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The relationship between social experience and subjective well-being in autistic college students: A mixed methods study

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Abstract

This mixed methods study examined the relationship between the college social experience and subjective well-being in autistic students in the Midwestern US. An online survey focused on social connectedness, social participation, social support, and subjective well-being. A semi-structured interview discussed transition, supports received, and social participation. Correlations and a hierarchical regression were used to examine the relationship between social experience variables and subjective well-being from the survey. Inductive thematic analysis was used to identify interview themes. Theme counts for students who reported higher and lower subjective well-being were examined. Social connectedness, time spent with friends, and perceived social support were positively correlated with students' subjective well-being, with social connectedness explaining unique variance. Common themes included challenges navigating a new social environment and the importance of family, friends, and professors in providing social support. Students with lower subjective well-being more frequently discussed struggles to make social connections and the trade-off between socializing and succeeding academically, whereas students with higher subjective well-being more frequently described college as providing opportunities to develop meaningful social connections. This study adds new perspectives on the college experience for autistic students and highlights the important role that social connections and support play in their subjective well-being.

The relationship between social experience and subjective well-being in autistic college students: A mixed methods study

Due to increased awareness and advances in early diagnosis and intervention, more autistic college students are enrolling in college and university (Adreon & Durocher 2007, VanBergeijk, Klin, & Volkmar, 2008, White et al., 2017). Several recent studies have examined the unique challenges these students face in multiple domains of college life, including academic functioning, socialization, emotional functioning, independent living skills, and self-advocacy (see Gelbar, Smith, & Reichow, 2014 for review). However, it is unclear how these challenges affect autistic students' subjective well-being, which is considered an important outcome for neurotypical students and students with disabilities alike (Bowman, 2010; Chou, Chan, Chan, & Phillips, 2013; Fleming, Oertle, Plotner, & Hakun, 2017; van der Zanden, Denessen, Cillessen, & Meijer, 2018).

Subjective well-being has been defined as having an affective component, which involves the experience of pleasant and unpleasant affect, and a cognitive component, which involves the judgment of one's quality of life based on one's own self-determined criteria (Andrews & Withey, 1976; Diener, 1994). Although these two components are related, the affective component is thought to reflect responses to immediate factors and the influence of bodily states, whereas the cognitive component (i.e., life satisfaction) is thought to reflect a long-term perspective involving conscious values and goals (Pavot & Diener, 1993). Research suggests that there is a variety of influences on individuals' level of subjective well-being, including social experiences, personality, socioeconomic status, health, and societal resources (Deneve & Cooper, 1998; Diener, Seligman, Choi, & Oishi, 2018). However, while no one factor ensures

subjective well-being in isolation, it appears that positive social relations and experiences are necessary for higher well-being (Diener & Seligman, 2002).

Several aspects specific to the college social experience have been shown to be strong predictors of subjective well-being in neurotypical students across the college years. For example, social connectedness, including the feeling of belonging to the school community and the perception of emotional connection with other students, is associated with subjective well-being in college students, both concurrently (Pittman & Richard, 2007) and over time (Harris, English, Harms, Gross, & Jackson, 2017). In addition, participation in social activities on campus has also been found to be related to subjective well-being (Cicognani, Pirini, Keyes, Joshanloo, Rostami, & Nosratabadi, 2008; Krumrei-Mancuso, Newton, Kim, & Wilcox, 2013), although this finding has not been as consistent (Harris et al., 2017). Finally, there is a large body of work demonstrating an association between perceived social support and subjective well-being among college students (Brannan, Biswas-Diener, Mohr, Mortazavi, & Stein, 2013; Hefner & Eisenberg, 2009; Riggio, Watring, & Throckmorton, 1993). These findings suggest that the social experience may be a particularly important domain of college life to consider for autistic students.

Autistic college students are at particularly high risk for negative social experiences, which may adversely impact their subjective well-being. Impairment in social interaction is a hallmark feature of autism (APA, 2013). In addition, many autistic students experience stigma from peers, professors, and staff related to their social differences and restricted or repetitive behavior (Nevill & White, 2011; White, Hillier, Frye, & Makrez, 2016; Zeedyk, Bolourian, & Blacher, 2018). Thus, many autistic students face social challenges at college, including difficulty with social interaction, making and maintaining relationships, developing social

supports, and the stress of having to navigate a new social environment (Adreon & Durocher, 2007; Beardon, Martin, & Woolsey, 2009; Carrington, Templeton, & Papinczak. 2003; Howard, Cohn, & Orsmond, 2006; Muller, Schuler, & Yates, 2008; White, Elias, et al., 2016).

