Experiences of Neurodiversity: Belonging, Social Support, and Well-Being

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Given the societal barriers that impair overall quality of life for people with disabilities and prevalence of mental health problems among neurodivergent populations, this study sought to explore whether feelings of belonging, perceived social support and well-being differ between neurodivergent and neurotypical individuals. The present study aimed to build on previous work by examining these factors through an intersectionality lens, focusing on those with intersecting marginalized identities of race and ethnicity, immigrant status, and / or sexual and gender identities. Participants (n = 169, 39% neurodivergent) completed an online survey focused on well-being, perceived social support, and feelings of belonging, as well as discrimination and loneliness. Those who identified as neurodivergent reported greater feelings of loneliness but similar perceived well-being, social support, feelings of belonging, and discrimination as neurotypical participants. Future research should aim to examine intersecting identities further, as this was not possible in the present study given the lack of diversity in the sample. These findings contribute to the currently limited literature focused on well-being among neurodivergent populations, and add further weight to a more positive narrative regarding the experiences of neurodivergent adults.

Key words: intersectionality, autistic, ADHD, neurodivergent, discrimination, identity, supports, barriers

Experiences of Neurodiversity: Belonging, Social Support and Well-Being

Neurodiversity is defined as the natural variation and diversity in human minds (Walker, 2014). Those described as neurodivergent typically include those with diagnoses of autism, attention deficit hyperactivity disorder (ADHD), and/or learning disabilities (Morris-Rosendahl & Crocq, 2020). In the US, around 1 in 36 children are estimated to be autistic (Maenner et al., 2023), around 10.5% of children have an ADHD diagnosis (Staley et al., 2023), and around 1.7% report having a learning disability (Cortiella & Horowitz, 2014). The neurodiversity movement seeks to celebrate neurological differences as strengths rather than deficits (Kapp et al., 2013). Proponents of the neurodiversity movement argue the importance of recognizing these differences in order to support neurodivergent populations living in a neurotypical society, and promote motivation to seek support. Recognizing that neurodivergent individuals also embrace other identities, including race, ethnicity, gender identity, and others, is increasingly understood as critical to gaining a full perspective of neurodivergent experiences (Cohen et al., 2022).

Intersectionality, rooted in feminist theory, is the understanding that different aspects of identity are interconnected and can lead to unique struggles, discrimination, and experiences (Bowleg, 2012). These challenges are understood to not be simply additive, but rather compound and exacerbate one another (Crenshaw, 1989). Intersectionality is woven into the neurodiversity paradigm (Strand, 2017); living in a world designed for neurotypical people, challenges faced by neurodivergent people are contextual, based on the situation in which they are living and experiencing (Robertson, 2010).

There is a lack of research and understanding of the interaction between neurodiversity and intersectional identities. Much of the research on autism continues to focus on white,

Western males, leading to Black autistic people being underrepresented within the research literature (Malone et al., 2022). Research focused on neurodivergent children of immigrants is limited as well, focusing more on epidemiology, access to health care, and receiving interventions rather than on lived experiences (Schmengler et al., 2021; Morinaga et al., 2020). Previous research has suggested that the prevalence of autism and ADHD are higher in children of immigrant and refugee parents (Abdullahi et al., 2017; Kawa et al., 2017). Yet, children of immigrant background and of ethnic minorities are underdiagnosed (Begeer et al., 2009), and tend to be diagnosed later than US-born children (Hall-Lande et al., 2021; Valicenti-McDermott et al., 2012).

It is also important to consider the intersection of sexuality and gender identity with neurodiversity. Autistic individuals are more likely to identify as a member of the LGBTQ+ community and one in seven autistic women and one in 20 autistic men report being attracted to someone of the same sex (Dewinter et al., 2017). In addition, 22% of female participants and 8% of male participants assigned these genders at birth reported some gender non-conforming feelings (Dewinter et al., 2017). Miller et al. (2020) argue that neurodivergent people may differ in their conceptualization and internalization of ideas considered normative regarding gender and sexuality. In a population based study of 47,000 people in Sweden, Rudolph et al. (2018) found that a lower proportion of people who scored high on an AQ-10 autism assessment tool identified as heterosexual. Autistic individuals are also more diverse in their gender identities than the wider population (George & Stokes, 2017), and this is without considering those who have not yet been diagnosed with autism, or come out as LGBTQ+, meaning that this could be even higher.

