602$)	Count	573	29
	(Expected count)	(545)	(57)
Linguistic Minorities $\chi^2 = 34.71$ *** $(N = 2206)$		No Reported Neurodivergence $(n = 1998)$	Neurodivergent $(n = 208)$
Anglo/Francophone ($n = 1377$)	Count	1208	169
	(Expected count)	(1247)	(130)
Allophone ($n = 829$)	Count	790	39
	(Expected count)	(751)	(78)

* $p < .05$; ** $p < .01$; *** $p < .001$

Table 6

Contingency Table – Religiosity, Neurotypical vs. Neurodivergent Participants

Religious $\chi^2 = 15.35$ *** *(N = 2206)*		**No Reported Neurodivergence** (*n* = 1998)	**Neurodivergent** (*n* = 208)
Yes (*n* = 839)	Count	786	53
	(Expected count)	(760)	(79)
No (no religion, atheist or agnostic) (*n* = 1367)	Count	1212	155
	(Expected count)	(1238)	(129)

Non-Conventional Religious or Spiritual Path $\chi^2 = 6.71$ * *(N = 2206)*		**No Reported Neurodivergence** (*n* = 1998)	**Neurodivergent** (*n* = 208)
No (*n* = 2073)	Count	1886	187
	(Expected count)	(1878)	(195)
Yes (*n* = 133)	Count	112	21
	(Expected count)	(120)	(13)

* $p < .05$; ** $p < .01$; *** $p < .001$

Group Differences in Emotional State and Discrimination

There were significant main and/or interaction effects observed between ND and NT groups in the DASS-21 scores for gender, sexual minority identity, yearly income and racial minority status, as shown in Tables 7, 8, 9 and 10 respectively. There were no interaction effects, or main effects other than ND, in DASS-21 scores for program type, non-conventional relationship status, non-conventional academic path, first generation status, migration status, citizenship status, linguistic minority status and religiosity.

In the analysis of variance for gender (Table 7), There was a statistically significant main effect for neurodivergence, $F(1, 2163) = 20.92$, $p < .001$, and gender, $F(2, 2163) = 8.84$, $p < .001$, as well as a significant interaction, $F(2, 2163) = 3.01$, $p = .047$. As per the Tukey *post hoc* test, the gender effect is primarily attributable to the mean score difference between cisgender men and gender minorities ($M_{diff} = 12.29$, $t = 4.21$, $p < .001$, $d = 0.48$). There were also significant differences between cis men and cis women ($M_{diff} = 5.68$, $t = 2.36$, $p = .048$, $d = 0.21$) and between cis women and gender minorities ($M_{diff} = 6.61$, $t = 2.65$, $p = .022$, $d = 0.25$). The neurodivergence effect corresponds to a mean difference of $M_{diff} = 9.77$ ($t = 4.57$, $p < .001$, $d = 0.37$).

For sexual minorities (Table 8), there was a statistically significant main effect for neurodivergence, $F(1, 2165) = 21.07$, $p < .001$, $d = 0.35$, and sexual orientation, $F(1, 2165) = 17.33$, $p < .001$, $d = 0.32$, but no significant interaction.

In the income analysis (Table 9), there was a statistically significant main effect for neurodivergence, $F(1, 1598) = 21.49$, $p < .001$, and income, $F(2, 1598) = 3.31$, $p = .037$, but no significant interaction, $F(2, 1598) = 0.19$, $p = .829$. As per the Tukey *post hoc* test, the significance of the income effect is only attributable to the mean score difference between the

richest and the poorest band (M_{diff} = 7.51, t = 2.44, p = .039, d = 0.27). The neurodivergence

effect corresponds to a mean difference of $Mdiff$ = 12.04 (t = 4.64, p < .001, d = 0.45).

For racial minorities (Table 10), there was a statistically significant main effect for

neurodivergence, $F(1, 2049)$ = 50.35, p < .001, d = 0.60, and racial minority status, $F(1, 2049)$ =

4.51, p = .034, d = 0.18, as well as a significant interaction, $F(1, 2049)$ = 4.54, p = .033.

Table 7

DASS-21 Score Means for Reported Neurodivergence and Gender

Reported ND	Gender	*M* (*SD*)	*n*
No	Man (cisgender)	38.85 (25.67)	743
	Woman (cisgender)	48.41 (27.10)	1078
	Gender Minority	58.33 (26.14)	140
Yes	Man (cisgender)	56.00 (21.47)	45
	Woman (cisgender)	57.80 (25.03)	110
	Gender Minority	61.09 (22.80)	53

Table 8

DASS-21 Score Means for Reported Neurodivergence and sexual orientation

Reported ND	Sexual Orientation	*M* (*SD*)	*n*
No	Heterosexual	42.20 (26.48)	1412
	Non-Heterosexual	53.97 (26.87)	549
Yes	Heterosexual	54.85 (25.71)	71
	Non-Heterosexual	60.02 (22.48)	137

Table 9

DASS-21 Score Means for Reported Neurodivergence and Yearly Income Bands

Reported ND	Income Band	*M* (*SD*)	*n*
No	Above $50,000	42.28 (27.44)	433
	$25,000 through $49,999	43.91 (24.23)	213
	Less than $25,000	48.26 (27.63)	789
Yes	Above $50,000	51.84 (21.51)	25
	$25,000 through $49,999	57.84 (19.43)	37
	Less than $25,000	60.88 (25.54)	107

Table 10

DASS-21 Score Means for Reported Neurodivergence and Racial Minority Status

Reported ND	Racial Group	*M* (*SD*)	*n*
No	White	45.51 (26.60)	862
	BIPOC	45.50 (27.49)	998
Yes	White	56.69 (23.67)	140
	BIPOC	66.26 (23.77)	53

Significant effects were also observed comparing ND and NT groups for the EDS scores for racial minority status and linguistic minority status, as shown in Tables 11 and 12.

