Transition to adulthood:

Employment, education, and disengagement in individuals with Autism Spectrum Disorders

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Abstract

Relatively little is known about the pathways youth with Autism Spectrum Disorders (ASDs) take in the transition to adulthood in terms of employment and postsecondary education. Applying life course sequence analysis to a nationally representative sample of youth with ASDs (*n*=120), this study clustered various longitudinal sequences into three typical transition groups in the 6 years after high school exit: primarily focused on postsecondary education (57.4%), continuously or increasingly disengaged (i.e., not employed nor in postsecondary education, 29.0%), and primarily focused on employment (13.6%). All three groups experienced unique struggles in the transition to adulthood. We found variations in disproportionate transition patterns by gender, family income, functional cognitive skills, and conversational skills. Policy implications are discussed.

Keywords: autism, transition to adulthood, postsecondary education, employment, disengaged youth, sequence analysis.

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The period after leaving high school is a time of newly found independence and exploration for many young adults, which often involves the pursuit of education and employment (Arnett, 2000). Given that one out of six U.S. children have developmental disabilities, a number that continues to increase (Boyle et al., 2011), it is important to consider the future prospects of these young adults already living with developmental disabilities and the children and adolescents who are quickly aging into adulthood. Among different developmental disabilities, the prevalence of autism spectrum disorders (ASDs) increased 290% over the last twelve years (Boyle et al., 2011; Centers for Disease Control and Prevention, 2012). However, little is known about the longitudinal pathways that individuals with ASDs follow as they exit high school and strive to enter the world of postsecondary education (PSE) and/or employment, or about the factors that promote a successful transition into these domains.

In 2010, 14.8% of the 18- to 24-year-olds in the US were disconnected or disengaged from employment and education and struggling in their transition to adulthood as indicated by non-participation in education, employment, and military service (Wight, Chau, Aratani, Schwarz, & Thampi, 2010). A 2009 brief using the National Longitudinal Survey of Youth, 1997 cohort found that 60% of youth were consistently connected to employment and/or education for all 6 years between the ages of 18 and 24; the other 40% moved between connection and disconnection to education and employment over time, even if they were ultimately connected by age 24 (Kuehn, Pergamit, Macomber, & Vericker, 2009). It is unclear whether and how these transition pathways of youth in the general population are mirrored for those with ASDs. Identifying those pathways could help family members and educators understand and promote a successful start to the

educational and work lives of these youth. A few studies have addressed the rates of involvement in 2- or 4-year colleges or a career/technical education (CTE) institutions (also referred to as vocational PSE) for youth with ASDs, which varied between 14.0% and 43.9% (Newman et al., 2011; Shattuck et al., 2012; Taylor & Seltzer, 2011). Shattuck and colleagues (2012) researched PSE enrollment up to 6 years out of high school and found that 28.0% and 12.1% had attended a 2- or 4-year college, respectively, and 9.3% had attended a CTE school (Shattuck et al., 2012). Using the same dataset to examine PSE enrollment within 8 years of leaving high school, Newman et al. (2011) reported that 43.9% of youth with ASDs had attended any PSE in that time period.

Several factors have been found to be predictive of the likelihood of participation in PSE: higher functional independence, fewer limitations in functional areas (e.g., conversation, vision, hearing), better high school academic performance (Chiang, Cheung, Hickson, Xiang, & Tsai, 2012; Shattuck et al., 2012; Taylor & Seltzer, 2011), higher income, non-Hispanic/non-African American racial/ethnic status (Chiang et al., 2012; Shattuck et al., 2012), high parental expectations, and a longer time out of high school (Chiang et al., 2012; Shattuck et al., 2012).

Several studies have investigated the employment rates among adults with ASDs and have found substantial variation. These variations were partially due to differences in sample size and composition, the year the study was conducted, and the definition of employment. One study of 19 individuals ages 21-26 found that 73.7% had never had paid employment (Howlin, Mawhood, & Rutter, 2000). In Taylor and Seltzer's 2011 study, 6.1% of participants ages 19-25 had competitive employment, whereas 12.1% and 56.1% were engaged in supported employment and sheltered employment, respectively, findings mirrored by a survey of 70 adults with an average age of 37 (Esbensen et al., 2010; Taylor & Seltzer, 2011). A larger study (n = 500) found that

55.1% of the sample had had paid employment at some time within the first 6 years after exiting high school (Shattuck et al., 2012), but putting their employment rate in perspective, another study found that young adults with ASDs were the second least likely to have held paid employment compared with adults with other types of disabilities (Eaves & Ho, 2008; Newman et al., 2011). The meaningfulness of the employment of many youth with ASDs was called into question by another study, which found that employees with ASDs worked an average of 5 hours per week (Eaves & Ho, 2008). Across studies, correlates of employment have included: the absence of an intellectual disability, fewer autism-related symptoms, greater functional independence, fewer aspects of functioning limited by disability, having been out of high school longer, higher income, and non-Hispanic/non-African American race/ethnicity (Shattuck et al., 2012; Taylor & Seltzer, 2011).

