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## Postsecondary Expectations of High-School Students With Autism Spectrum Disorders

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### Abstract

This study examined the perceptions of adulthood among 31 high school students with autism spectrum disorder (ASD). We had two research aims: (1) to report students’ postsecondary expectations in terms of school, work, friendships and living arrangement and (2) to describe how our sample defined adulthood. To better compare our sample’s criteria of adulthood to the criteria traditionally endorsed in secondary schools, we used a directed content analysis approach. Data were derived from a semi-structured interview that questioned students about friendships, activities and the transition to adulthood. The majority of students expected to attain traditional markers of adulthood after high school; however, for some the pathways to achieving these outcomes were narrowly defined and perceived as a rigid, linear process. Independence, maturity and personal responsibility were the most highly endorsed characteristics of adulthood, followed by chronological age and traditional markers. Implications for transition planning and adult services are discussed.

### Keywords

autism; adolescence; transition; emerging adulthood

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The ability to perform adult roles and interact with society is a central component to having a good quality of life (Halpern, 1993). Therefore, the transition to adulthood is a critical developmental period which shapes the trajectories and outcomes of individuals, including those with autism spectrum disorder (ASD). ASD is a lifelong neurodevelopmental condition that is characterized by difficulties in social communication and repetitive or restrictive behavior patterns (American Psychiatric Association, 2013). Today, one in 68 American children have an ASD, a 123% increase from 2002 to 2008 (Wingate et al., 2014), and nearly 500,000 adolescents with ASD turn 18 each year (Autism Speaks, 2012).

While the rising prevalence of adults with ASD led to more research on the transition experiences of these individuals, existing studies often rely on narrowly defined measures of adulthood to indicate whether a transition is successful or not (Henninger & Taylor, 2012). This is problematic because many people with ASD do not attain adult roles as they are traditionally defined. Further, objective standards of adulthood may not align with the postsecondary expectations of adolescents with ASD nor fit with their conceptualizations of adulthood. Because transition outcomes are the guiding framework for the development and evaluation of autism services, we need contemporary conceptualizations of what it means to be an adult.

## Background

Historically, a good outcome for people with ASD involved the achievement of independence and the development of a normal social life (Ruble & Dalrymple, 1996). To help students with disabilities attain a socially normal and independent life, transition services were designed to facilitate the acquisition of normative adult roles as they are defined by broader society. The Individuals with Disabilities Education Improvement Act (IDEA) specifies the transition areas of post-secondary education, employment, and independent living (34 CFR 300.43 (a)). These goals reflect the normative standards of adulthood. Traditionally, a person is considered to be an adult once they complete a series of objective role transitions (or traditional adult roles) marked by: the completion of education, entering the labor force, establishing an independent household, marrying and becoming a parent (Hogan & Astone, 1986; Shanahan, 2000). Despite growing efforts to improve outcomes across these domains of adulthood, extant literature shows that individuals with ASD are less likely to attain these objective transition markers in the years following high school exit compared to individuals in other disability categories and the general population (Anderson, Shattuck, Cooper, Roux & Wagner, 2014; Chiang, Cheung, Hickson, Xiang & Tsai, 2011; Orsmond, Wagner & Cooper, 2011b; Orsmond, Shattuck, Cooper, Sterzing & Anderson, 2013; Taylor and Seltzer, 2011).

Failure to meet transition goals can hinder the establishment of a viable and sustainable adult identity among persons with ASD. Relative Deprivation Theory posits that individuals gauge their own personal successes against some comparative standard, usually co-workers, friends or neighbors (Hardie, 2014). Similarly, young adults' perceptions of their own transition are informed by the timing and opinions of their peer groups (Panagakis, 2014). We expect adolescents with higher intellectual quotients (IQs) to be particularly vulnerable because they are enrolled in general education classes and are often expected to attend college and acquire the same adult roles as their typically developing peers (Adreon & Durocher, 2007). It is important that we understand which standards of adulthood are relevant to today's youth with ASD. However, no studies have assessed which transition markers adolescents with ASD consider to be essential components to achieving adulthood.