Feelings of Belonging, Social Support and Well-Being

In multicultural societies like America, children often develop tSocial support, feelings of acceptance, and feelings of belonging have been identified as key to well-being, as well as being associated with support seeking behaviors, indirectly acting on mental health and well-being outcomes (Gopalan & Brady, 2020). In a national study of college students in the US, sense of belonging was found to be positively associated with use of campus services and self-reported mental health (Gopalan & Brady, 2020). Those with marginalized identities experienced more difficulty feeling accepted and building a sense of belonging, with subsequent negative impacts on well-being (Gopalan & Brady, 2020).

The associations between feelings of acceptance and belonging and well-being and mental health outcomes have also been identified in neurodivergent populations. Anxiety and depression, which are prevalent among neurodivergent populations (Accardo et al., 2024; Riedelbauch et al., 2024), also correlate with negative well being and autistic and ADHD traits (Garcha & Smith, 2023). Feelings of acceptance and belonging could potentially buffer these interactions. In a study which conducted interviews with autistic people, participants identified the benefits of autistic community connectedness as increased self-esteem and a sense of community not experienced elsewhere, with lack of connectedness being linked to ambivalence with an autistic identity and/or feelings of internalized stigma (Botha et al., 2022). It is therefore important to further understand feelings of acceptance and belonging in neurodivergent populations, in order to enhance the promotion of these feelings.

One way to understand feelings of acceptance and belonging within neurodivergent populations involves developing a greater understanding of the double empathy problem (Milton, 2012). The double empathy problem highlights challenges that may occur when people from different backgrounds interact with one another. Central to this concept is the understanding that communication breakdowns involve all people in the communicative exchange. This concept has recently become popularized within the autistic community (Milton et al., 2022). It becomes especially important when considering autistic people who are members of other minoritized groups.

Loneliness has also been shown to be higher in autistic populations, and perceived social support may be a protective factor of loneliness in autistic adolescent boys (Lasgaard et al., 2010). Social support is also associated with quality of life in autistic adults (Bishop-Fitzpatrick et al., 2018); autistic people report lower perceived social support than individuals with ADHD and neurotypical controls (Alvarez-Fernandez, 2017). More practical, tangible social support has a negative association with depression, potentially acting as an indirect protective factor against suicidality in autistic individuals (Hedley et al., 2017). Interviews with autistic young adults in the UK explored access to support (Davies et al., 2024). Support groups were recognized as helpful in making friends, developing a sense of belonging, and developing coping strategies. In terms of support from professionals and well-being, autistic young people have reported feeling misunderstood by mental health professionals (Davies et al., 2024), and cultural differences can exacerbate this (Kim et al., 2023). The double empathy problem explains miscommunications between autistic and non-autistic people as due to a mismatch in perspectives and communication (Milton, 2012); in healthcare settings a triple empathy problem could arise due to communication differences between healthcare professionals and non-healthcare professionals (Shaw et al., 2024). There are health disparities between autistic and nonautistic populations, and autistic patients should be taken seriously by healthcare professionals (Stanford, n.d.) in order to support their health and well-being. In understanding the support that professionals give, it is important to explore feelings of social support and well-being across different populations.

This study seeks to explore feelings of belonging, social support and well-being and how these experiences differ between neurodivergent and neurotypical individuals, and in particular, those with intersecting identities. While previous work has looked at belonging (Pesonen et al., 2015), perceived social support (Alvarez-Fernandez, et al., 2017), and well-being (Danker

et al., 2019), this study looks at these experiences together and takes a broader perspective of the experiences of neurodivergent individuals through a lens of intersectionality. It is hypothesized that the experiences of neurodivergent individuals are less positive compared to their neurotypical counterparts, particularly amongst those with intersecting identities. This study aims to contribute to the currently limited literature focused on intersectionality and neurodiversity, and specifically to identify particularly vulnerable groups who could benefit from greater support and outreach.

