Published in final edited form as:

J Autism Dev Disord. 2018 September ; 48(9): 2925–2937. doi:10.1007/s10803-018-3545-6.

Parent Expectations and Preparatory Activities as Adolescents with ASD Transition to Adulthood

Laura G. Holmes, Ph.D.[1,2], **Anne V. Kirby, Ph.D.**[3], **Donald S. Strassberg, Ph.D., ABPP**[1], and **Michael B. Himle, Ph.D.**[1]

[1]University of Utah Department of Psychology, 380 South 1530 East BEHS 502, Salt Lake City, UT 84112

[2]Children's Hospital of Philadelphia Center for Autism Research, 2716 South Street, 5th Floor, Philadelphia, PA 19146

[3]University of Utah Department of Occupational and Recreational Therapies, 520 Wakara Way, Salt Lake City, UT 84108

Abstract

Community stakeholders, researchers, and providers are increasingly focused on individual, family, and systemic factors that contribute to positive outcomes for adults on the autism spectrum. Parent expectations for their youth's future are associated with adult outcomes (e.g., employment, school success, independence), yet the mechanism for this effect remains unclear. This study investigated how expectations were related to parent transition-related activities in a sample of 298 parents of adolescents on the autism spectrum (48% female adolescents), stratified by parent-reported IQ (average or above, borderline, or below 70). Parent expectations for the future predicted engagement in some activities intended to enhance adult outcomes when controlling for IQ, gender, age, and household income. The results have implications for how providers discuss expectations and support families in preparing for adulthood.

Keywords

Transition; Adulthood; Vocation; Parents; Gender

Adult outcomes for individuals with autism spectrum disorder (ASD) are of great concern for families, practitioners, policy makers, and individuals with ASD. Studies have shown that many individuals with ASD achieve limited independence in adulthood, are unemployed or underemployed with low hours and wages (Carter et al. 2012; Cimera and Cowan 2009; Roux et al. 2013), are less likely to participate in post-secondary education (Eaves and Ho 2008; Shattuck et al. 2012), are socially isolated (Howlin et al. 2013; Liptak et al. 2011), and need ongoing support in daily activities (Farley et al. 2009; Taylor and Seltzer 2011).

Address all correspondence to: Laura G. Holmes, Address: 2716 South Street, 5th Floor, Office 5192, Philadelphia, PA 19146, Phone number: 267-216-8680, grahamholl@email.chop.edu.

Author contributions: LGH conceived of the study, participated in its design and coordination, recruited participants, performed the statistical analyses, and drafted the manuscript. AVK conceived of the study, performed and interpreted statistical analyses, and drafted the manuscript. MBH and DSS participated in study design and coordination, recruitment of participants, and helped to draft the manuscript.

Reflecting the need for high levels of support in adulthood, the average yearly costs of community services for an adult with ASD are estimated at $26,500 (Leigh et al. 2015).

Although less than optimal outcomes are common, there is a great deal of variability in adult outcomes in ASD, with few factors serving as consistent predictors. Intellectual functioning has been the most heavily studied predictor of adult outcomes, with studies finding that low IQ is the strongest predictor of poor adult outcomes in ASD (Henninger and Taylor 2013; Seltzer, Shattuck, Abbeduto, & Greenberg 2004). However, there remains considerable variability in adult outcomes even among those with average or above-average IQ (Howlin et al. 2013; Seltzer et al. 2004). Other factors have also been identified as predictors of more positive adult outcomes, though less consistently, including better communication skills and lesser diagnostic severity. Although not included in some discussions of adult outcome, individuals with less socioeconomic advantage tend to have poorer postsecondary education and employment outcomes than individuals with more advantage (Shattuck et al 2012).

Women with autism are receiving increasing clinical, research, and media attention, yet there remain few firm conclusions about gender differences in adult ASD symptom presentation or experiences. For example, some research suggests that women with ASD have less disruptive behavior than men, while other research has noted higher levels of self-injurious behaviors, epilepsy, and social interaction impairment for women (Gray et al. 2012, Farley et al. 2009; Perez & Sevilla 1993). The role of gender in predicting outcomes for adults with ASD has only been minimally explored due to low proportions of females in adult outcome studies (Magiati, Tay, & Howlin 2014), resulting in a high need for research focused on females with ASD.

The Role of Parents in the Transition to Adulthood

Although many individuals contribute to preparing youth for transition to adulthood, including youth themselves and special education providers in high school, much of the burden and stress of preparing youth with ASD to successfully transition to adulthood falls to parents. For example, parents of youth with ASD are often responsible for making critical decisions about what post-secondary activities are most realistic and appropriate for their child (e.g., kinds of supports the youth needs to be successful, if youth will seek higher education or employment opportunities; Lounds et al. 2007). Parents also play an active role in identifying and engaging in activities that can facilitate or impede adolescents' preparation for adult life. For example, evidence suggests that youth with severe disabilities who are required to complete chores at home are significantly more likely to have post-secondary employment after high school (Carter et al. 2012).

Parent expectations for the future have been shown to predict the post-secondary outcomes of individuals with disabilities, including ASD. Broadly, parent expectations are associated with academic achievement (Yamamoto and Holloway 2010) and contribute to family decision-making about the future (Hogan and Astone 1986; Lindstrom et al. 2007). Using data from the National Longitudinal Transition Study-2 (NLTS2), Doren, Gau, and Lindstrom (2012) found that parent expectation for future employment (i.e., paid job: definitely will, probably will, probably will not, definitely will not) was a significant

predictor of later employment for youth combined across multiple disability categories. Carter and colleagues (2012) reported similar findings for youth with severe disabilities. An analysis focused on youth with ASD in the NLTS2 found that parent expectations function as a significant mediator of longitudinal outcomes in the NLTS2 for youth with ASD. Specifically, Kirby (2016) identified that socioeconomic status (i.e., race, household income, and maternal education level) and youth functional status (i.e., academic performance, self-care skills, social skills) significantly predicted parent expectations in adolescence, which then predicted post-secondary outcomes in the areas of employment, independent living, and social participation. Gender was also examined as a predictor of parent expectations, but was not found to significantly predict expectations other than through an indirect relationship between gender and functional performance (Kirby, 2016). Together, these studies suggest that the role of parent expectations in predicting outcomes warrants further study.

Given broader societal differences between men and women in employment status, voting, and household management, parents of daughters and sons with ASD might have different expectations for their youth's future (Fisher, Egerton, Gershuny & Robinson 2007; Schlozman, Burns, & Verba 1999), and these differing expectations could affect parent transition-related activities. In addition to societal differences, practical concerns may play a role in the choices parents make about adolescents' participation in activities not supervised by parents. While people of any gender presentation can be vulnerable to sexual abuse, women and girls tend to report markedly higher rates of sexual victimization than males (Finkelhor et al. 2014). Preliminary evidence suggests that parents of girls with ASD may be more concerned about outcomes like unwanted pregnancy compared to parents of boys (Holmes, Himle, & Strassberg 2016b). Parents must balance promoting autonomy with monitoring youth to ensure safety during adolescence (DiClemente et al 2001; Dishion and McMahon 1998), and parents may choose different activities for sons and daughters based on concerns.