Autistic college students often desire social interaction and friendship, but may lack the necessary social skills to form and maintain such relationships (Adreon & Durocher, 2007; Carrington et al. 2003; Howard et al. 2006; Muller, Schuler, & Yates, 2008). Feelings of isolation, loneliness, and longing for emotional intimacy and friendships are common (Muller, Schuler, and Yates, 2008), and have been shown to be related to decreased well-being (Mazurek, 2014). However, while social participation can protect against stress for neurotypical students in college (Rayle & Chung 2007), social activities may actually increase feelings of stress in autistic students due to their restricted interests and difficulty with establishing social networks (Glennon, 2001). For example, a recent qualitative study in Belgium found that autistic college students identified a desire for social contacts, yet found them exhausting (Van Hees, Moyson, & Roeyers, 2014). Further, low levels of social support have been identified as a significant concern for autistic students (White et al., 2016), particularly given research indicating that a lack of perceived social support from family, friends, and classmates is associated with increased loneliness in autistic secondary students (Lasgaard, Nielsen, Eriksen, & Goossens, 2010). Indeed, concerns about the loss of social support from their family is a common theme among college-bound autistic students (Lambe et al., in press) and autistic students report experiencing a reduction in their social support after they transition to college (White, Elias, et al., 2016).

Taken together, these findings imply that the feelings of isolation, challenges with social participation, and low levels of social support perceived by autistic college students can make the transition to college particularly challenging and may result in low subjective well-being.

However, this link has not been made explicit in previous research. Additionally, most research has focused on the social challenges experienced by autistic college students, while significantly less work has focused on ways in which students have been successful. Van Hees et al. (2014) found that many autistic students had developed strategies for meeting the new social demands of college, and a number of students indicated that social interactions with peers were actually easier in college than in high school, due to shared interests in fields of study. Thus, this study aimed to understand how the social experience, both negative and positive, is related to autistic college students' subjective well-being. Specifically, this study examined: 1) the relationship between autistic college students' social experience (social connectedness, social participation, and perceived social support) and their subjective well-being; and 2) similarities and differences in the lived social experience of college students with low and high well-being.

Method

Methodological and Theoretical Approach

This mixed methods study utilized a convergent design with greatest emphasis on qualitative data (QUAL + quan), and was aligned with best practices in mixed methods research methodology for quality of life research (Klassen, Creswell, Plano Clark, Clegg Smith, & Meissner, 2012). Information was gathered through an online survey and a semi-structured follow-up interview. A mixed methods design allowed for a more pragmatic and comprehensive understanding of the social experience of autistic college students. Quantitative methods provided information about the relationship between different aspects of the social experience and subjective well-being, while qualitative methods provided deeper insight into participants' social experiences.

Participant Recruitment

Participants were recruited via disability resource centers at degree-granting colleges and universities in Michigan, Ohio, and Indiana. Twenty-eight colleges and universities, both public and private, were contacted, including doctoral, master's, baccalaureate, and associate's programs. Twelve universities, primarily public, doctoral universities, agreed to distribute the information directly to autistic students on their caseload (average: 40.8 students) to protect their identities. Autistic participants who had identified themselves to their college's disability resource center self-selected into the study after receiving this information. Eligibility criteria included: 1) having an autism diagnosis, 2) being registered with the disability resource center, 3) being enrolled in a degree-seeking program that was not strictly online, and 4) providing informed consent. The Michigan State University Institutional Review Board approved this study.

Participants

Forty-two students participated in the online survey; twenty-three participated in the follow-up interview. Three participants chose to discontinue the interview, leaving a total of 20 participants for analysis. Participants who opted to complete the interview were comparable to those who completed the survey in terms of overall subjective well-being, age, GPA, and autism symptomatology. See Table 1 for a description of participant characteristics.

[Table 1.]

Measures

Online Survey. The online survey collected information about student characteristics, as well as subjective well-being, social connectedness, social participation, and perceived social support using a combination of previously validated measures and measures developed for this study.

Student Characteristics. Students were asked to report their age, gender, race/ethnicity, educational background, living arrangements, and GPA. Students also completed the *Autism-Spectrum Quotient* (AQ; Baron-Cohen, Wheelwright, Skinner, Martin, & Clubley, 2001) as a measure of their autistic symptomatology. The AQ is a 50-item survey that measures autism symptoms in adults. The AQ includes questions about social and communication skills, attention to detail, imagination, and tolerance of change. Participants rate questions from 1 (definitely agree) to 4 (definitely disagree). Scores are dichotomized into a 0 or 1 and summed to produce an overall AQ score, with higher scores indicating more autistic symptomatology.