Method

Participants

A sample of 170 participants was obtained. The majority of participants were between the ages of 18 and 21 (78.90%, n = 86). Most participants identified as either a cisgender male or cisgender female (90.53%, n = 153). Around 45% identified as non-white. Over 30% of the sample reported a sexual orientation other than heterosexual (30.95%, n = 53). Over 90% of participants reported having been born in the United States. (91.72%, n =155). With regards to neurodivergence, 66 participants (39.05%) reported being neurodivergent. Being neurodivergent was measured through self-report where participants indicated whether or not their day to day life was affected by neurodivergence, which allowed inclusion of those without a formal diagnosis. Additional information regarding demographic information is reported in Table 1. The average age of the participants utilized was 26.9 years old. In regards to gender, 41.5% were Female, 56.4% were Male, and 2.1% were Non-Binary (Figure 1). In regards to race and ethnicity, participants in this study were composed of the following; 53.1% European American/Caucasian, 24.1% Asian/Pacific Islander, 9.7% Latinx, 6.2% African American/Black, 2.1% Middle Eastern, 4.6% other (Figure 1). Participants' generational status consisted of: 10.7% first generational status, 31.6% second generational status, 12.2% third generational status, 9.2% fourth generational status, 36.3% fifth generational status (Figure 1).

Figure 1
Demographic Information (N=169)

Variable	%	N
Age		
18-21	78.90	86
22-30	8.26	9
30-60	12.84	14
Gender Identity		
Cisgender Man	33.73	57
Cisgender Woman	56.80	96
Transgender Man	1.18	2
Transgender Woman	1.18	2
Non-Binary	1.78	3
Other	2.37	4
Prefer Not to Say	2.96	5
Sexual Orientation		
Heterosexual or Straight	69.05	116
Gay	3.57	6
Lesbian	2.98	5
Bisexual	13.10	22
Queer	.60	1
Asexual	2.98	5
Pansexual	1.79	3
Other	1.79	3
Prefer Not to Say	4.17	7
Race/Ethnicity		
Non-Hispanic White	55.03	93
Black/Afro Caribbean/African-American	11.83	20
Latino/Hispanic-American	13.02	22
Asian-American	10.65	18
Other	5.92	10
Prefer Not to Say	.59	1
Affected by Neurodivergence		
Yes	39.05	66
No	60.95	103
Born in the United States		
Yes	91.72	155
No	8.28	14

Mother Born in the United States		
Yes	63.10	106
No	36.90	62
Father Born in the United States		
Yes	67.48	110
No	32.52	53

Opportunity sampling was used to recruit participants, through the email listserv for the Center for Autism Research and Education at the host university. Potential participants contacted the research team and were screened for eligibility: aged 18 years or older and residing in the U.S. A link to the online Qualtrics questionnaire was emailed to those eligible. Participants were entered into a raffle for a $50 gift card as an incentive to participate. Participants were also recruited through the university research participant pool where they earned course credit for their participation. 59% of the sample were recruited this way. University students accessed the survey through an online participant pool management system, Sona-Systems (sona-systems.com). Following survey completion they received one of ten required research credits for their introductory Psychology course. All aspects of the study were performed in accordance with the Institutional Review Board of the university following ethical approval (IRB approval code: 24-171-HIL).

Measures

Participants completed an online survey via Qualtrics platform, which consisted of seven question areas. The first section covered demographic questions including age, gender identity, race/ethnicity, immigrant status, neurological conditions and diagnoses, etc. The demographics section was always presented first. The remaining six survey sections consisted of self-report measures of sense of belonging, social support, and well-being, as well as everyday discrimination and loneliness. Each of these sections were presented randomly to counteract order effects.

Sense of Belonging Instrument (SOBI)

The SOBI measure consists of two sub scales; the Psychological Sense of Belonging (SOBI-P) which contains eighteen items, and the Antecedents to Sense of Belonging (SOBI-A) which contains nine items. Both sub instruments utilize a 4-point Likert scale. Participants answer each question by choosing a response ranging from 1 (strongly disagree) to 4 (strongly agree) (Hagerty & Patusky, 1995). The purpose of the SOBI-P is to measure an individual's subjective perception of belonging in relation to other groups, environments, and organizations (Hagerty & Patusky, 1995). The purpose of SOBI-A is to measure precursors to a sense of belonging. Content validity was established through a panel review by experts, and construct validity was supported by factor analysis and correlations with related constructs (Hagerty & Patusky, 1995).