Although several studies have shown an association between parent expectations and adult outcomes in youth with ASD, the causal mechanisms are not well understood. One proposed theory is that parent expectations influence the likelihood and/or degree to which parents engage in preparatory activities (Yamamoto and Holloway 2010). Qualitative research conducted by Kirby (2015) provides support for this theory among parents of youth with ASD. Kirby interviewed parents of youth with ASD about their expectations for the future and each participant described how their expectations were being enacted through their various approaches to preparing for adulthood. To our knowledge, no quantitative study has examined the association between expectations for adulthood (e.g., employment, education, independence, or citizenship) and parent approaches to planning and preparing. However, Holmes and colleagues (2016a) reported that when parents had higher expectations that their adolescent with ASD and intellectual disability would have sex or a romantic relationship, they reported having discussed a greater number of sexuality-related topics with their child. This provides preliminary support for the theory that parent expectations may contribute to adult outcomes by shaping the discussions and activities that families of youth with ASD engage in during childhood and adolescence.

Study Purpose

The goals of the current study were to identify family and youth factors that predict parent expectations for the adult outcomes of youth with ASD, and to examine whether parent expectations predict parents' transition-preparation activities. Through this study, we sought to test one theoretical mechanism through which parent expectations of youth with ASD are associated with post-secondary outcomes, addressing the following aims. Aim 1 was to identify family and youth factors that predict parent expectations for the adult outcomes of youth with ASD. We hypothesized that parents of youth with lower intellectual functioning and more severe ASD symptoms would have lower expectations for adult outcomes, specifically within the domains of financial independence, school attainment, independent living, and citizenship. Aim 2 was to determine whether parent expectations for the adult outcomes of youth with ASD predict parent preparatory activities. We hypothesized that higher parent expectations for adult outcomes would predict greater odds of parents endorsing that they engaged in relevant preparatory activities when controlling for their youth's intellectual functioning, age, gender, and household income. We chose to test relationships between specific expectations domains (e.g., parent expectations that youth will live independently) and relevant activities that would contribute to youth skill-building in this domain (e.g., assigning household chores). It is possible that parent expectations in other domains (e.g., financial independence) predict parent activities that are not directly related to that domain (e.g., assigning household chores). However, we chose to test theoretically plausible, direct relationships rather than exploring all associations between expectations and parent activities in order to decrease the probability of Type 1 error.

Methods

Recruitment and Participants

This research was approved by the authors' university Institutional Review Board. Informed consent was obtained from all individual participants included in the study. As reported in [blinded for review], a subset of participants for the current study (n = 182) were recruited through local and national autism support groups in the United States and were entered into a raffle for ten $40 gift cards upon completing the survey. Our initial recruitment strategy yielded a small sample of parents of female adolescents with ASD (n = 25). In order to recruit a sample that would allow for examination of gender differences and to increase the probability that results generalize to females with ASD, a secondary wave of targeted recruitment of parents of adolescent females (n = 116) was conducted through the Interactive Autism Network (IAN). Participants in this wave were paid $10 for completing the survey, as is typical for IAN recruitment. Due to this targeted recruitment, the gender ratio in this study does not match the population gender ratio of individuals diagnosed with ASD. IAN is a database of parents and individuals with ASD interested in participating in research (Daniels et al., 2012). Parents from both groups were recruited through emails inviting them to complete an anonymous online survey about ASD, parent expectations, and transition to adulthood. Parents were eligible to participate if they reported that they had an adolescent child (ages 12 – 18 years) with a formal ASD diagnosis conferred by a healthcare professional (i.e., a physician, pediatrician, psychiatrist, or psychologist). Of the 308

participants who completed the survey, 10 were removed from analyses because their child scored below the Social Responsiveness Scale-2 cutoff for ASD symptoms. The final sample consisted of 298 parents.

Parent and youth demographic information is provided in Table 1.[1] Parents were predominantly Caucasian females with a median age of 46 years (M = 46.85, SD = 6.24) and median income of 80,000–89,000 (range = <20,000 – >140,000). Most parents reported that they were married or in a long-term relationship (79.2%). Most participants (69.5%) characterized their location as suburban, with fewer reporting urban (16.3%) or rural (13.9%) locations. Less than half of parents (44.3%) reported actively participating in an autism support group. Of note, parents in the support group sample and the IAN sample did not differ in terms of educational level (p = .90), income (p = .11), or religiosity (p = .23).

Parents reported on adolescents who were predominantly Caucasian males with a median age of 14 years (M = 14.36, SD = 1.83, range = 12 – 18 years). There was a slightly larger proportion of younger adolescents (56%, 12–14 years) than older adolescents (44%, 15–18 years). Most youth in this sample were diagnosed with Asperger's syndrome (41.1%) or autism (35.7%), with 11.1% of parents reporting a diagnosis of pervasive developmental disorder – not otherwise specified (PDD-NOS) and 11.4% of parents reporting that more than one of these diagnoses had been provided. Parents reported that youth received these diagnoses at a mean age of 6.1 years (SD = 3.65), with 51.6% diagnosed at or below 5 years of age and 85.4% diagnosed at or below 10 years of age. Parents were asked to report their youth's measured IQ (if known, n = 257) or to provide an estimated IQ (n = 41). IQ was presented in terms of standard scores and official descriptive guidelines (e.g., average, slightly below average or borderline, severe, or profound mental retardation; American Psychiatric Association 2000). Parents who did not know their child's IQ were asked to estimate their youth's overall level of cognitive functioning based on the same descriptive guidelines. Per parent report, 66.1% of the adolescents fell in the average or above average range (IQ = 86 – 116+), 12.8% had slightly below average or borderline IQ (71 – 85), 11.4% had below average IQ or mild intellectual disability (ID; 56 – 70), 5.7% had far below average IQ or moderate ID (41 – 55), and 4.1% had severe or profound ID (IQ ≤ 40). The proportion of parents who estimated IQ was greater for parents of youth with ID than for youth with average or above IQ (above average = 7% estimated, average = 8%, slightly below average or borderline = 21%, below average or mild ID = 24%; far below average or moderate ID = 19%, severe or profound ID = 50%). Most adolescents (64.3%) attended public school and all but three (1.0%) adolescents lived at home with their parents. According to parent report, the majority of adolescents (96%) had begun to show signs of puberty.

ASD symptoms were measured using the Social Responsiveness Scale – 2nd edition (SRS-2; Constantino and Gruber 2012; see Measures section for details). SRS-2 Total Standard Scores (T-scores) ranged from 60 – 90 (*Median* = 81, M = 79.89, SD = 8.52), which is

[1]Please note that a subset of participants (n = 198) have been described in previous research on parent-child sexuality communication [Blinded for review].

consistent with a diagnosis of ASD. Most youth (69.8%) fell within the "Severe" range, with others falling within the moderate range (22.1%), or mild range (8.1%).