In the racial minority analysis (Table 11), there was a statistically significant main effect for neurodivergence, $F(1, 2079) = 12.38$, $p < .001$, $d = 0.28$, and racial minority status, $F(1, 2079) = 120.56$, $p < .001$, $d = 0.92$, as well as a statistically significant interaction, $F(1, 2079) = 9.46$, $p = .002$. For linguistic minorities (Table 12), there was a statistically significant main effect for neurodivergence, $F(1, 2200) = 5.48$, $p = .019$, $d = 0.21$, and linguistic minority status, $F(1, 2200) = 40.36$, $p < .001$, $d = 0.58$, as well as a significant interaction, $F(1, 2200) = 6.17$, $p = .013$.

No significant interaction effects were found for immigration status or history of migration to Canada across neurodivergent and neurotypical groups. There were, however, significant main effects of citizenship status in discrimination for international students ($F = 4.17$; $p = .041$, $d = 0.21$), and migration status ($F = 11.60$; $p < .001$, $d = 0.40$), but no ND main effect.

Table 11

Everyday Discrimination Scale Score Means for Reported Neurodivergence and Racial Minority Status

Reported ND	Racial Group	M (SD)	n
No	White	0.534 (0.76)	868
	BIPOC	1.094 (0.91)	1022
Yes	White	0.565 (0.80)	140
	BIPOC	1.562 (1.03)	53

Table 12

Everyday Discrimination Scale Score Means for Reported Neurodivergence and Linguistic Minority Status

Reported ND	Linguistic Group	M (SD)	n
No	Anglo/Francophone	0.716 (0.86)	1207
	Allophone	1.029 (0.91)	789
Yes	Anglo/Francophone	0.704 (0.88)	169
	Allophone	1.419 (1.09)	39

Discussion

The purpose of this study was to assess the profile and mental health status of neurodivergent students in a large university sample, as well as to examine intersectionalities involving neurodivergence in several minority groups. The results, strengths, limitations and future directions will be discussed below.

Neurodivergence, Mental Health Conditions, and Other Manually Coded Variables

The first and obvious limitation of the two variables that were coded after self-reports of neurodivergence and mental health conditions is that the survey did not explicitly include questions addressing these two topics specifically. It is reasonable to assume that students who spontaneously reported neurodivergent and mental health conditions as disabilities judged that those conditions were hindering their wellbeing and academic performance enough that they were worth reporting as a disability. However, it is possible that several other students would have reported similar conditions had they been asked explicitly about them. All things considered, it is still remarkable that 9.4% of students reported at least one form of neurodivergence. This could be biased by the higher incidence of mental health conditions in neurodivergent individuals (e.g., Hollocks et al., 2019; Riglin et al., 2021), which might motivate participation in this kind of study.

Another point to consider is that, in the present study, no distinction was made between diagnosed and undiagnosed conditions. The strength of this approach is that in includes participants who suspect they would meet criteria for specific conditions but have not had access to formal diagnoses or psychotherapeutic support due to financial deprivation or lack of institutional support, as well as participants who struggle with different forms of neurodivergence and mental health issues and complaints regardless of the technical accuracy of

specific diagnostic labels. The limitation of this approach is that it is not, in principle, assessing the different levels of severity of particular mental health conditions, to comparatively examine the impact of and correlation with different intersectionalities. Furthermore, the present study did not distinguish different forms of neurodivergences in the analyses of demographic distribution of ND and the levels of distress and discrimination experienced by each group, which could be explored in more detail in future studies.

It is also possible to argue that students might be self-diagnosing their conditions with inaccurate labels. However, it is also known that many neurodivergent adults are only formally diagnosed after they identify their condition by themselves (Griffin & Pollak, 2009), and that neurodivergent patients are often underdiagnosed or misdiagnosed by mental health professionals due to racial (Udonsi, 2022) and gender (Pachowicz, 2020) stereotypes that bias the implementation and interpretation of diagnostic criteria, limiting the possibility of an accurate diagnosis for minority groups.