Multidimensional Scale of Perceived Social Support (MSPSS)

The MSPSS is a twelve item self-report instrument that measures perceived social support across three areas: family, friends, and significant others. Each group of four items corresponds to each of its subscales. Participants respond to each item using a 7-point Likert scale, where responses range from 1 (Very Strongly Disagree) to 7 (Very Strongly Agree). The MSPSS measures an individual's perception of support from their different social networks (Zimet et al., 1988). Internal validity is supported by high Cronbach alpha values, 0.91 for the scale as a whole, which depict consistent measurement (Zimet et al., 1988). validity (Kessler et al., 2002). Moreover, this measure has been validated with diverse groups, such as Australian, French, and Chinese populations (Furukawa et al., 2003; Arnaud et al., 2010, Chan et al., 2014). Additionally, it is unidimensional and holds high predictive validity (Smout, 2019). Particularly, it has been effectively utilized as a predictive factor for mental disorders and symptoms such as depression (Smout, 2019).

Warwick-Edinburgh Mental Wellbeing Scale (WEMWBS)

The WEMWBS is a self-report survey that measures mental well-being through assessment of emotional and psychological aspects like feeling capable, positive emotions. These aspects can more generally be split into two areas hedonic, the subjective feeling of being happy and life satisfaction, and eudaimonic, or self-efficacy (Tennant et al., 2007). Individuals rate their experiences over the past two weeks on a 5-point Likert scale, from 1 (none of the time) to 5 (all of the time). Higher scores reflect more positive mental well-being. WEMWBS internal consistency is supported by Cronbach's Alpha (0.91). Test-retest reliability is also high (0.83). Validity is further supported by strong correlations with existing measures like the WHO-5 Well-Being Index (Tennant et al., 2007).

Everyday Discrimination Scale

The Everyday Discrimination Scale measures the frequency of routine experiences of unfair treatment in daily life (Sternthal et al., 2011). More specifically, this scale focuses on more subtle, ongoing forms of discrimination rather than major events of discrimination. Individuals use a 6-point Likert scale, ranging from 1 (Almost every day) to 6 (Never) to rate their experiences (Williams et al., 1997). The scale consists of 9 items that ask individuals how often they experience various forms of mistreatment in their day-to-day lives. For example, being treated with less courtesy or respect, receiving poorer service than others, and being threatened or harassed (Williams et al., 1997). The scale demonstrates excellent psychometric properties across many populations. It has shown high internal consistency, which is supported by Cronbach's alpha ranging from 0.84 to 0.91 (Williams et al., 1997). The scale shows good construct validity, correlating with measures of psychological distress, physical health outcomes, and other discrimination-related constructs.

UCLA Loneliness Scale v3

The UCLA Loneliness Scale measures subjective feelings of loneliness and social isolation. It is a twenty item self-report survey that assesses how often individuals feel lonely, using a 4-point Likert scale ranging from 1 (Never) to 4 (Always). Higher scores indicate greater levels of loneliness (Russell, 1996). Construct validity is supported by excellent correlations with other loneliness scales like the NYU Loneliness Scale, and negative correlations with measures of social support (Russell, 1996).

Throughout the survey four attention check questions were included, yielding around two attention checks for every five minutes of survey response (Muszyński, 2023). Infrequency/frequency items were selected as attention checks where any attentive respondent should select a predicted response (Kay & Saucier, 2023), e.g. "I like to spend my time with people who are nice to me."; "I have never cried." One attentional check question was a repeated question and participants who responded differently the second time were noted. These attention checks were selected to screen out participants who were not paying attention while reducing "spillover" effects of participants responding negatively to attention check questions (Muszyński, 2023). In addition, participants who took less than 50% of the average time to complete the survey were carefully examined and removed if they failed the attention checks or had a significant amount of missing data. These screening procedures resulted in removing thirteen participants. The survey took an average of around 12 minutes to complete.

Results

Linear regression models were created to examine correlations between age, gender, sexual orientation, race/ethnicity, place of birth, and neurodivergence on measures of belonging, social support, and well-being, as well as loneliness and discrimination. Scores on each of the measures were the outcome variables in this study. Age was used as a control variable due to the possible effects it had on each of the measures. Given that most participants were between the ages of 18 and 21, it is reasonable to infer a person's feelings of belonging, social support and well-being could be affected significantly due to the number of changes that often occur during this stage of life, for example moving out of family homes, or to university (Nielsen et al., 2023; Burke et al., 2016). Race/ethnicity was used as a control variable due to the increased rates of discrimination people of color face (Matos et al., 2024). Each of the regression models shown are considered additive models.