Although this literature is helpful in providing estimates of the achievement of two normative markers of emerging adulthood for the general population—PSE and employment—studies have traditionally considered these domains separately, whereas an individual's life course often involves both pursuits (Branje, Laninga-Wijnen, Yu, & Meeus, 2014; Bureau of Labor Statistics, 2012; Dulmen, Claxton, Collins, & Simpson, 2014; Ranta, Dietrich, & Salmela-Aro, 2014). Further, the studies generally provide point-in-time estimates, rather than identifying the longitudinal pathways followed by young adults with ASDs. To fill this gap in the knowledge base about emerging adults with ASDs, this paper investigates the transitional pathways that they followed using life course sequence analysis. This technique holistically classifies life trajectories across a number of domains, thus providing an understanding of the timing of life changes, and identifies correlates that contribute to following each distinct trajectory. This approach is

particularly effective in studying complex periods of the life course, such as the transition to adulthood (Billari, Furnkranz, & Prskawetz, 2006; Billari, 2001a, 2001b).

This paper is the first known to use this technique to understand the longitudinal transition sequences of youth with ASDs and the factors associated with it. Specifically, this study addresses the following questions: (1) What are the major transition sequences to adulthood in terms of PSE and employment in the 6 years after exit from high school? (2) Are youth demographic and functional characteristics associated with different transition sequences?

Method

Data Source

The National Longitudinal Transition Study-2 (NLTS2) is the largest and richest dataset available that generalizes nationally to the experiences of youth with disabilities as they transitioned out of high school. NLTS2 was conducted by SRI International for the U.S. Department of Education, with data collected from parents and/or youth in five waves, 2 years apart, from 2001 to 2009. Of the initial sample, about 1,100 youth received special education services in the autism category. Each student's eligibility for special education services was determined by the local education agency (LEA) or state-supported special school from which the student was sampled. The criteria for a special education determination of autism may differ from state to state and may differ from the criteria specified in the Diagnostic and Statistical Manual of Mental Disorders (Fourth Edition) (DSM-IV). However more than 95% of children with a school designation of autism also meet DSM-IV-based case criteria in public health surveillance studies (Bertrand et al., 2001; Yeargin-Allsopp et al., 2003).

The NLTS2 two-stage sampling plan first randomly sampled LEAs and state-supported special schools stratified by region, district enrollment, and wealth. Students receiving special

education services were randomly selected from rosters of LEAs or special schools in order to yield nationally representative estimates that would generalize to all students receiving special education services in the designated age range (Wagner, Kutash, Duchnowski, & Epstein, 2005).

Participants

The study reported here focused on a subset of youth who were out of high school at or before the third wave of data collection and thus had at least 3 waves of out-of-high-school data, each 2 years apart. Because younger students recruited for NLTS2 did not have data collected at three points after high school; they are not part of this analysis. We extracted a high school leaving status variable from each wave: (1) still in high school, (2) graduated or completed high school, (3) dropped out of high school, (4) dropped out but eventually completed high school. Those who were in (2), (3), or (4) were included in the sample. There were 120 youth with ASDs who had at least three consecutive waves of data collected after high school (i.e., were out of high school for at least 6 years). To generalize results nationally to youth with ASDs in the early years after high school, this study used a cross-wave weight[1] that is suitable for longitudinal analyses of parent or youth interview data drawn from multiple waves after high school exit (Valdes et al., in press). These weights take into account both various young adult and LEA characteristics used as stratifying variables in the sampling and nonresponse in those strata within and across waves. Unweighted sample sizes are rounded to the nearest ten, as required by the U.S. Department of Education.

The study participants were disproportionately male (86.6%) and white (84.2%). About a quarter of youth were from high-income households (24.9% >$75,000 annual income), 53% had

[1] These cross-wave weights imputed missing data using other instruments or other waves of data (Valdes et al., in press). By using these cross-wave weights, the estimates can be generalized to the youth receiving special education services in the U.S. in a given disability type.

high functional cognitive skills, and 84.2% were reported by parents to have little or no trouble carrying on a conversation. Five percent of youth were 15 years old in 2001, and about one-third (37.6%) were age 18.