Measures

Social Responsiveness Scale – 2nd edition (Parent Report) (SRS-2)—The SRS-2 (Constantino and Gruber 2012) is a 65-item rating scale designed to measure the severity of ASD symptoms, with emphasis on specific aspects of social impairment and repetitive behavior. The SRS-2 provides a total score and five subscale scores (i.e., Social Motivation, Social Cognition, Social Awareness, Social Communication, and Repetitive Behavior). T-Scores are standardized using male and female norms. T-Scores of 60 – 75 are typical for people with ASD and lower support needs, and suggest deficiencies in reciprocal social behavior with mild to moderate interference in everyday social interactions. The measure has acceptable psychometric properties (Constantino and Gruber 2012).

Online Transition to Adulthood Survey—Parents completed a 50-item online survey containing questions about parent and youth demographics, youth ASD symptoms, parent expectations about their youth's future, and actions taken to prepare for adulthood. Demographic questions included those about gender, race/ethnicity, parental education level, and annual household income.

In the parent expectations section (based on Mutua and Dimitrov 2001, and Ivey 2004), parents rated the likelihood of 25 outcomes (e.g., have children, be financially independent, have a job or vocation; see Ivey, 2004 and [citation retracted for blind review] for measure) on 5-point Likert-type scales (1 = "Very unlikely" to 5 = "Very likely"). For each parent, likelihood ratings were summed to create a variable indicating total parent expectations (TPE; range = 25 – 125, $M = 84.13$, $SD = 19.40$) with a higher score indicating higher expectations. Additionally, parents received summary likelihood scores for specific expectations domains (i.e., financial independence, school attainment, citizenship; see Table 2 for items). Parents also rated several sexuality-related concerns on a 5-point Likert-type scale (1 = "Not at all concerned" to 5 = "Extremely concerned"). Concerns about sexual assault included two items indicating parent concern that the youth would be sexually coerced or manipulated by peers, or would be the victim of rape or sexual assault. Parents also rated their concern that their child would experience an accidental pregnancy.

Next, parents endorsed actions they had taken to facilitate their youth's transition to adulthood. Parents endorsed whether their youth had held a volunteer or paid employment position (yes/no) and whether they had talked to their adolescent about their job-related interests, about careers, or about the benefits of having a job. They also endorsed whether they had talked to youth about politics and voting or whether youth had been enrolled in civics courses, whether youth were assigned chores and responsibilities, and whether they had enrolled their youth in a class on adult roles to build independence.

Analytic Plan

Intellectual functioning was separated into three categories (average or above average IQ, borderline IQ, IQ below 70). In some models we utilized only two intellectual functioning

categories (average or above average IQ, below average IQ) to optimize model fit. To address Aim 1, we conducted a series of multiple linear regressions with youth characteristics as the independent variables (IVs) and parent expectations as the dependent variables (DVs). To address Aim 2, we first conducted Pearson Chi-Square tests to identify differences in parent preparatory activities by gender and intellectual functioning, with post-hoc examination of standardized residuals for variables with more than two groups (Sharpe, 2015). Then we conducted a series of logistic regression models with parent expectations for adult outcomes and youth characteristics as the IVs and whether parents engaged in various preparatory activities as the DVs. Due to the exploratory nature of the analyses, no correction for multiple comparisons was applied.

Exploratory Analyses

Based on the results of Aims 1 and 2, exploratory analyses were conducted for parents of adolescent females with ASD to examine other parent characteristics that could account for observed differences in parent activities for male and female youth.

Results

We first compared parents of males and females on youth IQ level, age, and SRS-2 Total T-Score. Male and female adolescents did not differ on parent-reported IQ ($\chi^2(2) = 3.216$, $p = .200$), or child age ($t(296) = 0.737$, $p = .296$). However, females had higher mean SRS-2 Total T-scores than males ($t(296) = -2.230$, $p = .027$, $M_{Male} = 78.85$, $SD = 8.50$; $M_{Female} = 81.04$, $SD = 8.41$). Next we compared adolescents in the average and above, borderline, and IQ below 70 categories on age and SRS-2 Total and subscale scores. Adolescents in the average, borderline, and IQ below 70 categories did not differ in terms of child age ($F(2, 295) = 0.683$, $p = .506$, *partial* $\eta^2 = .005$). Youth with parent-reported average or above IQ and those with borderline IQ had significantly lower SRS-2 Total T-Scores than youth with IQ below 70 ($F(2, 295) = 10.383$, $p < .001$, *partial* $\eta^2 = .066$). Similarly, youth with average or above IQ or borderline IQ were rated as having less severe impairments in Social Awareness ($F(2, 295) = 10.417$, $p < .001$, *partial* $\eta^2 = .066$) and Social Cognition ($F(2, 308) = 4.582$, $p = .011$, *partial* $\eta^2 = .030$). However, parents rated youth with average or above IQ as having less impaired Social Communication ($F(2, 295) = 9.283$, $p < .001$, *partial* $\eta^2 = .059$) compared to youth with borderline IQ, who were rated as less impaired than youth with IQ below 70. A similar pattern emerged for Repetitive Behavior ($F(2, 295) = 14.587$, $p < .001$, *partial* $\eta^2 = .090$). For Social Motivation, parents rated youth with borderline IQ as being less impaired than youth with average or above IQ or IQ below 70 ($F(2, 295) = 5.279$, $p = .006$, *partial* $\eta^2 = .035$).

Youth Factors as Predictors of Parent Expectations

Table 3 shows results related to Aim 1 on youth factors as predictors of parent expectations for adult outcomes. The first regression model examined youth factors (parent-reported IQ, SRS-2 T-score, gender, age) and household income as predictors of total parent expectations. First, parent-reported IQ, SRS-2 Total T-score, and youth gender predicted total parent expectations ($F(6) = 32.074$, $p < .001$, $R^2 = .41$, *Cohen's f* = .69). Total parent expectations were higher for youth with average IQ ($B = .146$, $SE = 2.673$, $p = .031$) and lower for youth

with IQ below 70 ($B = -.340$, $SE = 3.139$, $p < .001$) compared to those with borderline IQ. Higher SRS-2 Total T-scores predicted lower parent expectations ($B = -.365$, $SE = .108$, $p < .001$). Parents of male adolescents had higher expectations than parents of female adolescents ($B = .130$, $SE = 1.753$, $p = .005$). Youth age ($B = -.093$, $SE = .491$, $p = .051$) and household income ($B = -.033$, $SE = .643$, $p = .491$) did not predict parent expectations

Next, a series of multiple linear regressions were conducted to examine how youth and family factors (i.e., SRS-2 Total T-score, youth gender, age, and household income) predicted parent expectations for financial independence, school attainment, citizenship, and independent living (see Table 3). Across models, lower expectations were predicted by lower IQ (IQ below 70, compared with borderline IQ) and higher SRS-2 T-score. Higher expectations were predicted by higher IQ (average or above, compared with borderline IQ) for all models except for citizenship expectations. Youth age was only significant in one model, with older age predicting lower expectations for school attainment. Youth gender and household income did not predict parent expectations.