Research shows that, in addition to objective role transitions, today's adolescents are sighting nontraditional markers of adulthood as increasingly important to adult status attainment (Arnett, Kloep, Hendry & Tanner, 2011). Arnett (2001) refers to these markers as individualistic criteria of adulthood and qualities of character. *Individualistic criteria of*

adulthood are analogous to components of independence and defined as, “markers of adulthood that represent becoming independent from others and learning to stand alone as a self-sufficient individual” (Arnett, 1998, p. 296). *Qualities of character* are defined as, “qualities that are part of the individual’s psychological and moral identity” (Arnett, 1998, p. 296). Common nontraditional markers found in the general population include: taking responsibility for one’s self, acting mature and making independent decisions (Arnett, 2001; 2004). These findings are salient across cultures (Horowitz & Bromnick, 2007; Macek, Bejcek & Vanickova, 2007; Mayeless & Scharf, 2003; Nelson, 2009) and genders (Aronson, 2008) and are also true for youth involved with child welfare and the juvenile justice system (Munson, Lee, Miller, Cole & Nedelcu, 2013) and parents of individuals with developmental disabilities (Henninger & Taylor, 2014). This has not yet been examined among adolescents with ASD.

To date, there are no studies that have examined how young adults with ASD define adulthood; however, some studies have assessed the postsecondary education plans of these individuals. Camarena and Sarigiani (2009) asked 21 young adults with ASD, ages 12 to 19 years, about their postsecondary educational aspirations and perceived obstacles to college success. Students rated ‘how often they think about the future’ and ‘how much they think about college’ on a scale from one (not at all) to seven (very much). They found that these individuals often thought about what life would be like after high school; students averaged a score of 4.53 in thinking about the future and 3.84 when thinking about college. Approximately 57% of the sample expected to attend a four-year college. Similarly, Fox (2011) asked 16 young adults with ASD, ages 18 to 27, about their expectations for postsecondary schooling. Only one student reported that it was not at all likely that he/she would attend a postsecondary program and 66.7% of students that answered believed it was very likely that they would focus on employment after educational completion. While these studies provide insights into the educational aspirations of adolescents with ASD, they did not examine other transition domains like work, school and friendships.

## Methods

The present study builds upon the existing transition literature by incorporating the perspectives of 31 high school students with ASD. Our study had two aims. The first aim of our study was to describe what students with ASD expected postsecondary life to be like across four transition domains: school, work, friendships, and living arrangement. Our second aim was to report how students with ASD defined adulthood.

## Sample and Interview Procedure

In this cross-sectional descriptive study, 31 students with ASD from Wisconsin (n=22) and Tennessee (n=9) were drawn from two larger, ongoing longitudinal studies of adolescents with ASD (Smith, Greenberg, & Mailick, 2014; Taylor & Henninger, 2015). All study participants from both sites received an independent diagnosis of autism, Asperger Disorder, or PDD-NOS from a medical, psychological, or educational professional. Both samples were recruited through local autism groups, clinics and participant registries. All study participants included in our analytic sample had an intellectual quotient (IQ) of 70 or greater

and were transition-aged youth, meaning they were enrolled in high school at the time of the interview. Further, all participants in our study were verbally fluent (defined as the ability to use sentences with two clauses). The Wisconsin participants completed the Social Communication Questionnaire (SCQ) and met criteria for verbal fluency (Rutter, Bailey & Lord, 2003). Because we did not have comparable data from the Tennessee sample, we assessed for verbal fluency through transcript reviews, in which nine cases were eligible. Our final combined sample was 79% male and 93% Caucasian (Table 1). The average age of the students was 16 years and the majority were in the 11<sup>th</sup> or 12<sup>th</sup> grade. IQs ranged from 70 to 128 as measured by either the Wechsler (Wechsler, 1999) or Stanford Binet V (Roid, 2003) for the Wisconsin and Tennessee samples, respectively. There were no significant differences in race, sex, or household income between the Wisconsin and Tennessee samples.