Subjective Well-being. Students completed the *Satisfaction with Life Scale* (SWLS; Diener, Emmons, Larsen & Griffin, 1985). The SWLS is a widely used measure assessing the cognitive component of subjective well-being. The SWLS has 5-items that focus on one's global judgment of his or her life rather than satisfaction with specific domains (Diener et al., 1985). Items are rated on a 7-point scale with higher scores representing higher well-being. The SWLS has strong psychometric properties, and has been used in research with neurotypical college students and adults, as well as those with disabilities (e.g., Pavot & Diener, 1993; Smedema et al., 2015), including autism (Griffiths et al., 2019). Cronbach's alpha was .89, indicating good internal consistency. As our data was normally distributed with a similar mean to the SWLS

original normative data, a median split was used create a higher subjective well-being (HSWB; n=10) and lower subjective well-being (LSWB; n=10) group for the qualitative analyses.

Social Connectedness. The 4-item *School Connectedness Scale* from the *Revised College Student Subjective Well-being Questionnaire* (Renshaw, 2018) was used as a measure of the degree to which participants felt socially connected at their college or university. Participants rated the items on a 7-point scale from strongly disagree to strongly agree. Items included: 1) I feel like a real part of my college; 2) People at this school are friendly to me; 3) I can really be myself at this school; and 4) Other students at this school like me the way I am. Cronbach's alpha was .83 for the scale, indicating good internal consistency.

Social Participation. Participants were asked to rate how often per week they spend time: 1) participating in school clubs or other organized activities; 2) participating in sports (club, IM, or varsity); 3) hanging out with friends/going out/socializing; and 4) doing hobbies by themselves. Participants rated their participation on a 5-point likert scale ranging from 1 (never) to 5 (more than 5 times per week).

Perceived Social Support. The *Family Support Scale* (FSS; Dunst, Jenkins, & Trivette, 1984) lists several sources of social support and asks participants to rate how helpful the listed supports are from a scale of 1 (not helpful) to 3 (very helpful) or not applicable. The scale was modified by listing 9 sources of social support that are more applicable to young adults, rather than families (e.g. immediate family, romantic partners, religious organizations, school personnel, professional support). Items were summed to produce an overall score. Cronbach's alpha for the scale was .62, indicating adequate internal consistency.

Semi-structured Interview. The interview included three broad topic areas: 1) the participants' experience during their transition to college; 2) the services they were offered; and

3) their participation in social activities. To enhance participation in the interview (Haas et al., 2016), participants were given the option to complete the interview via text message, email, or telephone. Regardless of chosen interview format, all interviews followed a standard interview format and progressed in the same way. Ten participants chose to be interviewed by phone, four by text message, and six by email. One participant switched from email to phone mid-interview. Interviews varied in length depending on the format of the interview, with phone interviews averaging about 6023 words, text interviews averaging 2994 words, and email interviews averaging 4335 words.

Data Analysis

Quantitative Analysis. Continuous variables were inspected for normality using the Shapiro-Wilk test. Age and perceived social support were both found to be non-normally distributed; thus, non-parametric tests were used for analysis of these variables. Age was also found to have an outlier; thus, analyses involving age were run both with and without the outlier. Descriptive statistics were used to characterize the sample, the amount of time students reported participating in different types of social activities, and how helpful they rated the different forms of social support they receive. Correlations were used to examine the relationship between subjective well-being, student characteristics (age, gender, race/ethnicity, GPA, autistic symptomatology), social connectedness, different types of social participation, and perceived social support. Finally, a hierarchical regression was used to examine the degree to which the social experience variables predicted well-being after controlling for relevant student characteristics.

Qualitative Analysis. Thematic analysis (Braun & Clarke, 2006) was used to analyze the qualitative interviews. An inductive approach was employed, identifying themes based on

their semantic content, within an essentialist paradigm. The first and third authors familiarized themselves with the transcripts and then independently generated a list of potential codes. These codes were discussed and refined using an iterative process, and the finalized codes were used by the first and third author to consensus-code all of the transcripts using Dedoose. Next, all authors independently reviewed the transcripts with their assigned codes, and then met to collate and organize the codes into initial themes. Themes were refined through multiple meetings with all of the authors in order to identify patterns across the dataset. Finally, theme frequency (the percentage of participants endorsing a theme) was examined to identify similarities and differences in the lived social experiences of autistic students with higher and lower subjective well-being.