Parent Activities Promoting Adult Vocational Skills and Independent Living

Table 4 presents chi-square results examining differences in endorsement of parent activities by youth gender and intellectual functioning groups. Males were more likely than females to hold a paid or volunteer work position, to have discussions with parents about future employment, and to be educated about citizenship through classes about civics and discussions with parents about politics and the importance of voting. Females were more likely to participate in an adult roles and responsibilities class. Youth with average or above IQ had a higher than expected probability and youth with IQ below 70 had a lower than expected probability of having a paid or volunteer position. Similarly, youth with average or above IQ had a higher than expected probability of talking about jobs and civic responsibilities with parents, while youth with IQ below 70 had a lower than expected probability of having engaged in these discussions. Youth with borderline IQ were the most likely to be provided with chores and responsibilities. Although over 80% of parents in all three groups reported that their child engaged in these activities, youth with IQ below 70 had a lower than expected probability of having engaged in chores and responsibilities.

A series of logistic regressions were conducted to determine whether parent expectations predicted parent preparatory activities when controlling for youth and family characteristics (see Table 5). Financial independence expectations were found to be a significant predictor of the parent and youth having had discussions about future employment and careers, but not of the youth being employed on a paid or voluntary basis. Expectations about school attainment were examined, but not found significant, as a predictor of the parent and youth having had discussions about future employment and careers. Expectations about independent living predicted whether parents assigned chores and responsibilities or enrolled the youth in courses about adult roles and responsibilities. After controlling for child and family variables, expectations about citizenship did not predict whether parents reported discussing citizenship and the importance of voting with youth. The covariates included in each model (youth intellectual functioning, age, gender, and household income) varied in significance. Parents of older youth were more likely to endorse each activity. Parents of

males were more likely to talk to their child about employment and careers and to have a child with work experience than were parents of females. Notably, parents of females were approximately 10 times more likely to enroll their youth in adult roles courses than parents of males. Parents with higher household income were more likely to report providing their child with chores and responsibilities, but household income did not predict other parent transition-related activities.

Exploratory analyses

Given that male adolescents were more likely to have had volunteer or paid work in the community when controlling for cognitive level and age, we hypothesized that parents with greater concerns about negative sexual health outcomes (e.g., accidental pregnancy, sexual coercion or assault) may be less likely to have daughters who had worked or volunteered. We also hypothesized that parents who were more concerned about negative sexual health outcomes might be less likely to have talked to daughters about careers. We tested these hypotheses in parents of female adolescents in our sample ($n = 147$). To retain adequate power, we conducted logistic regression analyses with cognitive functioning dichotomized by whether youth had parent-reported average or above IQ vs. borderline or below average IQ (see Table 6). Contrary to our hypotheses, parent concerns about sexual assault and accidental pregnancy did not predict whether daughters had held a paid or volunteer position or whether parents talked to daughters about employment and careers.

Discussion

There is a critical need for research on family factors that contribute to optimal outcomes for youth with ASD as they transition into adulthood. Previous research has identified parents' expectations as a significant predictor of vocational and independence-related outcomes. The current study explored potential mechanisms underlying this association. Specifically, we identified youth and family factors that predicted parent expectations for adult outcomes, and tested whether higher parent expectations across different domains predicted greater likelihood of engaging in specific preparatory activities when controlling for child characteristics.

Consistent with a priori hypotheses, more severe ASD symptoms and parent-reported IQ below 70 were significant predictors of lower parent expectations for the future in the areas of financial independence, school attainment, citizenship, and independent living, while average or above IQ predicted higher expectations. This aligns with existing literature suggesting that youth characteristics predict parent expectations in ASD samples (Kirby 2016; Thomas et al. 2017). In addition to intellectual functioning, the equal distribution of parents of males and females in this sample provided a unique opportunity to examine gender differences in parent expectations for the future. Parents of daughters with ASD in this sample reported lower total expectations for the future compared to parents of sons. This is consistent with Kirby's (2016) work using structural equation modeling to examine the association between child characteristics and parent expectations for the future showing that female gender predicted lower parent expectations. However, in that study, the association between female gender and lower parent expectations was mediated by functional

performance (i.e., females with ASD in the sample had lower functional skills). In the current study, males and females did not differ on parent-reported IQ level, but on average parents rated females as slightly more impaired on the SRS-2. However, gender differences remained predictive of parent expectations when controlling for IQ, autism symptom severity, and age, suggesting that gender differences in parent expectations were not an artifact of other youth characteristics. Other factors, such as access to early diagnosis (Giarelli et al. 2010) or services, or culturally-mediated differences in what is considered adult success for men and women may influence parent expectations for their daughters with ASD and should be investigated.

In the current study, parent expectations predicted whether parents and youth participated in some, but not all, of the included transition-preparation activities. For talking about jobs, providing chore and responsibilities, and enrolling youth in courses on independent living, expectations predicted actions over and above child characteristics including IQ, gender, age, and household income. Thus, parent expectations for the future appear to be a small but meaningful contributing factor to the activities parents engage in to prepare youth to transition to adulthood. It makes sense that a parent's expectations about their adolescent's future employability and independence are related to how they talk to their child about careers or encourage their child to work. Parents who believe it is less likely that their child to be employed as an adult may invest more time and energy in different activities (e.g., those that develop adaptive skills) compared to actions focused on employability or financial independence. However, it should be noted that higher parent expectations of students' academic achievement result in higher achievement, including when controlling for a child's prior academic achievement (Davis-Kean 2005; Englund et al. 2004), suggesting that high parent expectations are beneficial for youth. There may be a "goodness of fit" aspect to parent expectations and activities such that parents with expectations that are too low may not engage in activities that could contribute to success in employment or financial independence, while other parents may better serve their children by focusing on supporting them in doing what youth enjoy and what challenges them (e.g., serving in volunteer rather than paid positions) while ensuring access to appropriate adult services.

Additionally, the results of this study indicate that gender affects how parents make decisions about how to prepare their child for adulthood. Specifically, parents reported that males in this study were over two times more likely than females to participate in volunteer or work experiences in the community and parents were 2.5 times more likely to talk about careers and employment with sons, while females were 10 times more likely than males to be enrolled in a class about adult roles and responsibilities. There are at least two potential reasons for this. First, this pattern of results suggests that parents of females may feel more comfortable seeking support and preparatory experiences for their youth in more controlled, safer settings (e.g., classes), whereas parents of males may be more willing to provide their youth with real-world experiences. We hypothesized that gender differences in transition-related activities might be related to gender-specific concerns such as risk for sexual assault or accidental pregnancy, but these hypotheses were not supported. Second, societal norms for male and female roles in adulthood could account for this pattern of findings, particularly if classes on adult roles and responsibilities are perceived to be in the model of home economics courses targeted largely at female adolescents in decades past. According to the

United States Bureau of Labor Statistics American Time Use Survey, males continue to be employed at higher rates and earn more money doing the same jobs compared to women, while women (even those who are employed full time) spend more time than men engaged in child care and household activities (United States, 2017). Societal expectations for male and females with ASD and disability more broadly remain unexamined. Regardless of why these differences in opportunities exist, they could be causing unintended negative consequences for the independence of adult females with ASD. Consistent with this, there is evidence that females with ASD may have more difficulty maintaining employment as adults compared to males with ASD (Taylor and Mailick 2014). Additionally, males with ASD may be losing the opportunity to learn skills of independence that benefit all adults. The results of the current study contribute to a small but growing body of literature about gender differences and ASD (Magiati et al. 2014) and highlight the importance of prioritizing research with females with ASD related to transition and adult outcomes.