Sexuality, place of birth, and being affected by neurodivergence were the predictor variables in this study. Regression models were conducted using one or a combination of the predictor variables to examine their effects on each of the outcome variables. Each of these models was compared using Bayesian Information Criterion (BIC). The full models with the predictor and control variables are displayed due to being the strongest models for explaining scores on each of the outcome variables. Models examining the intersection of being affected by neurodivergence with gender identity, with sexuality, and with race/ethnicity were also generated. However, these models are not displayed due to being significantly weaker and less parsimonious than their counterparts that did not contain the intersections, as evidenced by significantly higher BIC scores in models that examined the intersection along with only one correlation between one interaction and the outcome variable in one model being statistically significant. All models had a significance threshold of $p < .05$.

Variable	B(SE)	p-value
(Intercept)	26.22(6.28)	**<.001**
Age	.36(.13)	**<.01**
Cisgender male	6.83(2.48)	**<.001**
Straight	-10.01(2.40)	**<.001**
Non-white	-1.98(3.19)	.54
Born in the United States	1.12(4.76)	.81
Mother Born in United States	.14(3.34)	.97
Father Born in United States	4.13(3.90)	.29

Sense of Belonging Instrument - Psychological

In Table 2, the beta coefficient (B0) represents the average composite score on the SOBI-P for those who were 18 years old, non-cisgender males, non-heterosexual, and white. According to Table 2, the average score on the SOBI-P for those who fit the above criteria was 26.22. When it comes to age, keeping all other variables

Affected by Neurodivergence	4.78(2.47)	.06
Adjusted R-Square		.29

F(8, 84) = 5.60 p <.001

Sense of Belonging Instrument - Antecedent

The average score on the SOBI-A for 18-year old white, cisgender, heterosexual males was 29.14. Unlike on the SOBI-P, age and gender identity did not significantly affect scores on the SOBI-A. However, sexuality (B3) did significantly affect SOBI-A scores, with those identifying as straight scoring 1.82 points higher (indicating lower sense of belonging) than those who did not identify as heterosexual, controlling for all other variables. As with the SOBI-P, place of birth and neurodivergence did not affect scores on the SOBI-P based upon this model. The model predicting SOBI-A scores was not as strong as the model predicting SOBI-P scores, as evidenced by the lower adjusted r-square and non-significant F statistic. Results from Table 3 should be interpreted with this discrepancy in mind.

Table 3

Regression Model Predicting SOBI-A Scores Based on Demographic Information and Diagnosed Neurodivergence (N = 97)

Variable	B(SE)	p-value
(Intercept)	29.14(2.22)	<.001
Age	-.06(.05)	.18
Cisgender male	-.01(.90)	.99
Straight	1.82(.86)	.04
Non-white	-.40(1.21)	.74
Born in the United States	1.00(1.65)	.54
Mother Born in United States	-1.66(1.29)	.20
Father Born in United States	-.00(1.46)	1.00
Affected by Neurodivergence	-.92(.90)	.31
Adjusted R-Square		.06

F(8, 88) = 1.72 p = .11

Variable	B(SE)	p-value
(Intercept)	29.14(2.22)	<.001
Age	-.06(.05)	.18
Cisgender male	-.01(.90)	.99
Straight	1.82(.86)	.04
Non-white	-.40(1.21)	.74
Born in the United States	1.00(1.65)	.54
Mother Born in United States	-1.66(1.29)	.20
Father Born in United States	-.00(1.46)	1.00
Affected by Neurodivergence	-.92(.90)	.31
Adjusted R-Square		.06

F(8, 88) = 1.72 p = .11

Multidimensional Scale of Perceived Social Support (MSPSS)

The average score on the MSPSS for 18-year old white, cisgender, heterosexual males was 67.78. Age and gender identity did not significantly affect scores on this measure. However, sexuality (B3) significantly affected scores on this measure. Those who identified as straight scored 10.17 points higher than those who did not identify as straight, controlling for all other variables. As with the previous measures, place of birth and neurodivergence did not affect scores based upon this model. The model for the MSPSS, as seen in Table 4, is considered strong, as evidenced by the adjusted r-square and significant F statistic.