Mixed Methods Analysis. Joint displays of the quantitative and qualitative data were independently developed by members of the research team to encourage a variety of potential ways to integrate the data. New versions were created based on discussion and additional revisions before a final structure was chosen that the team felt best represented the key findings.

Results

Quantitative Results

Social Participation. On average, students reported spending the most time doing hobbies by themselves (M=4.21, SD=1.05), a moderate amount of time hanging out with friends (M=3.24, SD=1.34) and participating in school clubs or organizations (M=2.48, SD=1.23), and the least amount of time participating in organized sports (M=1.45, SD=.97).

Perceived Social Support. Immediate family, friends, other relatives, and school personnel were the most frequently endorsed forms of social support. Social support from

immediate family was perceived as the most helpful. While relatively few individuals had romantic partners, those who did tended to identify them as very helpful as well. See Table 2. [Table 2.]

Predictors of Subjective Well-being. Of the student characteristics, only age was correlated with subjective well-being (r=-.47, p=.008), suggesting that older participants reported lower levels of well-being. When the outlier for age was removed, the correlation between age and well-being remained significant (r_s=-.36, p=.02). Social connectedness (r=.67, p<.001) and perceived social support (r_s=.37, p=.017) were both positively correlated with subjective well-being. Of the different types of social participation, only time spent hanging out with friends was associated with well-being (r_s=.39, p=.011). These three variables were entered into the second step of a hierarchical regression controlling for age. The final model was significant, F(4, 41)=8.67, p<.001, and explained 48% of the variance in subjective well-being. In the final model, only social connectedness explained unique variance in well-being, β=.59, t=3.61, p=.001. The finding was similar when the outlier for age was removed.

Qualitative Results

Difficulty navigating a new social environment. Students in both higher and lower subjective well-being groups reported that it was difficult for them to navigate the new social environment of college due to changes in social expectations and increased amount of socialization (HSWB=9, LSWB=8). For example, students described the challenges with having to continually meet new people and initiate interactions. One student shared that "*The most difficult thing about this social transition has been getting up the courage to introduce myself […] I'm a very soft spoken person and very shy in general, so that adds another layer of*

difficulty to everything else." While not as common, some students expressed that you had to be social to succeed, including networking and self-advocacy, which was perceived as stressful.

Other students indicated that it was difficult to understand the social cues that were different in college. For example, "*You don't really understand all the little social cues or social little nuances or little rules […] figuring out all those little things and that was hard at first.*"

Students also experienced a decreased sense of privacy and a lack of time to be alone, because they are always around other people either in classes, dorms, or on campus. While some students continued to experience these new social expectations as challenging, others began perceiving them positively with time.

> *"…When I got to college it was a much more social environment…And at first, I wasn't really used to it. I didn't really like it at first because, I mean, I have a roommate so I'm like talking to someone 24/7…And I didn't always like that. But I quickly got used to it and, you know, now I really like it, and now it's kind of lonely, when my roommate's gone."*

Sometimes, the social challenges were more related to a lack of familiarity and the isolation or homesickness that many students feel when starting college. For example, "*I went to a new city and a new school alone […] I think that would make anyone's transition harder."*

Struggle to make social connections. Many students discussed struggling to feel connected with their peers and expressed a desire to have more meaningful relationships. This theme was more than twice as common among students with lower than those with higher subjective well-being (HSWB=4, LSWB=9). In addition, the ways in which students with lower and higher subjective well-being talked about this struggle differed. Students with higher subjective well-being discussed this in terms of a desire to find a romantic partner or wishing

they had been more social when they started college, although they were generally content with their friendships currently.

In contrast, students with lower subjective well-being often talked about not having the skills to develop meaningful relationships, lacking confidence in their social skills, or feeling like forming meaningful relationships was not possible for them. For example, one student with lower subjective well-being shared that they "*would prefer to have some friends, but uh, I don't know how people go about making them*."

Others felt that they were putting a large amount of effort into their relationships before finding something that stuck. For example, one student shared that it is "*just throwing all those darts at the dart board so to speak and seeing if anything hit the bullseye. Which thankfully eventually something did. But, and it took a lot of effort on my part. It took a lot of effort*."