All things considered, once the reported presence of neurodivergence has been established as a variable, the correlation with the characteristics that were predicted based on shared anecdotal knowledge in activist and educational neurodivergent communities was remarkably consistent, as will be discussed below. Future studies on neurodivergence and intersectionality could benefit from specific questions on diagnosed and undiagnosed conditions, and from examining correlations with specific positionalities [9] among diagnosed and undiagnosed ND participants. The correlation between presence of neurodivergence and presence of mental health conditions found in this study, as well as the correlations between reported neurodivergence and subscores of the DASS-21 (Tables 1 and 2) are statistically

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[9] People's race, class, gender and other social positions, as well as the inherit power and access to society attached to these positions, which are somewhat fluid but, nonetheless, socially shaped (Misawa, 2010)

significant, but not strong enough to indicate redundancy. This suggests that, as expected, neurodivergent participants experience indeed higher levels of distress and mental health conditions, but other factors beyond the presence of neurodivergence are playing are role in such experiences. Future studies addressing specific questions on neurodivergence and mental health conditions with an intersectional approach might provide a clearer picture on specific sources of distress, and would avoid the ambiguities that might have been caused by the question on disabilities.

Other variables in this study are open to improvements. Future studies on neurodivergent populations could benefit from explicitly phrased questions on religiosity (e.g., *Do you consider yourself as someone who has followed a non-conventional religious and/or spiritual path in your particular cultural context?*) and relationship styles (e.g., *Are you, or have you ever been, engaged in relationship dynamics or philosophies that would be considered non-conforming with the norm in your particular cultural context?*). The cultural component of these questions would be essential in studies in diverse populations and cross-cultural studies, since "deviation from the norm" is always a local and socioculturally determined phenomenon. Furthermore, research on non-normative romantic and sexual profiles (e.g., ace/aromantic, LGBTQ+, polyamory) could also benefit from questions addressing neurodivergent conditions and presentations.

Finally, the yearly income variable, albeit conveying significant mean differences in levels of psychological distress, might present a interpretative limitations, since some participants might have interpreted the question as addressing their personal income, rather than their household income. Future studies on neurodivergence, particularly those concerned with socioeconomic status, could benefit from questions explicitly addressing this difference.

The Profiles of Neurodivergent Participants

As shown in Tables 3, 4, 5 and 6, there were statistically significant differences in the ratio of reportedly neurodivergent participants across several demographic groups. At the socioeducational level, graduate students and students with yearly household income higher than $25,000 were less likely to report neurodivergence, and participants with non-conventional academic paths were, as predicted, more likely. No significant difference was observed (and no specific prediction was established) among first-generation students. These differences will be discussed in the next section.

Women were more likely to report ND and, as predicted, the ratio of ND participants was higher among sexual minority identities (the incidence was higher than twice the number that would be expected if sexual minority status was homogeneously distributed across neurotypes), gender minorities (almost three times higher than the expected incidence) and engagement in non-conventional relationship styles (more than three times higher than the expected incidence).

Racialized minorities were found to be overall less likely to report neurodivergence: the incidence of ND was approximately half the expected value across participants who were Black, Indigenous or People of Color, international students, immigrants and linguistic minorities.

Neurodivergent participants were, unsurprisingly, slightly more likely be atheist, agnostic or report no religion, and more likely to have followed an unconventional religious or spiritual path.

Distress, Discrimination and Intersectionalities

The Depression, Anxiety and Stress Scale (DASS-21) was used in this study to assess emotional states of depression, anxiety and stress across different subgroups of participants. The mean scores among ND participants were higher across all analyzed subgroups, and

neurodivergence had significant main effect in all ANOVAs. Minority statuses also conveyed higher DASS-21 scores in all four categories, as will be discussed below.

Across gender sub-samples (Table 7), gender minorities had higher scores than cis participants, and cis women had higher scores than cis men. As a rough approximation, inspired by the original suggestions of interpretation ranges (Lovibond & Lovibond, 1995) applied to the mean total score of each gender category, the level of distress among neurotypical cis men can be classified as mild, and the level of distress experienced by neurodivergent gender minorities can be classified as severe. Indeed, there was a moderately strong effect for the difference between cisgender men and gender minorities in the prediction of distress. Neurotypical cisgender women and gender minorities, as well as neurodivergent men and women presented moderate levels of distress. There was a significant interaction between gender and neurodivergence, suggesting that the intersectionality of gender and neurodivergent status might be manifesting as increased DASS scores, which is worth following up in more detail in future studies.

Sexual minorities (Table 8) had on average higher DASS-21 scores than heterosexual participants, both among NT and ND sub-samples. The sexual orientation component provided a moderate Cohen's d, but no interaction effect was observed, suggesting that, although both ND status and sexual minority identity produce higher levels of distress, the interaction between both might itself not increase the likelihood of negative affect more than each of these statuses would provide independently. However, it is worth noting that neurodivergent members of sexual minorities had higher mean scores than all their three counterparts. Future studies could examine whether the level of "outness" of ND participants who identify as a sexual minority, which was not explored in this project, produces main and interaction effects.