Table 4

Regression Model Predicting MSPSS Scores Based on Demographic Information and Diagnosed Neurodivergence (N = 97)

Variable	B(SE)	p-value
(Intercept)	23.96(3.21)	<.001
Age	.05(.06)	.47
Cisgender male	-1.28(1.18)	.32
Straight	1.74(1.13)	.13
Non-white	1.36(1.60)	.40
Born in the United States	-1.98(2.46)	.42
Mother Born in United States	-1.62(1.58)	.31
Father Born in United States	1.22(1.85)	.51
Affected by Neurodivergence	-1.90(1.16)	.11

Warwick-Edinburgh Mental Wellbeing Scale (WEMWBS)

The average score on the WEMWBS for 18-year old white,

Adjusted R-Square	.01

F(8, 89) = 1.09 p = .38

cisgender, heterosexual males was 23.77. Age, gender identity, and sexuality did not significantly affect scores on this measure. As with the previous measures, place of birth and neurodivergence did not affect scores based upon this model. However, the low adjusted r-square and non-significant F statistic must be noted when interpreting the results on Table 5. Results from Table 5 should be interpreted with this discrepancy in mind.

Table 5

Regression Model Predicting WEMWBS Scores Based on Demographic Information and Diagnosed Neurodivergence (N = 98)

Variable	B(SE)	p-value
(Intercept)	33.52(5.67)	**<.001**
Age	.20(.12)	.10
Cisgender male	7.19(2.28)	**<.01**
Straight	-8.79(2.17)	**<.001**
Non-white	-5.46(3.02)	.07
Born in the United States	7.10(4.14)	.09
Mother Born in United States	-2.98(3.02)	.33
Father Born in United States	5.55(3.53)	.12
Affected by Neurodivergence	4.92(2.25)	**.03**
Adjusted R-Square		.29

F(8, 88) = 5.84 p = <.001

Everyday Discrimination Scale

The average score on the Everyday Discrimination Scale for 18-year old white, cisgender, heterosexual males was 43.82. Age and gender identity did not significantly affect scores on this measure. However, sexuality (B3) did significantly affect scores on this measure, with those identifying as straight scoring 2.91 points lower than those who did not identify as heterosexual, controlling for all other variables. On the Everyday Discrimination Scale, lower scores signify higher levels of discrimination. As with the previous two measures, place of birth and neurodivergence did not affect scores based upon this model. The model for the Everyday Discrimination Scale, as seen in Table 6, is considered strong, as evidenced by the adjusted r-square and significant F statistic.

Table 6

Regression Model Predicting Everyday Discrimination Scale Scores Based on Demographic Information and Diagnosed Neurodivergence (N = 99)

Variable	B(SE)	p-value
(Intercept)	43.82(4.58)	**<.001**
Age	.03(.10)	.78
Cisgender male	-2.82(1.82)	.13
Straight	6.41(1.71)	**<.001**
Non-white	2.66(2.30)	.25
Born in the United States	-3.38(3.46)	.33
Mother Born in United States	3.18(2.40)	.19
Father Born in United States	-5.14(2.68)	.06
Affected by Neurodivergence	-1.64(1.79)	.36
Adjusted R-Square		.12

F(8, 90) = 2.66 p = .01

UCLA Loneliness Scale

The average score on the UCLA Loneliness Scale for 18-year old white, cisgender, heterosexual males was 33.52. Age did not significantly affect scores on this measure. However, gender identity (B2) and sexuality (B3) significantly affected scores on this measure. Those who identified as a cisgender male scored 7.23 higher on this measure than those who did not identify as a cisgender male, controlling for all other variables. Those who identified as straight scored 8.81 points lower than those who did not identify as straight, controlling for all other variables. As with the previous measures, place of birth did not affect scores based upon this model. However, being affected by neurodivergence did affect scores on this

measure, with those who reported being affected by neurodivergence scoring 4.92 points higher than those who did not, indicating greater loneliness. The model for the UCLA Loneliness Scale, as seen in Table 7, is considered strong, as evidenced by the adjusted r-square and significant F statistic.