Trade-off with academics. A number of students described how the additional effort to form relationships resulted in trade-offs with academics (HSWB=2, LSWB=8). For many, mostly students with lower subjective well-being, these trade-offs prevented them from pursuing the relationships they may have wanted. For example, one student shared that "*Sometimes I do wish I had a larger social circle of friends, but I also know that like the amount of energy that I can invest in relationships is only so much.*" For these students, the time and effort required to establish relationships was a substantial barrier to making friends.

Other students expressed that they were content with limited social relationships because they viewed academics, not social experiences, as the primary reason they were at college. One student shared that they are "*at [university] to get my degree, so that is my main focus. I am not worried about missing out on events because those things won't get me to where I want to be, therefore, they are not my priority*." These students were not concerned about participating in the

social experience that were available in college, because they placed a greater value on the academic experiences. However, most of these students also reported lower overall well-being.

Opportunity to develop meaningful social connections. Students also mentioned things that were positive about the college social experience and described college as an opportunity to develop meaningful social connections, often for the first time. This theme was more common among students with higher subjective well-being (HSWB=7, LSWB=4). Students talked about how increased social contact, such as in class or the dorms, is a part of the college experience which made it easier to find friends. They also indicated that peers were generally friendlier and more open to friendships, compared to high school, because "*everyone else is in the same boat.*" One student shared that:

> *"I generally found that when you try to talk to people and try to start a conversation they were, people were generally nice, like they wanted to know you too. They might be like 'Hey wanna go do this, wanna go do that?' So I think overall there's still people you'll meet that are really friendly and will want to hang out with you at some point."*

Students also commented that there are simply more individuals who are similar to them in a college environment: "*There are more people inclined towards nerd-dom than in high school and that has helped*." Students, mostly those with higher subjective well-being, shared that they were able to find others who shared their interests by participating in student organizations. For example, one student stated: "*There are several clubs that were interesting to me on campus that I was able to join and find like-minded people.*" Given the increase in social contact and general tendency to find more like-minded people, students shared that making friends was easier for them at college because "*with so many people in the university, there's bound to be a group that shares your interests*."

Overall, students with higher subjective well-being were more likely to feel integrated and supported during their time in college. And even though they experienced similar challenges as students with lower well-being, they expressed their appreciation of the social experiences they encountered in college. See Table 3 for a joint display for social connectedness and social participation.

[Table 3.]

Family as significant source of social support. Social support, especially from family, was identified as important and helpful in the transition to college by most individuals who participated in the interview, and this theme did not differ by level of subjective well-being (HSWB=8, LSWB=7). Many students said that their parents helped them access services and provided tangible support. However, support from parents also had its limitations. One student, a first-generation college student who received their diagnosis after beginning college, said, "*As I am a first-generation college student, my parents did what they could but ultimately were unprepared to help a person transition to college, especially an undiagnosed Autistic one*." In addition, siblings were identified to be helpful in a way that parents could not, particularly when it came to social situations. One participant described how their brother took them to parties and that made the social transition much easier: "*As far as making it easier family support meant the most. Although, I feel for ASD students who don't have siblings or peers their own age. It's hard to relate to parents."*

Friends as positive social support. Friends were also mentioned as an important and helpful source of emotional support by several participants (HSWB=4, LSWB=3). For example, one student-athlete described it this way: *"Just coming up here early and being part of a team*

and having thirty new friends at once to grow with for four years really, really helped. […] And just have having that core group, that stability, can help you grow as a person a lot quicker."

Professors as positive and negative social support. Several students also discussed social support provided by professors (HSWB=6, LSWB=4). Some students reported that professors had provided positive social support, connecting them to extracurricular experiences, helping them better access course material or their accommodations, or supporting their transition to college. One student, who was matched with a faculty member as part of an advising program, noted that the professor was a helpful source of support outside of formal coursework: "*Just having someone who I could sit down with each week and be like okay well here's things that went well, here's things that should be going better, really helped me adapt so to speak*."

Students also felt that some of their professors engaged in negative interactions, especially when it came to using their academic accommodations. In particular, several students noted that the way in which some professors provided their accommodations in class led to social concerns when other students noticed "special treatment." Some students also said that professors made it difficult to access their accommodations in a way that did not interfere with other aspects of the course work, such as missing part of the class content to finish quizzes at the beginning of class. Professors' general lack of understanding of accommodation policies or failure to appropriately accommodate students contributed to student stress. Overall, students were more likely to report the positive aspects of social support provided by professors (n=8) as opposed to negative aspects (n=5). Interestingly, students with higher subjective well-being were more likely to discuss negative experiences with professors than students with lower well-being (HSWB=4, LSWB=1). See Table 4 for a joint display for social support.