Consistent with our hypotheses, parents expected youth with ASD and average/above IQ to be more financially secure, succeed more in school, and to live more independently than parents of youth with borderline IQ or below 70 IQ. One exception to this was in the area of citizenship, as parents had similar expectations that youth with average and borderline IQ would vote and participate in other citizenship activities. Generally, these differences in expectations do not seem to have translated into differences in preparatory activities for parents raising children with average or borderline IQ. Compared to parents of youth with borderline IQ, parents of youth with average IQ were no more likely to report that their child had a job or that they talked about jobs and careers or civics with their child.

Notably, youth age was not related to parent expectations with the exception of expectations for school attainment. Parents of older youth reported lower expectations for school attainment than parents of younger youth. Some research suggests that parents' academic expectations for students with disabilities decrease with age (Masino & Hodapp, 1996), which is not the case for students without disabilities. It is possible that parent expectations for school attainment decrease with age due to students with ASD being enrolled in different academic tracks or classes than students without ASD (e.g., life skills classes) or the communication of teacher perspectives of attainable outcomes during Individualized Education Plan meetings for transition-aged youth. Alternatively, researchers conceptualize parent expectations as dynamic and responsive to students' academic abilities and needs (Goldenberg et al., 2001; Mistry et al., 2009). It is possible that parent expectations for youths' academic achievement change based on how well youth are able to navigate the challenges of high school, which include increased organizational demands, frequent transitions, future-oriented thinking and actions, and heightened social expectations (e.g., group assignments). Longitudinal research would help determine how youth, parent, school, and community variables affect parent expectations and activities related to academic achievement for students with ASD.

Previous literature has demonstrated that socioeconomic status and access to resources play a role in terms of what parents expect their children to accomplish in the future (Davis-Kean 2005). We anticipated that household income, as a proxy for socioeconomic status, would predict parent expectations and transition preparation activities. Many such activities may

depend on the resources of schools and funding for services like vocational training in families' geographic area. Surprisingly, household income did not predict parent expectations or actions in this study. Although there were a range of income levels represented, the median household income in this study ($80–89,000) was markedly higher than median U.S. household income ($56,000). Nationally representative samples with more representation from less advantaged households and other markers of socioeconomic status (i.e., eligibility for free or reduced school lunch, type of employment) might reach different conclusions.

The associations between parent expectations for the future, preparatory activities during adolescence, and adult outcomes raise important issues for healthcare providers, school personnel, and researchers. The meaning of optimal adult outcomes for individuals with ASD is evolving (Henninger and Taylor 2013). It has been suggested that researchers interested in appropriately conceptualizing nuance in optimal adult outcomes (and appropriate preparatory activities associated with outcomes) should consider the fit between an individual and their environment (Halpern 1993). Indeed, a variety of different post-school activities likely contribute to health and happiness for adults (e.g., having friends, contributing to community, earning money, getting married, voting and advocating for public policy, recreation, religious service). To the extent possible given access to services and resources, families likely align their preparatory activities to facilitate adult outcomes that fit with their goals, values, and perception of what is possible. Although youth characteristics play a role in what parents expect their adolescent to achieve as an adult, parent expectations for the future and conceptualization of optimal outcomes for their youth are likely also shaped by school personnel and healthcare providers, who approach this task with their own understanding of the possibility and desirability of various adult outcomes.

Finally, this study included questions about parent expectations and transition-related preparatory activities about citizenship (e.g., voting, being socially responsible and law abiding). Parents of males and of youth with average or above IQ were more likely to educate youth about being a good citizen (e.g., via discussions about voting and politics, civics classes) than parents of females or those with borderline or below 70 IQ. There is little research on inclusion of individuals with autism or developmental disabilities in voting and politics (e.g., Agran et al. 2015). Importantly, neurotypical adolescents' political engagement and participation are influenced by parents' participation, and this effect is stronger for girls than boys (Cicognani et al. 2012), suggesting that parent modeling and discussion of politics and voting is important for developing youth citizenship and advocacy. The political activism of people with disabilities has been critical in the design and implementation of policy and services currently benefitting millions of Americans with disabilities and their families (Campbell and Oliver 1996; Shakespeare 2006). Additionally, citizenship and political participation could be conceptualized as part of a broader movement to support people on the autism spectrum in becoming self-advocates (Test et al. 2005). More research on the experiences of political participation, voting, and citizenship for individuals on the autism spectrum is needed.

This study is limited in terms of cross-sectional methods, recruitment, and questionnaire design. First, data on parent expectations and transition-related preparatory activities were

collected at one time-point, and thus do not allow for inference of causality. It is possible that parent expectations and actions interact in a reciprocal manner over time as parents incorporate information from their child's response to various actions into their expectations for the future, which in turn help them choose activities they believe will be effective for achieving their child's goals. Longitudinal research on parent expectations, actions, and adult outcomes for individuals with ASD is needed to determine whether parent expectations play a causal role in transition activities. Second, parents in this sample were recruited from parent support groups and a database of individuals interested in participating in research. Parents in this sample were predominantly Caucasian, well-educated, and well-resourced individuals with access to the Internet and connections to support groups and research networks. The characteristics of the present sample are important context for the interpretation of these results. Finally, the list of adult preparatory activities was short, and parents likely engaged in many other activities of benefit to their children, particularly youth with co-occurring intellectual disability (e.g., special needs recreation groups where youth can gain valuable adult skills). Additionally, activity engagement was conceptualized as a dichotomy with parents endorsing whether they ever engaged in activities like discussing jobs and careers with their child. Conceptualizing activities in terms of frequency, depth, content, and attitudes conveyed to youth where appropriate would clarify parent preparation for transition to adulthood and would provide a more precise understanding of how activities are linked to adult outcomes. Future research on this topic should include interviews or focus groups with parents and individuals on the autism spectrum to include a broader range of potential activities and outcomes for adults.

Another important note is that some parents in this study needed to estimate their child's cognitive functioning level, and a higher proportion of parents in the borderline and IQ below 70 groups provided an estimated IQ. It is possible that some parents inaccurately reported or estimated their child's IQ or intellectual functioning. Given the inconsistencies between nonverbal and verbal functioning for individuals with ASD and the preliminary differences reported between parents based on their child's cognitive functioning, samples characterized by both cognitive and adaptive functioning would allow for better understanding of differences in parent expectations, activities, and developmental trajectories.