Table 7

Regression Model Predicting UCLA Loneliness Scores Based on Demographic Information and Diagnosed Neurodivergence (N = 97)

Discussion

This study explored feelings of belonging, social support and well-being and how these experiences differed between neurodivergent and neurotypical individuals, particularly those with intersecting identities. As hypothesized the findings showed greater feelings of loneliness among neurodivergent participants, but did not find significant differences on the other measures including sense of belonging, social support, discrimination and well-being. Intersectionality, or identifying with multiple marginalized groups, was not found to be a significant factor. This was an unexpected finding, and could be due to the sample distribution; the majority of the sample identified as white and cisgender, with around 30% identifying as LGBTQ+ and 8.28% reporting as not having been born in the United States.

The finding of greater feelings of loneliness amongst neurodivergent participants is reflected by previous literature, and these feelings of loneliness have been associated with mental health problems (Lasgaard et al., 2010; Ee et al., 2019; Jong et al., 2024). Previous research has shown higher levels of mental health challenges among those with ADHD (Hargitai et al., 2023; Yoshimasu et al., 2018), autism (Simonoff et al., 2008; Lai et al., 2019), and learning disabilities (Aro et al., 2018). Increased feelings of loneliness could be due to barriers imposed in the environment rather than factors intrinsic to neurodiversity itself. This is in line with efforts from the neurodiversity movement to shift perspectives away from a deficit model and closer to the social model of disability (Oliver, 2013) which argues that disability is caused by environmental obstacles, including attitudes and perspectives of others. Milton's (2012) theory of the double empathy problem argues that misunderstandings between autistic and non-autistic people are due to differences in communication, in that autistic people struggle to communicate with non-autistic people and vice versa, thereby, the 'deficits' associated with autism are a product of the situation. The misconceptions of autism held by neurotypical people have been theorized to contribute to low self esteem and negative mental health outcomes through thwarted belongingness, camouflaging and masking (Cook et al., 2021), and these misconceptions and differences in communication may be what underpins the increased levels of loneliness amongst neurodivergent people. Although research has shown that autistic community connectedness does not moderate the negative relationship between masking and well-being (Cage et al., 2022), there should still be a priority of creating a safe and accepting society whereby autistic people can be authentically themselves without masking. Autistic adults who view their autism as neurodiversity rather than a deficit tend to have higher self-esteem (Ferenc et al., 2023). Listening to the voices of neurodivergent individuals will help increase acceptance and the freedom to be authentic, and focusing on the priorities of neurodivergent individuals themselves in research is also critical for ensuring findings are meaningful to the neurodivergent population. Calls for centering the lived experience of neurodivergent individuals in research about them have grown (Botha & Gillespie-Lynch, 2022; Pellicano & den Houting, 2022), as well as the importance of including neurodivergent researchers in studies focused on their experiences, and the present study includes a neurodivergent co-author.

The lack of difference between the neurodivergent and neurotypical participants on measures of belonging, social support, discrimination and well-being may speak to the current challenges that youth from all demographic groups are experiencing. A link has been established between loneliness and depression and psychological distress in men (Lear & Dorstyn, 2024). For white men specifically, previous research has shown them to be more prone to depression than black men or women of any race (Assari & Lankarani, 2016), and more likely to report daily feelings of anxiety or depression than black or Hispanic men (Blumberg et al., 2015). They are also more likely to die by suicide (Larsen et al., 2024). Relatedly, cisgender males in the sample reported lower sense of belonging and greater loneliness than non-cisgender males.

Those who identified as straight reported a higher sense of belonging and placed greater value and importance on belonging (as indicated on the SOBI-A). They also reported less loneliness and less experiences of discrimination than the non-straight participants. However, they reported lower levels of perceived social support, which relates to the greater loneliness reported by the cisgender males. A potential explanation could be that the non-straight participants were able to connect and identity with the LGBTQ+ community and their "chosen family", known to be a significant source of support (Jackson Levin et al., 2020; Hailey et al., 2020). Further research is necessary to fully explain the lower sense of belonging and greater loneliness reported by cisgender males, and lower levels of social support perceived among straight males.