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Although, as discussed in the previous section, the household income (Table 9) ranges might not reflect socioeconomic status accurately, it is remarkable that 1) the total score of ND participants with lowest reported income is comparable to those of ND gender minorities and ND sexual minorities, suggesting that socioeconomic also status plays an important role in the levels of distress experienced by participants; and 2) only 25 among all 169 ND participants reported household income larger than $50,000, representing 14.8% of the sub-sample. Conversely, among non-neurodivergent participants, 30.2% of participants reported household income above $50,000. One interpretative hypothesis to be developed and analyzed in future research is that richer neurodivergent participants are less likely to suspect and/or be diagnosed with neurodivergent conditions, possibly due to access to more opportunities and resources to develop personal interests and talents than poorer neurodivergent individuals, and therefore possess higher chances of minimizing sources of distress that are less likely to be avoided by individuals with lower socioeconomic privilege. The same could be argued to speculate why graduate students were less likely to report ND (as reported in the previous section), combined with the possibility that neurodivergence might become an obstacle to access to graduate level education, given that ND in this study includes learning disabilities and other conditions that could hinder performance in normative academic tasks, and given that ND young adults are less likely to graduate from postsecondary programs than their neurotypical peers (Newman et al., 2011).

Finally, among all analyzed intersectionalities, neurodivergent racial minorities (Table 10) provided the highest DASS-21 mean scores. BIPOC participants with reported neurodivergence scored on average $m_{ND\_BIPOC} = 66.26$ (23.77). Both main and interaction effects produced significant results. Moreover, while in the non-neurodivergent group BIPOC participants outnumber White participants, among reportedly neurodivergent participants,

BIPOCS represent only 27.5% of the sample. This difference might be caused by the racial biases in diagnostic statuses, as well as the fact that the stereotypical clinical cases of neurodivergence are historically based on White patients, which might lead both clinicians and BIPOC neurodivergent individuals to be less likely to consider some form of neurodivergence. It is also possible that BIPOC participants who reported neurodivergence were more likely to have experienced more severe levels of distress, which then led to a more thorough investigation of possible conditions that wouldn't be considered otherwise due to racial biases among mental health professionals.

BIPOC participants also reported higher levels of experienced discrimination (Table 11), both among NT and ND samples. Both main and interaction effects conveyed statistically significant results and, predictably, a very strong effect, which can be justified by the fact that White individuals are well known to be less likely to experience everyday discrimination.

Lastly, linguistic minorities (Table 12) were also found to experience higher levels of discrimination both among NT and ND participants. Both main and interaction effects were statistically significant, and the post hoc analysis of the linguistic status contribution provided a moderately strong effect. Similarly to racial minorities, linguistic minorities are disproportionally represented among participants who did not report any form of neurodivergence: while allophones represent 39.5% of participants who did not report any form of neurodivergence, the percentage of allophones among reportedly ND participants is only 18.8%. The same argument on diagnostic stereotypes could be made here, with the caveat that allophones are more likely to be born outside of Canada, which urges for the consideration that culture plays an important role in the perception and categorization of conditions both by patients and by mental health professionals. Moreover, these differences in the incidence of reported ND could explain, at least

partially, why there were no ND main effects in discrimination scores for migrants to Canada and international students.

Although the present study provided a good opportunity to examine neurodivergence through an intersectional lens and with a large sample, the pool was not enough to generate sufficiently large sub-samples to allow analyses of more complex intersections of minority statuses (for instance, neurodivergent BIPOC gender minorities). Future studies focusing on specific minority intersections could benefit from directly recruiting participants from specific positionalities so as to examine the effects of these intersections. However, overall, the results presented in the study provide preliminary evidence that research in mental health and neurodivergence can largely benefit from examining the experiences of different minority groups and, particularly, how intersections of minority statuses affect levels of distress and access to diagnostic tools and treatment. Furthermore, these results urge for a thorough investigation of how diagnostic categories of autism, AD(H)D and learning disabilities are currently biased by stereotypes, and inform the development of a more inclusive approach to treatment, diagnosis and institutional support to neurodivergent individuals.

Conclusions and Future Directions

This project evaluated quantitatively a large and diverse sample of reportedly neurodivergent participants, examining their ethnocultural, racial and relational profiles, as well as how certain minority statuses impact neurodivergent' individual experiences of distress and discrimination. This was a novel approach, which nonetheless used methods that could be improved in future studies. However, approaching neurodivergence from an intersectional perspective provides valuable insight on topics to be explored in future research, as well as implications for clinical science and institutional policies.

At the university level, a better understanding of the profile and needs of students urges for inclusion practices that have been historically neglected and that, once addressed, could support the academic and professional development of neurodivergent students (Griffin & Pollack, 2009), whose difficulties vary across different groups and individuals. This could be implemented through *neuroinclusion* strategies, such as providing students with the possibility to work individually (as opposed to imposing group work), fairer academic accommodations (Griffin & Pollack, 2009), and the implementation of inclusive initiatives such as the principles proposed by the Universal Design (Centre for Excellence in Universal Design, n.d.).

Research-wise, these results urge for an intersectional perspective of neurodivergence which contemplates the interaction between neurodiversity and other forms of diversity in the field of mental health, including those classically not considered in psychological research, such as non-normative expressions of religiosity and relationship styles, and those that are so underrepresented in student samples and large, decontextualized participant pools that require specific attention to ethical practices, recruiting strategies and sociohistorical awareness, such as Indigenous Peoples, First Nations and refugees. In all of these cases, intersectional effects might play an even more complex role, and should be developed upon culturally informed frameworks.