To conclude, the ultimate goal of this research is to support communities in providing evidence-based and patient-centered guidance for families about how to choose among the variety of activities available to best support youth in achieving a high quality of life as adults. Researchers can contribute to this goal by investigating stakeholder perspectives on a range of optimal outcomes, how activities during adolescence (e.g., volunteering, conversations with parents, peer relationships) are associated with these outcomes, and how family environments (e.g., advice from healthcare providers, schools, parent support groups) shape parents' expectations and actions in support of individuals on the spectrum achieving fulfillment as adults. This study replicated previous work on the importance of parent expectations for the future and their actions during adolescence to support positive adult outcomes for individuals on the autism spectrum. This study explored differences in parent expectations for the future for sons versus daughters, and for individuals with borderline intellectual functioning compared to those with average or above IQ and to those with IQ

below 70. There is evidence that parent expectations and transition preparatory activities differ by child gender, and the present study did not explain why this difference may exist. Further research with parents of daughters with ASD is needed, and guidelines for improved recruitment of females with ASD and their families would be helpful (Halladay et al. 2015). Additionally, researchers interested in parent expectations for the future and on adult outcomes may want to carefully consider how to conceptualize heterogeneity in intellectual functioning. There are many different ways to compare individuals with ASD based on intellectual functioning or disability status, and this study provides some evidence that youth with borderline intellectual functioning may not fit well with either youth with average or above IQ (formerly "high functioning") or youth with below 70 IQ (formerly "low functioning"). Finally, this study suggests the need for research on how communities (e.g., public policies, healthcare providers, schools, parent support groups) influence parent expectations. Healthcare providers and school personnel may appreciate evidence-based practice guidance on how to talk to parents and individuals themselves about their expectations for the future, and about the preparatory activities families can engage in to promote a variety of positive adult outcomes for youth with ASD.

Acknowledgements

Anne V. Kirby's research efforts were supported by the University of Utah Program in Personalized Health and the National Center for Advancing Translational Sciences of the National Institutes of Health under Award Number KL2TR001065. The content is solely the responsibility of the authors and does not necessarily represent the official views of the National Institutes of Health.

References

Agran M, MacLean W, & Kitchen Andren KA (2015). "I never thought about it": Teaching people with intellectual disability to vote. Education and Training in Autism and Developmental Disabilities, 50, 388–396.

American Psychiatric Association. (2000). Diagnostic and statistical manual of mental disorders (Revised 4th ed.). Washington, DC: Author.

Campbell J, & Oliver M (1996). Disability politics: Understanding our past, changing our future. Routledge: New York.

Carter EW, Austin D, & Trainor AA (2012). Predictors of postschool employment outcomes for young adults with severe disabilities. Journal of Disability Policy Studies, 23, 50–63.

Cicognani E, Zani B, Fournier B, Gavray C, & Born M (2012). Gender differences in youths' political engagement and participation: The role of parents and of adolescents' social and civic participation. Journal of Adolescence, 35, 561–576. [PubMed: 22032976]

Cimera RE, & Cowan RJ (2009). The costs of services and employment outcomes achieved by adults with autism in the US. Autism, 13, 285–302. [PubMed: 19369389]

Constantino JN, & Gruber CP (2012). Social Responsiveness Scale-2. Los Angeles: Western Psychological Services.

Daniels AM, Rosenberg RE, Anderson C, Law JK, Marvin AR, & Law PA (2012). Verification of parent-report of child autism spectrum disorder diagnosis to a web-based autism registry. Journal of Autism and Developmental Disorders, 42, 257–265. [PubMed: 21468770]

Davis-Kean PE (2005). The influence of parent education and family income on child achievement: The indirect role of parental expectations and the home environment. Journal of Family Psychology, 19, 294–304. [PubMed: 15982107]

DiClemente RJ, Wingood GM, Crosby R, Sionean C, Cobb BK, Harrington K …Oh MK (2001). Parental monitoring: Association with adolescents' risk behaviors. Pediatrics, 107, 1363–1368. [PubMed: 11389258]

Dishion TJ, & McMahon RJ (1998). Parental monitoring and the prevention of child and adolescent problem behavior: A conceptual and empirical formulation. Clinical Child and Family Psychology Review, 1, 61–75. [PubMed: 11324078]

Doren B, Gau JM, & Lindstrom LE (2012). The relationship between parent expectations and postschool outcomes of adolescents with disabilities. Exceptional Children, 79, 7–23.

Eaves LC & Ho HH (2008). Young adult outcome of autism spectrum disorders. Journal of Autism and Developmental Disorders, 38, 739–749. [PubMed: 17764027]

Englund MM, Luckner AE, Whaley GJL, & Egeland B (2004). Children's achievement in early elementary school: Longitudinal effects of parental involvement, expectations, and quality of assistance. Journal of Educational Psychology, 96, 723–730.

Farley MA, McMahon WM, Fombonne E, Jenson WR, Miller J Gardner M, …Coon H (2009). Twenty-year outcome for individuals with autism and average or near-average cognitive abilities. Autism Research, 2, 109–118. [PubMed: 19455645]

Finkelhor D, Shattuck A, Turner HA, & Hamby SL (2014). The lifetime prevalence of child sexual abuse and sexual assault assessed in late adolescence. Journal of Adolescent Health, 55, 329–333. [PubMed: 24582321]

Fisher K, Egerton M, Gershuny JI, & Robinson JP (2007). Gender convergence in the American Heritage Time Use Study (AHTUS). Social Indicators Research, 82, 1–33. [PubMed: 27330242]

Giarelli E, Wiggins LD, Rice CE, Levy SE, Kirby RS, Pinto-Martin J, & Mandell D (2010). Sex differences in the evaluation and diagnosis of autism spectrum disorders among children. Disability and Health Journal, 3, 107–116. [PubMed: 21122776]

Goldenberg C, Gallimore R, Reese L, & Garner H (2001). Cause or effect? A longitudinal study of immigrant Latino parents' aspirations and expectations, and their children's school performance. American Educational Research Journal, 38, 547–582.

Gray K, Keating C, Taffe J, Brereton A, Einfeld S, & Tonge B (2012). Trajectory of behaviour and emotional problems in autism. American Journal of Intellectual and Developmental Disabilities, 117, 121–133.

Halladay A, Bishop S, Constantino JN, Daniels AM, Koenig K, Palmer K, …Szatmari P (2015). Sex and gender differences in autism spectrum disorder: Summarizing evidence gaps and identifying emerging areas of priority. Molecular Autism, 6, 1–5. [PubMed: 25705365]

Halpern AS (1993). Quality of life as a conceptual framework for evaluating transition outcomes. Exceptional Children, 59, 486–498.

Henninger NA, & Taylor JL (2013). Outcomes in adults with autism spectrum disorders: A historical perspective. Autism, 17, 103–116. [PubMed: 22914775]

Hogan DP, & Astone NM (1986). The transition to adulthood. Annual Review of Sociology, 12, 109–130.

Holmes LG, Himle MB, & Strassberg DS (2016a). Parental romantic expectations and parent-child sexuality communication in autism spectrum disorders. Autism, 20, 687–699. [PubMed: 26408632]

Holmes LG, Himle MB, & Strassberg DS (2016b). Parental sexuality-related concerns for adolescents with autism spectrum disorders and average or above IQ. Research in Autism Spectrum Disorder, 21, 84–93.