In both studies, students participated in an in-person interview which was part of a larger study protocol that included questions about friendships, activities, and the transition to adulthood. For the Wisconsin sample, interviews were taken as part of the Time 1 interview, collected before adolescents and parents participated in the *Transitioning Together* intervention. For the Tennessee sample, interviews were conducted as part of the Time 1 assessment, before the students left high school. The questions were constructed by the investigators and were reviewed and tested by teams at both sites in order to reach consensus regarding final wording and ordering. The questions were administered identically in both locations. In each case, questions were given at the end of a larger assessment battery which included cognitive testing and an administration of an ADOS (Lord, Rutter, DiLavore, & Risi, 2001). Both sites maintained a two probe rule for each question wherein the interviewer was able to ask two follow-up questions for clarification or to encourage an expansion of a response. Sites were in regular communication during the course of data collection and monitored transcripts to maintain fidelity of administration. Our analyses focused on five open-ended questions taken from these interviews. The first set of questions asked the respondent what they thought life would be like after they leave high school in terms of work, postsecondary schooling, friendships and living arrangement. The interviewers asked each question separately to ensure answers were collected within each domain. The final asked “what do you think someone has to do to be considered an adult?” Adolescent interviews were videotaped, with consent, and transcribed verbatim to written text for analysis. All transcriptions were imported into NVivo v. 10, a computer assisted data analysis software (CAQDAS) that assists in the process of organizing and coding raw data

## Analysis

Arguably, qualitative methods are optimal for those who “wish to capture the lived experience from the perspectives of those who live it and create meaning from it” (Padgett, 2008, p. 15). Our goal for this study was not to draw inferences, but to describe this population; therefore, we chose fundamental qualitative description as our mode of inquiry. Unlike other forms of qualitative description such as grounded theory and ethnographic studies, fundamental qualitative description produces a complete end-product within itself and is not a prelude to further research studies (Sandelowski, 2000, p.335). Coders also seek descriptive validity rather than interpretive validity during analysis. We used content

analysis, and more specifically directed content analysis, as our analytical approach because content analysis is often used to describe and quantify phenomena (Elo & Kyngäs, 2007). In directed content analysis, the codes are determined before and during data analysis; however, these pre-defined codes do not preclude the possibility of new or emerging themes (Hsieh and Shannon, 2005; Humble, 2009). The approach is sometimes referred to as theory-led thematic analysis (Hayes, 1997; Hendry & Kloep, 2010). This method is best suited for our study because, in addition to inductively coding participant responses, we had pre-defined codes that were informed by past literature. While different codes were applied, the same methods were used to answer both research questions. All researchers took part in the data analysis, independently crosschecked each other's coding schemes and participated in debriefing sessions to discuss emerging themes (Krefting, 1990).

**Aim 1**—We had four pre-determined codes of traditional transition adult roles: the adolescent reported they expected to get a job, leave the parent's home, attend more school or have or keep friends after high school. Before coding, the researchers independently read through the transcripts several times to gain a general understanding of the data. After, the first four authors independently coded the first set of questions that inquired about postsecondary expectations. All coders highlighted and categorized responses into one of three, mutually exclusively categories: (1) the student expected to fulfill a traditional transition role, (2) the student did not expect to fulfill a traditional transition role, or (3) the student did not know what to expect. This process was repeated for each transition domain. Texts within the initial categories were later assessed for emerging themes. Researchers independently reread the transcript several times thereafter and inductively coded for new themes; if a quotation did not fit within the four roles but represented postsecondary expectations, it was coded as a new theme. Once the initial coding scheme was completed for the entire sample, the selected texts were evaluated as a group and a final consensus was reached across codes (Potter & Levine-Donnerstien, 1999). If there was a discrepancy on the inclusion or exclusion of a selected phrase among the first three authors (e.g., two of the three respondents were in agreement), then the fourth author made the final decision.

**Aim 2**—We had three pre-determined categories of adult criteria that were based on past outcome research (Anderson et al., 2014; Chiang et al., 2011; Orsmond et al., 2013). The first category represented traditional markers of adulthood and were defined as: independent living, getting a job, attending more school or getting married or having children. The second category consisted of individualistic criteria of adulthood in line with Arnett's (2001) conceptualization. Coders were instructed to highlight any text that appeared to be related to independence. The third category consisted of qualities of character, in which coders were instructed to highlight texts related to personality characteristics or behaviors. Selected texts were later grouped into subthemes and the same reliability checks mentioned above were applied. Coders reread the transcripts to inductively code for new or emerging themes. To ensure the interviewer accurately interpreted participant responses, questions were reviewed at a follow up session for clarity among 10% of respondents. Refer to Table 2 for a summation of how rigor was implemented in this study.