In clinical research and practice, the intersectional perspective could shed light on several neurodivergent traits whose presentations vary depending on socioeconomic privilege, demographics and cultural context. Because psychiatric categories were largely developed upon Western notions of health and pathology, which are often implicitly adopted in cross-cultural studies (Adams & Salter, 2007), clinical practice might be missing on neurodivergent traits that are 1) contextually normative (e.g., culturally accepted forms of "stimming", such as the manipulation of the *masbah* in Arab countries, or religious and spiritual practices involving the

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use of mantras, which might provide a culturally accepted outlet to echolalia); or 2) stress-producing if in conflict with the individuals' contextual cultural norms (e.g., level of importance of punctuality and other social contracts that require or lack predictability, tolerance to conflict, expression of individualistic vs. collectivistic cultural values, gender norms and, consequently, social demands for masking).

Particularly, research on immigrant populations could benefit from the development of culturally informed screening methods for neurodivergence. Acculturation measures such as the Vancouver Index of Acculturation (Ryder et al., 2000) and the Riverside Acculturation Stress Inventory (Benet-Martinez & Haritatos, 2005), not included in the present study, contain several themes that are worthy of further investigation from a neurodiversity perspective, such as perceived isolation, inter- and intracultural relations, friendship, and ability to read social norms and understand jokes. Furthermore, previous research suggests, despite the frequent absence of a neurodiversity perspective, that there is a connection between immigration and incidence of autism (e.g., Keen et al. 2010), which calls for a neuroinclusive, depathologizing investigation of neurodivergent conditions in acculturation and immigration research. Likewise, there is anecdotal knowledge in autistic communities that individuals on the spectrum are more likely to engage in intercultural and/or interracial relationships (e.g., Wasser & Chiaramonte, 2017), which could be further explored in research on intercultural relationships.

An intersectional perspective also provides insight on several research niches that could be re-interpreted through a neurodiverse lens, which include but are not limited to: neurodivergence and personality traits (e.g., investigation of the non-stereotypical "extremes" of Big Five traits that might be present in "high functioning" autism, such as the lower end of neuroticism and the upper end of openness to experience, as well as geographical distribution of

personality traits and possible correlations neurodivergence and history of immigration);

neurodivergence and relational mobility (i.e., the degree of voluntary engagement in new

relationships, see Thomson et al., 2018); personal network analysis, intersectionality and

neurodivergence (for a study on effectiveness of information transfer between autistic people,

see Crompton et al, 2020; for a study on personal network analysis, migration and

intersectionality, see Bilecen, 2021); cultural consensus analysis (Romney et al., 1986) and

cultural consonance (Dressler, 2018) in neurodivergent communities (e.g., analysis of the shared

beliefs about neurodiversity in ND communities, whether individuals who deviate from the norm

experience more distress, whether presenting "divergence within a divergent community" has

any impact on that, and how various minority statuses are interacting with those experiences).

Finally, the incorporation of a neurodiversity perspective and intersectionality in

psychological research invites for a thorough consideration of historically perpetuated epistemic

injustices in the field of psychopathology (for a detailed discussion, see Catala et al., 2021).

Bottom-up approaches and qualitative methods, as well as inclusion practices of neurodivergent

minorities in the process of science-making are essential in the process of demarginalization of

minority voices, and to the incorporation of first-hand experiences as a legitimate way of

knowledge that does not result simply of culturally- and historically-perpetuated notions of

pathologies or othering of individuals who do not meet normative behaviours, vulnerabilities and

talents—which can be, themselves, very useful in the process of science making.

References

Adams, G., & Salter, P. S. (2007). Health Psychology in African Settings: A Cultural-psychological Analysis. *Journal of Health Psychology*, *12*(3), 539–551. https://doi.org/10.1177/1359105307076240

Aftab, A. (2021). *The Neurodiversity Paradigm in Psychiatry: Robert Chapman, PhD*. Psychiatric Times. Retrieved August 9, 2022, from https://www.psychiatrictimes.com/view/neurodiversity-paradigm-psychiatry

Baron-Cohen S. (2002). The extreme male brain theory of autism. *Trends in cognitive sciences*, *6*(6), 248–254. https://doi.org/10.1016/s1364-6613(02)01904-6

Beauchaine, T. P., Ben-David, I., & Bos, M. (2020). ADHD, financial distress, and suicide in adulthood: A population study. *Science Advances*. https://doi.org/10.1126/sciadv.aba1551

Benet-Martínez, V., & Haritatos, J. (2005). Bicultural Identity Integration (BII): Components and psychosocial antecedents. *Journal of Personality*, *73*(4), 1015–1050. https://doi.org/10.1111/j.1467-6494.2005.00337.x

Bilecen, B. (2021). Personal network analysis from an intersectional perspective: How to overcome ethnicity bias in migration research. *Global Networks*. 21, 470– 486. https://doi.org/10.1111/glob.12318

Blume, H. (1998, September 30). *Neurodiversity*. The Atlantic. https://www.theatlantic.com/magazine/archive/1998/09/neurodiversity/305909/

Botha, M., & Frost, D. M. (2020). Extending the minority stress model to understand mental health problems experienced by the autistic population. Society and Mental Health, 10(1), 20–34. https://doi.org/10.1177/2156869318804297

Cage, E., Di Monaco, J., & Newell, V. (2018). Experiences of autism acceptance and mental

      health in autistic adults. *Journal of Autism and Developmental Disorders, 48*(2), 473–

      484. https://doi.org /10.1007/s10803-017-3342-7

Caldwell-Harris, C., Murphy, C. F., Velazquez, T., & McNamara, P. (2011). Religious belief

      systems of persons with high functioning autism. *Proceedings of the Annual Meeting of*

      the Cognitive Science Society, 33, 3362–3366.