The lack of difference between the neurodivergent and neurotypical participants on measures of belonging, social support, discrimination and well-being may also reflect the neurodivergent sample, many of whom were college students. To maintain success in a college environment these participants have likely developed numerous coping mechanisms to manage academic

and non-academic challenges they may experience. Students with ADHD for example often develop strategies that allow them to maintain academic success such as setting alarms and reminders, scheduling, being accountable, and removing distractions (Meaux et al., 2009). A college environment provides a sense of group identity and community that may foster feelings of belonging and social support (Benson & Whitson, 2022; Samadieh & Rezaei, 2024; McKenney et al., 2024). More recent research has also shown that autistic students maintain high academic achievement, particularly those who are motivated and have a positive self-image (Johnson et al., 2023). It is also worth noting that the measure of being neurodivergent was a self-report measure of whether or not their day-to-day life is affected by being neurodivergent. A more accurate measure would have asked participants to provide evidence of a formal diagnosis of a neurodivergent condition. However, we intended to include individuals who may not have a formal diagnosis. Support in college has been increasing as perspectives among administration shift away from ableism and towards a more inclusive, neurodiversity affirming approach. Autistic college students who receive peer mentoring often improve communication and executive functioning skills (Locke et al., 2024), a potential barrier to college success for many neurodivergent students (Hillier et al., 2021; Anderson & Butt, 2017). They also better understand how to access supports and how to meet people (Hillier et al., 2019). Some studies have shown similar grade point averages and rates of degree completion between autistic students, students with ADHD/ADD, and learning disabilities, and students without disabilities (Bakker et al., 2023; Myrvold et al., 2021).

Further, the findings that neurodivergent and neurotypical individuals respond similarly to measures of belonging, social support, discrimination and well being help dispel negative, deficit focused, perspectives towards neurodiversity. These findings also relate to previous work examining adult outcomes among neurodivergent populations which has highlighted quality of life, arguably a critical indicator (White et al., 2023), as similar across neurodivergent and neurotypical populations. Increasing understanding and recognition of neurodiversity, and the focus on strengths highlighted by advocates within the neurodiversity movement, has helped shift societal attitudes towards a more positive and optimistic view, and these findings contribute to this movement.

Limitations and Future Directions

While the current findings are unique in the focus on belonging, social support and well-being among neurodivergent and neurotypical populations, there are some limitations that should be taken into account. Firstly, it was not possible to fully explore these experiences within the context of intersectionality due to the sample mostly identifying as cisgender, straight, and white. Future work will need to build on these findings by recruiting a more diverse sample where the significance of various identities can be more clearly elucidated. In addition, intersectionality was examined using broad demographic identifiers (race, immigration status, sexuality, gender identity) whereas in reality people's co-occurring identities are far more complex (Tatum, 2000), and influenced by current situations and previous experiences. Further, our sense of identity might be fluid depending on who we are interacting with and how they perceive us, what we are engaged in doing, social and political contexts, and many other factors (Tatum, 2000). Healthcare, education, government, and social service providers need to consider a much wider range of services, as well as impediments to accessing those supports and services, depending upon how the characteristics of co-occurring identities intersect.

Finally, it may also be beneficial to follow up on these findings using qualitative approaches, such as individual interviews or focus groups, which would allow a more detailed analysis regarding the impact of intersecting identities and well-being, sense of belonging, and perceived social support. Pivotal to this would be ensuring that the research is approached using a constructivist paradigm. Constructivism posits that knowledge generates from individuals themselves, who construct knowledge based upon their lived experiences (Savin-Baden & Major, 2013). As such, research using a constructivist paradigm would ensure the voices of neurodivergent individuals are central to the creation of research questions, approach, analysis and interpretation, as was the case with the present study. Furthermore, the autistic community has been calling for increased community based participatory research (CBPR), which often employs a constructivist paradigm. Using a CBPR framework could help raise the voices of particularly vulnerable groups and hear from their perspective what support would be beneficial for improving quality of life and how to most effectively implement such support (Strang et al., 2019).

Conclusion

This study explored feelings of belonging, social support and well-being and how these experiences differ between neurodivergent and neurotypical individuals, and in particular, those with intersecting identities. These findings build on previous work identifying positive outcomes for neurodivergent adults, and future research should further explore discussions around intersectionality. The sample reported similar feelings of belonging and perceived social support as neurotypical participants, as well as well-being and experiences of discrimination, however neurodivergent participants reported higher levels of loneliness. It is hoped these positive findings contribute to the reframing of neurodiversity and disability more broadly and help shift momentum away from using an ableist lens grounded in medical model philosophy to interpret the neurodivergent experience.

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