## Results

### Aim 1

The first set of questions asked adolescents what they expected life to be like after high school. Our findings fell into one of three categories: (1) the student expected to fulfill a traditional transition role, (2) the student did not expect to fulfill a traditional transition role, or (3) the student did not know what to expect after high school. Overall, we found that the majority of students expected to attain traditional markers of adulthood in the years following high school; approximately 90% of respondents expected to attend more schooling, 62% planned to work and 77% had some plan around friendships (Table 3). Only thirteen students (42%) planned to leave the parental home for independent or semi-independent living arrangements.

**School**—Nearly 90% of the students had postsecondary education plans. Among them, 36% of students expected to pursue either a four-year degree or higher and 25% expected to attend a two-year degree or vocational program. Over a third of students (36%) who anticipated continuing on to further education did not specify the type of college they planned to attend. Half of these college-bound students had a specific plan of study or career pursuit in relation to schooling. While there is evidence that college-bound adults with ASD tend to gravitate towards science, technology, engineering and math (STEM) majors, our sample also endorsed fields in the arts, law enforcement and social sciences (Baron-Cohen, Wheelwright, Burtenshaw & Hobson, 2007; Wei, Wagner Hudson, Jennifer & Shattuck, 2014b). Students' chosen fields of study included: psychology, statistics, biology, ocean study, language arts, science, technology of art, biomedical engineering, photography classes, criminal justice, music education, and computer science. Students also specified careers for which they would like to attend school including: diesel mechanic, trucker, artist, videogame designer, writer, taking apart computers, cooking, carpentry, electrician, aeronautics, law enforcement worker and surgeon.

**Work**—Our data suggest that finding a job is an integral component of adulthood. Many of the students hoped to find jobs that had intrinsic meaning, were 'stress-free,' and were 'enjoyable'. Students oftentimes differentiated a job from a profession, defining the former as something that is 'not as specialized', 'pays less' or is 'part-time work'. Respondents characterized a good job as 'low stress' and 'something I can enjoy'. Types of jobs or careers mentioned included: janitor, storm chaser, policeman or SWAT force, cashier, waiter, commercial airline pilot, work in retail, bike or car mechanic, fast food industry, computer engineer and actor. No students expected they would not work after high school. Not depicted in the tables, two respondents planned to stay at their current place of employment while another individual expected to be an apprentice in a trade. One student expected to join the military immediately after leaving high school.

**Friends**—Only 2 participants expected not to have friends and 48% expected to either maintain current friendships or make new friends after high school. The sources of post-high school friendships varied, but there was optimism that college would be associated with new friendships. The retention of current friendships was often contingent on who would be



attending college with the respondent. One individual believed making friends would be easier in adulthood because, “you have a little bit more contact with people and people are more willing when they are older.” Another indicated that friendships would “probably be better than right now” after leaving high school. In contrast, two individuals expected they would not make friends and would “probably just be by myself.”

**Living arrangement**—While 43% of adolescents expected to continue to reside in the parental home, 13% of those students planned to move out eventually. Saving money was indicated as a key reason for continuing to reside with parents. Although difficulties with change are a trademark of the autism phenotype, nearly half of our sample planned to relocate out of state and many more planned to move in with friends. Of those planning to leave home, two individuals planned to reside with roommates, three hoped to live alone and five students expected to live with friends or significant others. Students were most uncertain about work and friendships (23%) and least uncertain about postsecondary schooling (3%).

**Emerging themes**—Similar to the general population, the students sampled in this study acknowledged that the transition domains are interdependent: successful attainment of one adult role may be contingent on, or fostered by, the realization of another (Sneed, Hamagami, McArdle, Cohen & Chen, 2007). Students also sequenced transition events, suggesting that the achievement of one role needs to precede the pursuit of another. Postsecondary schooling was at the center of both ideas. Students tended to believe that finding work, making friends and leaving the parental home would be better due to attending college. This is especially true in regards to employment. For example, one student felt that finding a job would be easy after college, stating:

Um, as long as I get into college, and can afford it, and I can take it throughout this whole course I believe that I’ll be fine. It’s just getting that start with college because I believe if you, if I weren’t to go, like if I didn’t make it into college, I feel like I would struggle throughout life. But with college I would have a solid career, depending on whatever I choose to do as an adult.