Catala, A., Faucher, L. & Poirier, P. (2021). Autism, epistemic injustice, and epistemic

      disablement: a relational account of epistemic agency. *Synthese*, 199**,** 9013–9039.

      https://doi.org/10.1007/s11229-021-03192-7

Centre for Excellence in Universal Design. (n.d.). *The 7 Principles*. Retrieved August 8, 2022,

      from https://universaldesign.ie/what-is-universal-design/the-7-principles/the-7-

      principles.html

Checkbox Survey Team. (2022). *Checkbox Survey* (Version 7.60.0) [Computer software].

      https://www.checkbox.com/

Collins, P. H. (2019). *Intersectionality as critical social theory*. Duke University Press.

Cooper, B. (2016). Intersectionality. In L. Disch & M. Hawkesworth (Eds.), *The Oxford*

      Handbook of Feminist Theory (pp. 385–406). Oxford University Press.

      https://doi.org/10.1093/oxfordhb/9780199328581.013.20

Crompton, C. J., Ropar, D., Evans-Williams, C. V., Flynn, E. G., & Fletcher-Watson, S. (2020).

      Autistic peer-to-peer information transfer is highly effective. *Autism*, *24*(7), 1704-1712.

Dewinter, J., De Graaf, H., & Begeer, S. (2017). Sexual orientation, gender identity, and

      romantic relationships in adolescents and adults with autism spectrum disorder. *Journal*

of Autism and Developmental Disorders, *47*(9), 2927–2934.

https://doi.org/10.1007/s10803-017-3199-9

Donohue, M. R., Childs, A. W., Richards, M., & Robins, D. L. (2019). Race influences parent

report of concerns about symptoms of autism spectrum disorder. *Autism*, *23*(1), 100–111.

https://doi.org/10.1177/1362361317722030

Doyle N. (2020). Neurodiversity at work: A biopsychosocial model and the impact on working

adults. *British Medical Bulletin*, 135(1), 108–125. https://doi.org/10.1093/bmb/ldaa021

Dressler, W. (2018). *Culture and the Individual*. Routledge.

https://doi.org/10.4324/9781315164007

Dykhuizen, E. B. (n.d.). Autism/Neurodivergence. *Erin Brandel Dykhuizen, MA, MSW, LICSW
(blog)*. Retrieved August 10, 2022, from https://erinbdlicsw.com/autism-
neurodivergence/

Fadus, M.C., Ginsburg, K.R., Sobowale, K. *et al.* (2020). Unconscious bias and the diagnosis of

disruptive behavior disorders and ADHD in African American and Hispanic youth. *Acad
Psychiatry* 44**,** 95–102. https://doi-org/10.1007/s40596-019-01127-6

 Gillott, A., & Standen, P. J. (2007). Levels of anxiety and sources of stress in adults with autism.

Journal of intellectual disabilities : JOID, *11*(4), 359–370.

https://doi.org/10.1177/1744629507083585

Goering S. (2015). Rethinking disability: the social model of disability and chronic disease.

Current reviews in musculoskeletal medicine, *8*(2), 134–138.

https://doi.org/10.1007/s12178-015-9273-z

Griffin, E. & Pollak, D. (2009), Student experiences of neurodiversity in higher education:

insights from the BRAINHE project. Dyslexia, 15: 23-41. https://doi.org/10.1002/dys.383

Hollocks, M., Lerh, J., Magiati, I., Meiser-Stedman, R., & Brugha, T. (2019). Anxiety and

depression in adults with autism spectrum disorder: A systematic review and meta-

analysis. *Psychological Medicine, 49*(4), 559-572.

https://doi.org/10.1017/S0033291718002283

Hull, L., Petrides, K. V., & Mandy, W. (2020). The female autism phenotype and camouflaging:

A narrative review. *Review Journal of Autism and Developmental Disorders*, *7*(4), 306-

317.

JASP Team. (2022). *JASP* (Version 0.16.3) [Computer software]. https://jasp-stats.org/

Keen, D., Reid, F., & Arnone, D. (2010). Autism, ethnicity and maternal immigration. *British

Journal of Psychiatry, 196*(4), 274-281. https://doi.org/10.1192/bjp.bp.109.065490

Lovibond, S.H. & Lovibond, P.F. (1995). *Manual for the Depression Anxiety & Stress Scales*.

(2nd Ed.) Sydney: Psychology Foundation.

Liu, E. Y. (2018). Neurodiversity, Neuroethics and the Autism Spectrum. In L. S. M. Johnson &

K. S. Rommelfanger (Eds.), *The Routledge handbook of neuroethics* (pp. 349–411).

Routledge, Taylor & Francis Group.