[Table 4.]

Discussion

The aim of this study was to gain a better understanding of different aspects of the social experience of autistic college students, and how they relate to their subjective well-being. Specifically, this study explored students' feelings of social connectedness, participation in social activities, and perceived social support. Our findings indicated that higher subjective well-being was associated with a greater feeling of social connectedness at college, more time spent with friends, better integration into shared-interest groups, and greater levels of perceived social support. Thus, it appears that the social experience is closely associated with the subjective well-being of autistic college students, aligning with existing research on neurotypical college students.

Students in this study identified many social challenges associated with their transition to college. Many of the students mentioned the difficulty they experienced making social connections at college. Students who reported that they were able to make and maintain social relationships at college often reported that it had required significant effort and persistence. Additionally, some students in our study saw these social experiences as requiring an unattainable level of effort or coming with an academic cost due to the effort and time required to maintain social relationships. This finding is consistent with the theme of "exhausting, but necessary social contacts" expressed by autistic Belgian college students (Van Hees et al., 2015). In addition, it suggests that the primary challenge that autistic college students face is the need to balance multiple domains of college life rather than difficulty with a single domain (Van Hees et al., 2015). Academic accommodations and supports, including skills training in time management and executive functioning skills, may help autistic students successfully balance their academic responsibilities with their new social expectations (Accardo, Kuder, & Woodruff,

2019; White, Elias, et al., 2016). Such supports would help students succeed academically while also remaining socially engaged (Ashbaugh, Koegel, & Koegel, 2017). This is especially important for students with lower subjective well-being, who were more likely to be socially isolated than their peers.

In our interviews, a number of students indicated that peers were more accepting and friendlier to students on the spectrum compared to high school, and finding others who shared their interests was easier. These factors facilitated their social participation at college, a finding also noted by Van Hees et al., (2015). This finding suggests that for some autistic students, college presents the opportunity to develop positive social connections that were not previously possible in high school.

Our quantitative data suggested that while the amount of time hanging out with friends was positively associated with well-being, participating in organized social activities in college (sports, clubs) was not. At the same time, our qualitative data indicated that organized social activity groups, which included being a part of an athletic team, table-top gaming groups, and other interest-based clubs, assisted students in forming friendships. Thus, participating in shared interest groups may only be related to subjective well-being to the extent that it provides a context for developing authentic and meaningful relationships. Supports that help students locate and engage in meaningful social experiences (e.g. clubs, sports, hobbies) that match their interests may be particularly important in helping students foster new relationships and form authentic friendships (Ashbaugh et al., 2017). In particular, as several students discussed how finding friends made adjusting to college significantly easier, these supports would likely be most successful if they came early in the college experience. However, as there are a number of factors that may influence students' experiences navigating social expectations in college, it is

possible that students from different backgrounds or those who took less-traditional paths to university (e.g., first attending community college, taking gap years) navigate the college social experience differently from students with a more traditional experience. Supports targeting social experiences for these students may need to be sensitive to the unique paths non-traditional autistic students take to get to college.

Students identified family, friends, and school personnel as key sources of social support at college, and the amount of support was positively associated with subjective well-being. This finding supports previous research, in which neurotypical students who felt well supported by friends, family, and their college reported lower levels of academic stress (Rayle & Chung, 2007). Although students in the interviews primarily discussed family and friends as important forms of social support, several students also mentioned professors as providing positive (or in some cases negative) support. This finding highlights the role that professors may play in autistic students' success in college. Faculty mentoring programs, in which a faculty member is paired with an autistic student, may facilitate this support early in the college experience (Accardo et al., 2019). Interestingly, students with higher subjective well-being were more likely to discuss negative interactions with professors, particularly in relation to accessing accommodations. It is possible that students with higher subjective well-being are perceived by their professors as needing less support, and thus their professors are less likely to accommodate them. It is also possible that students with higher subjective well-being are more empowered, and thus more aware of their rights and professors' failure to accommodate appropriately. Regardless of the reason, the implication is the same: professors are likely in need of training in how to work and communicate effectively with a neurodiverse student body. In addition, skills training in

self-advocacy and assertive communication would be a valuable transition support for autistic students who may be learning to self-advocate for the first time.