College was also perceived as a catalyst for forming friendships. One student expected that college-aged peers would be different than their high-school peers stating, “I’ll make new friends on campus and I’m pretty sure things will work out better. I don’t know, people are just less judgmental in college. Or at least that is what I am hoping.” Another individual stated: “That’s part of what college is for, making new relationships and connections for the rest of your life.”

The steps in which one student planned to move out of the parental home was also related to college attendance. Many of the individuals who expected to reside in the parental home after high school planned to use that time to save money and decide where they will be attending college. When asked what they expect life to be like in terms of living arrangement, the students replied:

Probably my parents’ home for a little while, and then after that with like a couple of friends or so in an apartment. In like, you know, in one of those group college apartments. And then like maybe, like a little, like after college, probably have an

apartment of my own. And then if I get a girlfriend or a wife or whatever, and then for like children, I'll probably need to move into a house or that's probably, that's probably the things I need to worry about.

## Aim 2

Similar to the general population, our sample included both traditional and nontraditional adult roles in their definitions of adulthood (Molgat, 2007). Individualistic criteria, qualities of character, and transition roles were all categories in the data, as well as an unanticipated category of chronological age (shown in Table 4). A study conducted by Arnett (1997, 2001, 2004), found that *individualistic criteria* and *qualities of character* were highly endorsed characteristics of adulthood; this was also true of our sample. Individualistic criteria (e.g., financial independence, independent living skills, independent living and not depending on others) were cited by all but one student as important (Refer to Table 4). Character qualities (e.g., responsibility, maturity, acting like an adult and abiding by the rules) were cited by two thirds of students. Responsibility was the most frequently cited quality of character. Adolescents' definitions of responsibility were vague, however; that is, many students stated the importance of 'being responsible' but did not explain what responsibility meant to them. Features of maturity were also loosely defined among the sample although the recognition of others' feelings and ethical concerns were raised in reference to the meaning of maturity. Interestingly, students linked household skill sets (such as washing dishes, learning to do laundry and making meals) to independent living, personal survival and taking care of your own self. In other words, the ability to acquire "higher order" individualistic criteria was contingent on the attainment of independent living skills first.

In contrast to the frequently-mentioned themes of *individualistic criteria* and *qualities of character*, few *transition roles* (e.g., achievement of traditional markers needed to be an adult) emerged in our data with the exception of establishing a romantic relationship (cited by two students; 6.5%) and finding a job (cited by seven students; 22.6%). An unexpected standardized marker of adulthood, *chronological age*, also emerged and was cited by 13 students (41.9%). Eight of the 13 students (61.5%) who identified chronological age as an indicator of adulthood linked age with other markers of adulthood such as: buying a house, not depending on others for help, act like an adult and taking responsibility.

## Discussion

Our sample's definition of adulthood mirrored what is reported in other study samples; students used both traditional and nontraditional criteria in their conceptualization of adulthood and considered independence and personal responsibility to be important indicators. Similar to other adolescents, the students in our sample also had a wide range of vocational and academic interests, varying ideals about friendships and different living arrangement preferences. The diversity of transition goals and general emphasis placed on nontraditional adult roles reinforces the need for individualized transition plans and a general reframing of transition success. These findings have led us to three major conclusions: (1) the attainment of nontraditional adult roles should be incorporated in transition plans and services, (2) secondary institutions need to prepare students for the



uncertainties of adulthood and (3) there is a need for community-based services that help non-college bound students attain employment, living and social transition outcomes.

### **Nontraditional Adult Roles Should Be Incorporated in Transition Plans and Services**

Nontraditional roles were considered to be more important to the adult identity than traditional markers in our sample and should be included in transition plans. Even though students with ASD have difficulties identifying prosocial behavior, the concept of maintaining a moral code was an important adult trait in our sample (Moran et al., 2011; Senland & Higgins-D'Alessandro, 2014). Two students believed that abiding by rules or laws is necessary for adulthood and nine adults reported personal responsibility was important. Becoming independent was another common theme in our sample. Adolescents linked passage into a particular adult role to being independent. Among the students who mentioned independence as a criterion, 30% also endorsed a transition marker (e.g., having a job or a romantic relationship). While the interplay between transition roles and individualistic criteria on adult identity is supported in prior literature, little is known of how this hierarchal sequencing of such criteria impacts the formation of postsecondary expectations (Shanahan, Porfeli & Mortimer, 2005). The interdependency between independence and traditional adult roles highlights the need for interventions that facilitate independence across all transition domains. Interventions designed to promote the independence of adolescents with ASD, such as self-monitoring, management video modeling and work systems, have shown to be effective (Hume et al., 2014).