Howlin P, Moss P, Savage S, & Rutter M (2013). Social outcomes in mid- to later adulthood among individuals diagnosed with autism and average nonverbal IQ as children. Journal of the American Academy of Child & Adolescent Psychiatry, 52, 572–581. [PubMed: 23702446]

Ivey JK (2004). What do parents expect?: A study of likelihood and importance issues for children with autism spectrum disorders. Focus on Autism and Other Developmental Disabilities, 19, 27–33.

Kirby AV (2016). Parent expectations mediate outcomes for young adults with autism spectrum disorder. Journal of Autism and Developmental Disorders, 46, 1643–1655. [PubMed: 26762113]

Kirby AV (2015). Factors influencing participation outcomes of young adults with autism spectrum disorder (Doctoral dissertation). Retrieved from ProQuest. (3703827)

Leigh JP, Grosse SD, Cassady D, Melnikow J, & Hertz-Picciotto I (2016). Spending by California's Department of Developmental Services for persons with autism across demographic and expenditure categories. PLoS ONE, 11, e0151970. [PubMed: 27015098]

Lindstrom L, Doren B, Metheny J, Johnson P, & Zane C (2007). Transition to employment: Role of the family in career development. Exceptional Children, 73, 348–366.

Liptak GS, Kennedy JA, & Dosa NP (2011).Social participation in a nationally representative sample of older youth and young adults with autism. Journal of Developmental and Behavioral Pediatrics, 32, 277–283. [PubMed: 21285894]

Lounds J, Seltzer MM, Greenberg JS, & Shattuck P (2007). Transition and change in adolescents and young adults with autism: Longitudinal effects on maternal well-being. American Journal on Mental Retardation, 112, 401–417. [PubMed: 17963433]

Magiati I, Tay XW, & Howlin P (2014). Cognitive, language, social, and behavioral outcomes in adults with autism spectrum disorders: A systematic review of longitudinal follow-up studies in adulthood. Clinical Psychology Review, 34, 73–86. [PubMed: 24424351]

Masino LL, & Hodapp RM (1996). Parental educational expectations for adolescents with disabilities. Exceptional Children, 62, 515–523.

Mistry RS, White ES, Benner AD, & Huynh VW (2009). A longitudinal study of the simultaneous influence of mothers' and teachers' educational expectations on low-income youth's academic achievement. Journal of Youth and Adolescence, 38, 826–838. [PubMed: 19636784]

Mutua K, & Dimitrov DM (2001). Prediction of school enrollment of children with intellectual disabilities in Kenya: The role of parents' expectations, beliefs, and education. International Journal of Disability, Development, and Education, 48, 179–191.

Perez JM, & Sevilla M d (1993). Psychological assessment of adolescents and adults with autism. Journal of Autism and Developmental Disorders, 23, 653–664. [PubMed: 8106305]

Roux AM, Shattuck PT, Cooper BP, Anderson KA, Wagner M, & Narendorf SC (2013). Postsecondary employment experiences among young adults with an autism spectrum disorder. Journal of the American Academy of Child and Adolescent Psychiatry, 52, 931–939. [PubMed: 23972695]

Schlozman KL, Burns N, & Verba S (1999). "What happened at work today?": A multistage model of gender, employment, and political participation. The Journal of Politics 61, 29–53.

Seltzer MM, Shattuck P, Abbeduto L, & Greenberg JS (2004). Trajectory of development in adolescents and adults with autism. Mental Retardation and Developmental Disabilities Research Reviews, 10, 234–247. [PubMed: 15666341]

Shakespeare T (2006). The social model of disability In Davis LJ (Ed.), The Disability Studies Reader, Second Edition (214–220). New York: Routledge.

Sharpe D (2015). Your chi-square test is statistically significant: Now what? Practical Assessment, Research, and Evaluation, 20, e1–10.

Shattuck PT, Narendorf SC, Cooper B, Sterzing PR, Wagner M, & Taylor JL (2012). Postsecondary and employment among youth with an autism spectrum disorder. Pediatrics, 129, 1042–1049. [PubMed: 22585766]

Taylor JL, & Mailick MR (2014). A longitudinal examination of 10-year change in vocational and educational activities for adults with autism spectrum disorders. Developmental Psychology, 50, 699–708. [PubMed: 24001150]

Taylor JL, & Seltzer MM (2011). Employment and post-secondary educational activities for young adults with autism spectrum disorders during the transition to adulthood. Journal of Autism and Developmental Disorders, 41, 566–574. [PubMed: 20640591]

Test DW, Fowler CH, Wood WM, Brewer DM, & Eddy S (2005). A conceptual framework of self-advocacy for students with disabilities. Remedial and Special Education, 26, 43–54.

Thomas PA, King JS, Mendelson JL, & Nelson-Gray RO (2017). Parental psychopathology and expectations for the futures of children with autism spectrum disorder. Journal of Applied Research in Intellectual Disabilities, doi: 10.1111/jar.12337

United States. (2017). American time use survey. Washington, DC: U.S. Bureau of Labor Statistics.

Yamamoto Y & Holloway SD (2010). Parental expectations and children's academic performance in sociocultural context. Educational Psychology Review, 22, 189–214.

Table 1.

Parent and Child Demographics (N=298[a])

	N (%)	
	Parent	**Child**
Gender		
Male	23 (7.8)	157 (52.7)
Female	272 (92.2)	141 (47.3)
Ethnicity		
American Indian/Alaskan Native	5 (1.7)	9 (3.1)
Asian	6 (2.0)	4 (1.4)
Black/African American	3 (1.0)	2 (0.7)
Hispanic	9 (3.1)	6 (2.0)
Multiracial	9 (3.1)	25 (8.5)
Native Hawaiian/Pacific Islander	1 (0.3)	0 (0.0)
White	261 (88.8)	248 (84.4)
Income[b]		
0 – 49,000	56 (19.4)	
50 – 69,000	58 (20.1)	
70 – 99,000	65 (22.5)	
100 – 139,000	55 (19.0)	
140,000+	55 (19.0)	
Education		
Junior High/High School/GED	16 (5.4)	
Some college	43 (14.5)	
Associate degree/Vocational school	30 (10.1)	
Bachelor’s degree	116 (39.1)	
Master’s degree	70 (23.6)	
Professional or Doctoral degree	22 (7.4)	
Type of School Attended		
Public school		191 (64.3)
Private school		15 (5.1)
Homeschooled/Cyber charter/Online		32 (10.8)
Therapeutic school		40 (13.5)
Charter school		12 (4.0)
College		2 (0.7)

Note.

[a]Not all participants answered all questions (range = 294–298). ASD = autism spectrum disorder.

[b]Income levels collapsed from 12 to 5 categories.

Table 2.

Parent Expectations and Concerns

What do you expect your child to accomplish? My child will…
Financial Independence α = .80
…have a secure financial future
…live independently
…hold a job/vocation
School Success α = .83
…be successful in school
…attain highest education possible
Citizenship
…participate in citizenship activities
Independent Living
…live independently
Concerns: I am concerned about…
Pregnancy
…accidental pregnancy
Sexual Assault α = .88
…my child being sexually coerced or manipulated by peers
…my child being a victim of rape or sexual assault

Table 3.