Limitations

There are several limitations that should be noted. First, while we contacted a variety of colleges and universities, only a small selection of these opted to participate in the study. Specifically, although we contacted both public and private institutions offering programs ranging from associates to doctoral degrees, only 4-year public colleges and universities agreed to send out recruitment information to their students. The inevitable bias limits our ability to generalize our results to students in other post-secondary environments (e.g. community colleges, private colleges). Additionally, we recruited participants through college disability service centers. This method of recruitment excludes students who have not reported their disability to their college. Further, this study's sample was comprised of primarily White men, therefore results may not generalize to people of other racial-ethnic groups and/or gender identities. It is also likely that, due to limitations within our sampling, our results will only generalize to a limited cohort of autistic students who presumably do not have intellectual disabilities. While this study has formed a starting point for research on the social experience and well-being of autistic college students, continued research with representative sampling and larger sample sizes is needed to further understand this currently under-represented population. However, while application to other communities may currently be very limited, this community of autistic college students is growing and becoming more visible year by year. As this community continues to grow, future research should additionally explore more systematically the varied experiences of students transitioning to college (e.g., non-traditional students, students

commuting from home, students who started at community college) and the factors that influence these students' ability to navigate the social expectations of college.

An additional limitation of this study is that interviews of participants who interviewed via different modes (i.e., phone, email, text) showed discrepancies in both the length and density of the interview. Naturally, participants who interviewed via telephone had longer transcript lengths and more in-depth conversations than those who interviewed via text message or email. However, given that participants with social communication difficulties who interviewed via less traditional modes may not have participated at all if only traditional phone interviews were offered, we accept this as a necessary limitation.

Moreover, a notable limitation of this study is the lack of a well-being measure normed for use in autistic individuals. Unfortunately, to our knowledge, no well-being measure has been validated for use in autistic adults. Additionally, our measures of social participation and support were developed or modified for this study, and our social support measure did not allow us to differentiate between different sources of support that might be differentially related to subjective well-being (e.g., family, friends, school personnel; Brannan, Biswas-Diener, Mohr, Mortazavi, & Stein, 2013). Future research that uses well-validated measures of these constructs would be important. Finally, we cannot be sure of the direction of association between social experiences and subjective well-being, or whether they are both the outcome of other factors such as mental health. Longitudinal research that can examine these relationships across the college years is needed.

Conclusions

The college social experience is closely associated with subjective well-being in autistic students. Autistic college students who are more socially engaged and connected with their peers

tend to experience higher subjective well-being than students who are less socially connected. Strategies and supports that can address the unique social challenges of autistic college students (e.g. how to meet people, what to do at parties, how to balance academic and social expectations, how to self-advocate) may be particularly helpful for improving their social experience in college and potentially their subjective well-being.

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Table 1. *Participant Characteristics*

		Full sample N (%)	Interview sub-sample N (%)
Gender	Male	28 (67)	14 (70)
	Female	13 (31)	5 (25)
	Non-binary/genderqueer	1 (2)	1 (5)
Race	White	38 (91)	18 (90)
	Black/African-American	3 (7)	2 (10)
	Not reported	1 (2)	0 (0)
Ethnicity	Hispanic/Latinx	1 (2)	1 (5)
	Not Hispanic/Lantinx	41 (98)	19 (95)
First generation student	Yes	9 (21)	4 (20)
	No	33 (79)	16 (80)
Degree pursuing	Associates	2 (5)	0 (0)
	Bachelors	35 (83)	18 (90)
	Masters	5 (12)	2 (10)
Major	STEM	14 (33)	5 (25)
	Arts and Humanities	7 (17)	3 (15)
	Social Science	14 (33)	8 (40)
	Business/Management	4 (10)	2 (10)
	Other	3 (7)	2 (10)
Living	Home with family	12 (29)	6 (30)
	Dorm	21 (50)	6 (30)
	Apartment/House	9 (21)	8 (40)
		Mean (SD)	Mean (SD)
Age		21.76 (5.02)	22.90 (6.72)
GPA		3.21 (0.55)	3.32 (0.54)
AQ Score		28.29 (8.12)	26.50 (7.39)
Well-being (SWLS)		21.14 (7.59)	21.65 (7.61)

Table 2. *Forms of social support endorsed by students and their perceived helpfulness.*

Forms of Support	Support endorsed	Perceived helpfulness*
	n (%)	M (SD)
Immediate family	41 (98)	2.56 (.63)
Friends	37 (88)	2.08 (.55)
School personnel	35 (83)	2.09 (.70)
Other relatives	33 (79)	2.00 (.71)
Professional support	29 (69)	2.24 (.79)
Social groups/college clubs	26 (62)	1.96 (.72)
Co-workers	21 (50)	1.67 (.66)
Romantic partner/significant other	15 (36)	2.47 (.64)
Religious organizations	13 (31)	2.08 (.76)

* Mean for participants who endorsed using that form of social support.