As noted above, independent living is one of the three goal areas for individualized education plans. Independent living is associated with the acquisition of various domains of independence; individuals who live independently are more likely to run a household, form relationships, and have stronger interactions with parents (Kins & Beyers, 2010) and higher levels of discrete daily living skills also are associated with better outcomes during adulthood (Farley et al., 2009). Unfortunately, deficits in daily living skills are common for individuals with ASD, including those without co-occurring intellectual disability; however, significant growth in these skills is possible during adolescence and young adulthood (Smith, Maenner, & Mailick, 2012). Our data suggest that adolescents with ASD recognize the importance of daily living skills as indicators of adulthood and would benefit, *if not appreciate*, instruction in the high school environment before leaving the parental home. The difficulty that students on the autism spectrum face in completing activities of daily living combined with their awareness of the importance of these activities for adult life, supports the value of continued application of skills training.

### **Secondary Institutions Need to Prepare Students for the Uncertainties of Adulthood**

The unpredictability of adulthood can be challenging for persons with ASD as they are characteristically resistance to change and uncertainty. Although change in routines can be difficult, research shows that individuals with ASD often follow a nonlinear trajectory to adulthood. Nationally, a third of college students with an ASD start school at a two-year college and transfer to a four-year college (Wei et al., 2014a). Employment pathways also vary. In a national study of young adults with ASD, of youth with ASD primarily interested in employment, roughly 10% attended postsecondary schooling up to two years after high

school and then later worked part time and 10.1% of this group worked part time and switched from a vocational training program to college (Wei et al., 2014b). Further, in a sample of individuals with ASD without intellectual disability, Taylor and Mailick (2014) found only 25% were consistently engaged in competitive employment or post-secondary education over a 10 year period, whereas 40% were sometimes engaged in these activities and sometimes not, suggesting that maintaining activities over time may be difficult. Taken together, these findings indicate that multiple transitions and changes in daily routines may be expected for individuals with ASD during young adulthood. However, the students in our sample did not anticipate that such dynamic changes would happen to them. In fact, most students had linear postsecondary plans. Educators should consider how to prepare students not only to achieve their post-secondary goals but also to have coping skills needed for multiple life course transitions.

Eight of the 11 students in our sample who believed chronological age is an indicator of adulthood also endorsed another aspect of adulthood such as: buying a house, not depending on others for help, act like an adult and taking responsibility. This suggests a broad view of the benchmarks of maturity and may reflect how engagement in transition planning (which emphasizes that secondary school services are tied to chronological age), influences thinking about markers of adulthood. It also may reflect literal thinking regarding definitions of adulthood, as many individuals on the spectrum rely on hierarchal thinking and rigid rule-based reasoning (Tarbox, Zuckerman, Bishop, Olive & O'Hora, 2011). Regardless of the possible reasons for the linkages between age and other markers in our sample, it is important to note that the transition to adulthood is taking longer in contemporary society and adult roles are uncommonly met before the age of 21 (Furstenberg, Kennedy, McLoyd, Rumbaut & Settersten, 2004). Transition service providers can help guide the formation of expectations in the context of these normative trends and support realistic goal setting as part of the transition planning process.

### **There is a Need for Community-based Services that Target Non-college Bound Students**

The sequencing of transition events reported for many students in our sample began with the enrollment or completion of college. Although postsecondary schooling was not cited as an important indicator of adulthood, it was central to many students' future plans and was linked with the attainment of other adult roles. Many students felt that they would go to college and then make new friends, leave their parent's home or find a job. The idea that human development is structured through a series of ordered stages (e.g., age-grading) is commonly found among developmental stage theorists (Arnett et al., 2011). Of notable importance is the sequential order in which the individual moves through these stages; one cannot graduate to the next stage until the previous stage is realized (Hogan & Astone, 1986). This expectation of ordered-stages was observed in the participants in our study, with 37% of respondents discussing events as being sequenced. Although this is not surprising, the expectation that postsecondary life will be linearly formed and sequenced could have negative consequences if it is difficult for continuity to be achieved. Based on past research we know that many individuals with ASD do not enroll in postsecondary education (Shattuck et al., 2011a). Similarly, 70% to 80% of individuals with ASD continue to show marked social impairment into adulthood (Farley et al., 2009; VanBergeijk, Klin & Volkmar,