Lugnegård, T., Hallerbäck, M. U., & Gillberg, C. (2012). Personality disorders and autism

spectrum disorders: What are the connections? *Comprehensive Psychiatry*, *53*(4), 333–

340. https://doi.org/10.1016/j.comppsych.2011.05.014

Lund, E. M. (2021). Examining the potential applicability of the minority stress model for

explaining suicidality in individuals with disabilities. *Rehabilitation Psychology*, *66*(2),

183–191. https://doi.org/10.1037/rep0000378

Masi, G., Scullin, S., Narzisi, A., Muratori, P., Paciello, M., Fabiani, D., Lenzi, F., Mucci, M., &

D'Acunto, G. (2020). Suicidal ideation and suicidal attempts in referred adolescents with

high functioning Autism Spectrum Disorder and comorbid Bipolar Disorder: A pilot study. *Brain Sciences*, *10*(10), 750. https://doi.org/10.3390/brainsci10100750

Mellifont, D. (2021). A qualitative study exploring neurodiversity conference themes, representations, and evidence-based justifications for the explicit inclusion and valuing of OCD. *The International Journal of Information, Diversity, & Inclusion*, 5(2), 111–138.

Mandell, D.S., Ittenbach, R.F., Levy, S.E. (2007). Disparities in diagnoses received prior to a diagnosis of autism spectrum disorder. *Journal of Autism and Developmental Disorders* 37(9): 1795–1802. https://doi.org/10.1007/s10803-006-0314-8

Meyer, I. H. (2003). Prejudice, social stress, and mental health in lesbian, gay, and bisexual populations: Conceptual issues and research evidence. *Psychological Bulletin, 129*(5), 674–697. https://doi.org/10.1037/0033-2909.129.5.674

Misawa, M. (2010). Queer race pedagogy for educators in higher education: Dealing with power dynamics and positionality of LGBTQ students of color. *International Journal of Critical Pedagogy, 3* (1), 26-35.

Nagib, W., & Wilton, R. (2019). Gender matters in career exploration and job-seeking among adults with autism spectrum disorder: Evidence from an online community. *Disability and Rehabilitation, 42(18), 2530–2541.* doi:10.1080/09638288.2019.1573936

Newman, L., Wagner, M., Knokey, A.-M., Marder, C., Nagle, K., Shaver, D., Wei, X., Cameto, R., Contreras, E., Ferguson, K., Greene, S., & Schwarting, M. (2011). *The post-high school outcomes of young adults with disabilities up to 8 years after high school. A Report From the National Longitudinal Transition Study-2 (NLTS2), NCSER 2011-3005*. Menlo Park, CA: SRI International. Available at: www.nlts2.org/reports/

Nicolaidis, C. (2012). What Can Physicians Learn from the Neurodiversity Movement? *AMA Journal of Ethics*, *14*(6), 503–510.

https://doi.org/10.1001/virtualmentor.2012.14.6.oped1-1206

Oldershaw, A., Treasure, J., Hambrook, D., Tchanturia, K., & Schmidt, U. (2011). Is anorexia nervosa a version of autism spectrum disorders? *European Eating Disorders Review*, *19*(6), 462–474. https://doi.org/10.1002/erv.1069

Pachowicz, M. (2020). Neurodivergence in AFAB Individuals. *Trinity Women's Review*, *4*(1), 129–139.

Pelton, M. K., Crawford, H., Robertson, A. E., Rodgers, J., Baron-Cohen, S., & Cassidy, S. (2020). Understanding Suicide Risk in Autistic Adults: Comparing the Interpersonal Theory of Suicide in Autistic and Non-autistic Samples. *Journal of Autism and Developmental Disorders*, *50*(10), 3620–3637. https://doi.org/10.1007/s10803-020-04393-8

Resnick, A. (2022). *What Is Neurodivergence and What Does It Mean to Be Neurodivergent?* Verywell Mind. Retrieved August 10, 2022, from https://www.verywellmind.com/what-is-neurodivergence-and-what-does-it-mean-to-be-neurodivergent-5196627

Riglin, L., Leppert, B., Dardani, C., Thapar, A., Rice, F., O'Donovan, M., . . . Thapar, A. (2021). ADHD and depression: Investigating a causal explanation. *Psychological Medicine,* *51*(11), 1890-1897. https://doi.org/10.1017/S0033291720000665

Robertson, S. M. (2009). Neurodiversity, quality of life, and autistic adults: Shifting research and professional focuses onto real-life challenges. *Disability Studies Quarterly*, *30*(1).

Romney, A. K., Weller, S. C., Batchelder, W. H.. 1986. Culture as consensus: A theory of culture and informant accuracy. *American Anthropologist*, 88:313–38.

Rydén, G., Rydén, E., & Hetta, J. (2008). Borderline personality disorder and autism spectrum

      disorder in females: A cross-sectional study. *Clinical Neuropsychiatry*, *5*(1), 22-30.

Ryder, A.G., Alden, L., & Paulhus, D.L. (2000). Is acculturation unidimensional or

      bidimensional?: A head-to-head comparison in the prediction of demographics,

      personality, self-identity, and adjustment. Journal of Personality and Social Psychology,

      79, 49-65.