Table 3: *Joint Display for Social Connectedness and Social Participation*

Quantitative Data (n=42)	**Mean (SD)**	**Correlation with Well-Being r (p)**
Social Connectedness (CSSWQ-R; 1=strongly disagree; 7=strongly agree)	4.86 (1.33)	.67 (<.001)
Social Participation (1=never; 5=more than 5 times per week)		
Participating in school clubs or other organized activities	2.48 (1.23)	.178 (.26)
Participating in sports (Club/IM/Varsity)	1.45 (0.97)	-.041 (.80)
Hanging out with friends/going out/socializing	3.24 (1.34)	.389 (.01)
Doing hobbies by yourself	4.21 (1.05)	-.098 (.54)

Qualitative Themes	**HSWB (n=10)**	**LSWB (n=10)**	**Representative Quotes**	**Interpretation**
Difficulty navigating a new social environment	9	8	*"The hardest part [of college] was all of the social expectations, which I still struggle with today. You're expected to know people, for career opportunities or otherwise. Even in casual situations, the entire campus culture is designed around doing things with your friends. I've had a few breakdowns in my time mainly due to this stress."* [LSWB]	Autistic students experience similar social challenges during the transition to college as NT students, but more pronounced or prolonged. Social success is often paired with a significant effort or persistence by the student.
Struggle to make social connections	4	9	*"I've always found it hard to form those kinds of attachments to people. It's hard enough to find people that I share common interests or personality traits with. If I do somehow find someone like that, then I usually don't have the confidence that they would want to see or hang out with me again."* [LSWB]	Students with HSWB feel more socially connected and spend more time with friends. Students with LSWB struggle more to form friendships.
Trade-offs with academics	2	8	*"I'm kind of like laser-focused on my studies [so it's] hard to kinda try to redirect my attention to other [social] stuff like that. Especially when I don't have a lot of experience doing that sort of thing."* [LSWB]	The time and effort required to pursue and maintain friendships isn't always possible due the academic demands of college. The primary challenge for autistic students is creating a balance across social and academic domains of college life.
Opportunity to develop meaningful social connections	7	4	*"I saw college as a fresh start where I could really kind of find a home for myself so to speak. I sort of went in mentally pushing the reset button. Like okay, here's a new chance to really get things going. And I mean, it took time. It took a couple of false starts, but I eventually found a stable group of friends and I couldn't be happier right now."* [HSWB]	Formal social activities and shared interest groups provide a space for students to form friendships, which may positively affect well-being.

HSWB=high subjective well-being; LSWB=low subjective well-being; NT=neurotypical

Table 4: *Joint Display for Social Support*

Quantitative Data				**Mean (SD)**	**Correlation with Well-Being r (p)**
Modified Family Support Scale (Possible range = 0-27)				12.76 (4.64)	.33 (.03)
Qualitative Themes	**HSWB (n=10)**	**LSWB (n=10)**	**Representative Quotes**	**Interpretation**	
Family as a significant source of social support	8	7	*"My parents helped me through the process of understanding how a college schedule could work, how classes are scheduled, what to register for to graduate with my preferred degree, stuff like that."* [LSWB] *"Honestly, as far as social situations are concerned, going to parties with my brother was the most helpful."* [HSWB]	Perceived social support was positively related to overall well-being.	
Friends as positive social support	4	3	*"Once I had that group I really connected with, I don't know if would say it completed me, but it just gave me something I'd never had before. Like a real friend group. […] Once I did finally find that friend group things just got so much easier."* [HSWB]	Family and friends are an important source of emotional and transition support. Students who did not have support from family sought informal support elsewhere, including from professors and friends.	
Professors as positive and negative social support	6	4	*"Of course, there's always the professors who understand disabilities and accommodations - I had a Physical Chemistry class with two professors and they both wrote their cell phone numbers on the top of my exam and told me to call them if I had any questions."* [HSWB] *"I couldn't believe that because [the professor] was basically saying since I want to use my accommodations, I would need to forfeit my ability to ask questions, therefore leaving anything I need to ask a question on blank and getting a lower score […]. I usually never speak up like that, but it was really frustrating to me."* [HSWB]	Students had mixed experiences with professors. Students with higher well-being were more likely to report negative interactions with professors and perceive them as being unaccommodating.	

HSWB=high subjective well-being; LSWB=low subjective well-being