Parent Expectations and Concerns Means and Standard Deviations by IQ Level (*N*=298)

	Average+ IQ *M* (SD)	Borderline IQ *M* (SD)	IQ<70 *M* (SD)
Expectations			
…have a secure financial future	3.37 (1.0)	2.74 (1.2)	2.53 (1.2)
…live independently	3.68 (0.9)	2.87 (1.1)	1.71 (1.0)
…hold a job/vocation	4.12 (0.8)	3.82 (1.0)	2.98 (1.2)
…be successful in school	3.90 (1.0)	3.29 (1.3)	2.63 (1.4)
…attain highest education possible	3.82 (1.1)	3.37 (1.3)	2.74 (1.5)
…participate in citizenship activities	3.44 (1.2)	3.16 (1.3)	2.27 (1.3)
Concerns			
…accidental pregnancy	2.46 (1.2)	3.29 (1.3)	2.29 (1.4)
…my child being sexually coerced or manipulated by peers	2.96 (1.3)	3.79 (1.4)	3.41 (1.4)
…my child being a victim of rape or sexual assault	2.69 (1.3)	3.35 (1.5)	3.57 (1.3)

Table 4.

Parent Expectations by Child and Family Variables (*N*=298)

	Parent Expectations				
	Total	**Financial Independence**	**School Attainment**	**Citizenship**	**Independent Living**
Predictors	**B (SE)**	**B (SE)**	**B (SE)**	**B (SE)**	**B (SE)**
IQ < 70	−0.340 (3.1)***	−0.24 (0.5)**	−0.18 (0.4)*	−0.21 (0.2)**	−.32 (0.2)***
Borderline IQ	Reference	Reference	Reference	Reference	Reference
Average/Above IQ	0.146 (2.7)*	0.29 (0.4)***	0.21 (0.4)**	0.11 (0.2)	.31 (0.2)***
SRS-2 T-Score	−0.365 (.11)***	−0.30 (0.02)***	−0.27 (0.02)***	−0.28 (0.01)***	−.23 (0.01)***
Male	0.130 (1.8)**	0.08 (0.3)	0.07 (0.2)	0.06 (0.1)	.09 (0.1)
Female	Reference	Reference	Reference	Reference	Reference
Age	−0.093 (0.5)	−0.05 (0.08)	−0.13 (0.1)*	0.02 (0.04)	−.07 (0.03)
Household Income	−.033 (0.6)	0.01 (0.1)	−0.06 (0.1)	−0.02 (0.1)	−.03 (0.04)
Model F (*df* = 6)	32.074***	29.822***	14.839***	11.94***	37.27***
R^2	0.41	0.39	0.24	0.20	0.44
Cohen's f^2	0.69	0.64	0.32	0.25	0.80

Note.

*, $p<0.05$

**, $p<0.01$

*** $p<.001$.

SRS-2 = Social Responsiveness Scale, 2nd Edition.

Table 5.

Preparation Activities Differences by Gender and Intellectual Function (*N*=298)

	Paid/Volunteer Position (%)	Talk About Jobs (%)	Talk about Civics and Voting (%)	Chores & Responsibilities (%)	Enrolled in Courses (%)
IQ Group χ^2 (df)	9.41(2) **	95.54(2) ***	55.69(2) ***	8.94(2) *	4.51(2)
IQ <70	21.3	36.1	6.6	80.3	8.2
Borderline IQ	42.1	81.6	47.4	100.0	21.1
Average/Above IQ	42.8	93.3	61.2	88.8	19.4
Gender χ^2 (df)	9.73(1) **	8.16(1) **	4.28(1) *	0.41(1)	44.43(1) ***
Male	46.8	86.4	53.9	89.6	3.2
Female	29.1	73.0	41.8	87.2	32.6

Note.

* $p<.05$

** $p<.01$

*** $p<.001$.

Table 6.

Logistic Regression Results: Parent Expectations as Predictors of Parent Preparatory Activities (*N*=298)

	Parental Preparatory Activities				
	Paid/Volunteer Position	**Talk About Jobs**	**Talk about Civics and Voting**	**Chores & Responsibilities**	**Enrolled in Courses**
Predictors	**OR (95% CI)**	**OR (95% CI)**	**OR (95% CI)**	**OR (95% CI)**	**OR (95% CI)**
PE: Financial Independence	1.1 (1.0, 1.2)	1.3 (1.1, 1.6) **	-	-	-
PE: School Success	-	1.0 (0.8, 1.2)	-	-	-
PE: Citizenship	-	-	1.2 (1.0, 1.5)	-	-
PE: Live Independently	-	-	-	2.0 (1.3, 3.0) **	1.6 (1.1, 2.3) *
IQ<70	0.6 (0.2, 1.5)	0.2 (0.05, 0.5) **	0.1 (0.03, 0.3) ***	Reference	Reference
Borderline IQ	Reference	Reference	Reference	Reference	Reference
Average/Above IQ	0.9 (0.4, 2.1)	2.0 (0.6, 6.5)	1.7 (0.8, 3.6)	3.1 (1.0, 9.2) *	1.2 (0.4, 3.1)
Male	2.1 (1.2, 3.5) **	2.4 (1.1, 5.4) *	1.4 (0.8, 2.4)	1.5 (0.7, 3.4)	0.1 (0.02, 0.2) ***
Female	Reference	Reference	Reference	Reference	Reference
Age	1.4 (1.2, 1.6) ***	1.6 (1.2, 2.1) ***	1.2 (1.0, 1.4) *	1.3 (1.0, 1.7) *	1.4 (1.1, 1.7) **
Household Income	1.2 (1.0, 1.4)	1.0 (0.7, 1.4)	1.1 (0.9, 1.3)	1.5 (1.1, 2.0) *	1.0 (0.8, 1.3)
χ^2 (df)	41.57(6) ***	117.14(7) ***	71.15(6) ***	23.74(5) ***	64.03(5) ***
Cox & Snell R^2	0.14	0.34	0.22	0.08	0.20

Note.

*, $p<0.05$

**, $p<0.01$

*** $p<.001$.

OR, odds ratio. CI, confidence interval. PE, parent expectation. Dashes (-) indicate variables that were not included in the specified model.

Table 7.

Parent Preparatory Activities and Concerns for Daughters (n=141)

	Parental Preparatory Activities	
	Paid/Volunteer Position	**Talk About Jobs**
Predictors	**OR (95% CI)**	**OR (95% CI)**
Concern – Sexual Assault	1.0 (0.8, 1.2)	0.9 (0.7, 1.2)
Concern – Pregnancy	1.0 (0.7, 1.4)	1.5 (0.9, 2.5)
Average/Above IQ	1.3 (0.6, 3.0)	29.7 (9.2, 95.5) ***
Borderline/IQ Below 70	Reference	Reference
Age	1.4 (1.1, 1.8) **	1.8 (1.3, 2.6) **
χ^2 (df)	12.87(4) *	70.41(4) ***
Cox & Snell R^2	0.09	0.39

Note.

*, p<0.05

**, p<0.01

*** p<.001.