Sam, Y. S. (2019). *Demisexuality and autism*. NeuroClastic. Retrieved August 13, 2022, from

      https://neuroclastic.com/demisexuality-and-autism/

Schiweck, C., Arteaga-Henriquez, G., Aichholzer, M., Edwin Thanarajah, S., Vargas-Cáceres,

      S., Matura, S., Grimm, O., Haavik, J., Kittel-Schneider, S., Ramos-Quiroga, J. A.,

      Faraone, S. V., & Reif, A. (2021). Comorbidity of ADHD and adult bipolar disorder: A

      systematic review and meta-analysis. *Neuroscience & Biobehavioral Reviews*, *124*, 100–

      123. https://doi.org/10.1016/j.neubiorev.2021.01.017

Segers, M., & Rawana, J. (2014). What do we know about suicidality in Autism Spectrum

      Disorders? A systematic review. *Autism Research*, *7*(4), 507–521.

      https://doi.org/10.1002/aur.1375

Singer, J. (1999). Why can't you be normal for once in your life? In M. Corker & S. French

      (Eds.), *Disability discourse* (pp. 59–67). Open University Press: Buckingham.

Strang, J. F., Anthony, L. G., Song, A., Lai, M.-C., Knauss, M., Sadikova, E., Graham, E., Zaks,

      Z., Wimms, H., Willing, L., Call, D., Mancilla, M., Shakin, S., Vilain, E., Kim, D.-Y.,

      Maisashvili, T., Khawaja, A., & Kenworthy, L. (2021). In addition to stigma: Cognitive

      and autism-related predictors of mental health in transgender adolescents. *Journal of*

Clinical Child & Adolescent Psychology, 1–18.

https://doi.org/10.1080/15374416.2021.1916940

The Local Denmark (2016, May 6) Danish 'cult' claiming 'demons cause autism' arrives in

Spain. (2016, May 6e). *The Local Denmark*. Retrieved August 13, 2022 from

https://www.thelocal.dk/20160506/cult-leader-who-claims-he-can-heal-autism-arrives-in-

spain/

Thomson, R., Yuki, M., Talhelm, T., Schug, J., Kito, M., Ayanian, A. H., et al. (2018).

Relational mobility predicts social behaviors in 39 countries and is tied to historical

farming and threat. *Proceedings of the National Academy of Sciences.* 115, 7521–7526.

https://doi.org/10.1073/pnas.1713191115

Turner, R. J. (2019, October 10). *Autism and cults*. Retrieved August 14, 2022, from

https://www.linkedin.com/pulse/autism-cults-richard-james-turner/

Udonsi, P. (2022). Young, gifted and black: The intersectionality of race, intellectual disability

and neurodivergence, *Critical and Radical Social Work* (published online ahead of print

2022). Retrieved Aug 9, 2022, from

https://bristoluniversitypressdigital.com/view/journals/crsw/aop/article-10.1332-

204986021X16530492120870/article-10.1332-204986021X16530492120870.xml

Warrier, V., Greenberg, D. M., Weir, E., Buckingham, C., Smith, P., Lai, M. C., Allison, C., &

Baron-Cohen, S. (2020). Elevated rates of autism, other neurodevelopmental and

psychiatric diagnoses, and autistic traits in transgender and gender-diverse individuals.

Nature Communications, *11*(1), 3959. https://doi.org/10.1038/s41467-020-17794-1

Wasser, Z., & Chiaramonte, T. (2017, February 24). *Couple with Asperger's syndrome: "We're even more extraordinary together."* CNN. https://www.cnn.com/2017/02/24/health/heart-of-the-matter-couple-aspergers-syndrome/index.html

Weinstein, G. (2021). *Asexual, Autistic, Unacknowledged: The Intersection of Ace and Autistic Representation in Media*. The Michigan Gayly. Retrieved August 10, 2022, from http://www.themichigangayly.com/7/post/2021/04/asexual-autistic-unacknowledged-the-intersection-of-ace-and-autistic-representation-in-media.html

Williams, D. R., Yu, Y., Jackson, J. S., & Anderson, N. B. (1997). Racial Differences in Physical and Mental Health: Socioeconomic Status, Stress, and Discrimination. *Journal of Health Psychology*, 2 (3), 335-351. https://doi.org/10.1177/135910539700200305

Wright, D. J. (2021, August 13). Autism Has A Race Problem. *Medium*. https://weareautastic.medium.com/autism-has-a-race-problem-3c706a37d5a9

Yau, L. (n.d.). *I'm Autistic and Polyamorous. Here's Why It Works For Me.* Poly Philia. Retrieved August 13, 2022, from https://www.polyphilia.blog/home/autism-and-polyamory

Zucker, N. L., Losh, M., Bulik, C. M., LaBar, K. S., Piven, J., & Pelphrey, K. A. (2007). Anorexia nervosa and autism spectrum disorders: Guided investigation of social cognitive endophenotypes. *Psychological Bulletin*, *133*(6), 976–1006. https://doi.org/10.1037/0033-2909.133.6.976