2008) and many young adults continue to experience social isolation in college (Madriaga, 2010; Welkowitz & Baker, 2005). In hopes to increase the enrollment and retention of students with ASD, colleges are finding new ways to provide social supports to students with ASD by including peer mentors and support groups and introducing etiquette courses into university settings (Adreon & Durocher, 2007; Farrell, 2004). However, there are fewer social supports available to young adults not enrolled in school (Tobin, Drager & Richardson, 2014). The Aspirations program, a social skills groups designed for 18 to 30 year old adults with ASD, and the PEERS intervention, designed for persons 18–23, have shown to positively impact the social outcomes for this population (Gantman, Kapp, Orenski & Laugeson, 2012; Hillier, Fish, Cloppert & Beversdorf, 2007). Further efforts must be made to replicate and disseminate community-based interventions.

## Limitations

There were some limitations to our study. First, due to inclusion criteria, our sample may have higher communication and functional skills compared to other students with an autism spectrum disorder. Therefore, our sample does not generalize to all students with a diagnosis of an ASD. Since students in our sample had similar IQs, communication skills, and educational environments, our findings still generalize to students with ASD without co-occurring intellectual disability that are enrolled in general education courses. The majority of parents in our sample have a bachelor's degree or higher, which may also influence our sample's emphasis on postsecondary education attainment. Second, there is evidence that criteria of adult roles, transition goals, and concepts of adulthood change and develop as the individual progresses through the life course (Salmela-Aro, Aunola & Nurmi, 2007). Our study examined the postsecondary expectations and definition of adulthood through cross-sectional data and cannot capture how these perceptions change during the adult years. Longitudinal analyses may better capture how these perceptions change across time. Third, we did not probe to examine how the person defined different concepts, such as responsibility and maturity. Further, we could not observe the students' predicted probability of an event occurring in adulthood. Finally, the respondents were not asked to rank-order their criteria of adulthood and we were unable to decipher which criterion was most important. Despite these limitations, our study has many strengths. Individuals with ASD display similar yet unique profiles of aspirations; therefore, understanding the hopes and goals of individuals in their own words can inform the transition planning process. Notably, we were able to utilize a theory drawn from typically developing populations to inform the transition planning process for individuals with ASD. The first-person accounts of youth with ASD were a significant strength of the current study.

## Conclusions and Future Directions

While often served under special education and other disability-related policies, individuals with ASD hold for themselves the same expectations as their peers. In addition to the attainment of traditional adult roles, the importance of independence, personal responsibility and maturity was also evident in our study, which suggests transition goals defined in current policies are not comprehensive. To ensure young adults with ASD receive adequate services, nontraditional adult roles should be accepted as viable and meaningful transition goals.

There is also a need to develop and evaluate intervention programs that can help facilitate the attainment of goals, especially among young adults who do not attend a postsecondary education institution. Further investigation of the transition experience of emerging adults with ASD is a necessary step towards improved social policy and program development catered to this growing group of individuals.

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**Table 1**

Sample characteristics of 31 high school students with high-functioning autism spectrum disorders

<b>Variable</b>	<b>N(%) Mean (SD)</b>
Male	22(79) n=28
Caucasian	27(93) n=29
Year in HS	n=27
8	4(15)
9	5(19)
10	2(7)
11	7(26)
12	9(33)
Parent education	n=27
High School/Some College	7 (26)
Bachelors	7 (26)
Post-Bachelors	13 (48)
Household Income	n=26
<39.99k	6 (23)
40k–79.99k	6 (23)
80k–119.99k	8 (31)
>120k	6 (23)
Age (in years)	16.13 (1.5)
IQ	98.74 (15.76)

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**Table 2**

Strategies used to establish rigor

Criteria	How it was utilized in study	Comments
Credibility	Triangulation Peer examination Member Checking	Everyone was involved in data analysis Members discussed themes 10% of the sample were interviewed at a later session to ensure interpretation questions was accurately described
Transferability	Detailed characteristics	Incorporation of standardized autism and IQ scores from reliable sources Homogeneity through stringent inclusion criteria
Dependability	Detailed description of analysis Triangulation Peer examination/debriefing	Refer to Methods Section Refer to “credibility standards” Researchers met to debrief and reach consensus on final themes
Confirmability	Triangulation	Refer to “credibility standards”

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**Table 3**

Postsecondary expectations across four markers of adulthood among 31 high school students with ASD

Transition Domain	Number of students who identified the expectation	
	N	%
<b>Postsecondary Schooling</b>		
Does not expect to attend	1	3
Expects to attend	28	90
Does not know what to expect	1	3
<b>Postsecondary Work</b>		
Does not expect to work	–	–
Expects to work	19	62
Does not know what to expect	7	23
<b>Postsecondary Friendships</b>		
Does not expect to have friends	2	6
Expects to make new friends	7	23
Expects to maintain or change current friends	15	48
Does not know what to expect	7	23
<b>Living</b>		
Expects to reside in parental home	13	42
Expects to leave parental home	13	42
Expects to live with parent then move*	4	13
Does not know what to expect	3	10

\* Not mutually exclusive categories

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**Table 4**

Descriptions, exemplary quotes and frequencies of the criteria of adulthood defined by 31 high school students with ASD

	Descriptions	Exemplary Quote	n reported criteria
<b>Individualistic Criteria</b>	<b>“Markers of adulthood that represent becoming independent from others and learning to stand alone as a self-sufficient individual”</b>		<b>30</b>
Financial Independence	Pay for needs; pay bills	<i>Paying for your own food, and if you're living by yourself, paying for you own house, shelter and clothing</i>	8
Independent Living Skills	Laundry; cleaning; dishwashing; bathing ; eating; sleeping	<i>They have to cook for themselves, they have to wash their clothes sitting out, and they need to take care of themselves. I guess those are the basics.</i>	5
Independent Living	Live independently; have a place of your own; live on your own	<i>And I guess, it is kind of like, when you're an adult, it's kind of like an ability to live independently of, like, what you're used to I guess.</i>	9
To Not Depend on Others	To not ask for help; to not depend on parents; take care of yourself; do things on your own	<i>Being able to support themselves and live life on their own without too much help from outside resources; I think in order to be considered an adult, they need to be able to take care of themselves, because being a teenager or a kid, you are still taken care of by your parents</i>	8
<b>Qualities of Character</b>	<b>“Qualities that are part of the individual's psychological and moral identity”</b>		<b>21</b>
Responsibility	The word responsible or responsibility was quoted; take responsibility for your actions; have more responsibilities	<i>Probably the main thing is you take responsibility with your own actions. No matter what you're doing. When you go into adulthood, your childhood is over.</i>	9
Maturity	The word mature or maturity was quoted; acting mature	<i>To be considered an adult? Well obviously it is nothing physical, I don't think physical is an adult, so to do....maturity level. I don't think there's anything you can possibly do to then to better themselves as a person, ethically of course; If you are an adult, naturally you're supposed to be mature. You need to be able to think rationally. You need to be able to think about how your decisions affect others. You also need to be able to take others into consideration.</i>	6
Act like an adult	Act like an adult; do not act like a child or be childish	<i>Act like an adult; don't do anything childish</i>	4
Rule Abiding	Obey the law; do not break the rules	<i>Be responsible, respectful and follow the rules; obey the law</i>	2
<b>Role Transitions</b>	<b>Performance of adult roles defined through societal norms</b>		<b>9</b>
Job Attainment	Have a job; get a job; go to work	<i>The ability to get a job; getting a job</i>	7
Romantic Relationship	Have a boyfriend/girlfriend; get married	<i>If you have a girlfriend or a boyfriend from either sex you could have a longer relationship</i>	2
<b>Chronological</b>			<b>13</b>
Reached age 18	Reference to a particular age or birthday	<i>Well to be considered an adult you have to be 18</i>	6
Reached age 20			3
Reached age 21			3
Reached age 30			1

Adapted from language used in Arnett (1998)