Measures

Postsecondary Education. Youth with ASDs who were enrolled in a PSE institution were identified by examining six survey items that asked parents and/or youth if the youth was currently attending or had attended a 2-year community college, a 4-year college or university, or a postsecondary CTE school in the preceding 2 years. PSE status was coded at each wave as: (1) currently attending a 2- or 4-year college or had attended in the preceding 2 years, (2) currently attending a CTE school or had attended in the preceding 2 years, or (3) not attending any PSE currently or in the preceding 2 years.

Employment. Parents and/or youth answered questions about whether youth had a paid job currently or had one in the preceding 2 years (i.e., since the prior interview). They also were asked how many hours per week the youth typically worked at the current or most recent job. From these data, employment status was determined to be (1) not employed, (2) employed part-time (i.e., less than 35 hours per week), (3) employed with unknown intensity, and (4) employed full-time [i.e., 35 hours per week or more]) at each wave. We coded the first group as "unemployed", the second and third groups as "employed part-time", and the last group as "employed full-time."

Possible confounds were measured at wave 1. Demographic variables reported by parents or students' school districts included youth's gender, coded 1 for male; age in years; a dichotomous variable coded 1 for race/ethnicity being African American, Hispanic, or other race/ethnicity (categories were combined as "minority group" into to achieve an adequate sample

size for the analysis); a dichotomous variable coded 1 for having an annual household income of more than US$75,000 (i.e., “high-income family”). Disability background variables included conversation ability and functional cognitive skills. Because language impairment is one of the common symptoms of autism, we included a parent-reported dichotomous variable indicating the youth had “little or no trouble conversing” (compared with “lots of trouble conversing or does not converse at all.” Parents also were asked how well the youth can do the following four tasks without help: tell time on an analog clock, read and understand common signs, count change, and look up telephone numbers and use a telephone. Each item had 4 response categories: 1=not at all well, 2=not very well, 3=pretty well, 4=very well. A summation of the scores, ranging from 4 to 16, produced the overall functional cognitive skills score, with reliability alpha of 0.93. The scale was coded into three levels: low = 4-8, medium = 9-14, and high = 15 or 16.

AnalysisDescriptive analyses of student background characteristics, employment, and PSE were performed using SAS 9.2 (SAS Institute, Cary, NC). The SAS PROC SURVEY Taylor Series Linearization method was used to account for the complex sampling design and to provide the precise estimate of the standard errors. Life course sequence analysis was implemented in the R package - TraMineR (Gabadinho, Ritschard, Muller, & Studer, 2011; Gabadinho & Ritschard, 2013) to describe the longitudinal transition sequences, in the 6 years after high school exit. The high number of distinct sequences present in descriptive analysis were then condensed to three groups based on clustering the sequences from the pairwise optimal matching distances (Gabadinho et al., 2011; Gabadinho & Ritschard, 2013). This approach first assessed the dissimilarity of across time-ordered sequences and then divided them into clusters. The clustering was conducted based on the distances computed from sequences. Sequences that were close to each other were assigned to the same cluster, whereas those that were far away from each other

were assigned to different clusters. It used an iterative process until stable clusters were achieved. This procedure identified the typical transition sequences that were commonly experienced by youth with ASDs. The contribution of sequence analysis for studying transition patterns is its holistic perspective, which considers each longitudinal sequence as a whole; it usefully complements approaches such as event history analysis that focus on a given event (Billari et al., 2006).

There were no missing data in the sequences because the sample was restricted to those with at least three consecutive waves of complete PSE and employment data collected after high school and only used data from waves 2, 3, and 4 to generate a stable sample size for the analysis. However, missing data on the covariates for the sample of 120 youth with ASDs ranged from 0% to 9.1%.

Results

Table 1 shows the prevalence of each of the nine combinations of PSE and employment activities (each having three possible responses) exhibited by youth with ASDs at a given time point. The most common activity up to 2 years after high school exit was “unemployed | not enrolled in PSE”; 34.7% of youth with ASDs fit this category. The percent of youth with this activity dropped to 21.3% of youth from 2 up to 4 years after high school exit but then increased to 30.6% from 4 years up to 6 years after high school exit. The second most common activity at 2 years after high school was “unemployed | college”; 23.8% of youth were not working but were attending either 2- or 4-year college. The percentage decreased to 22.7% and 15.0% at the two later time points. The third most common activity up to 2 years after high school was “employed part-time | not enrolled in PSE” with 12.1%, 10.9%, and 14.0% youth engaged in this activity at three time points. The fourth most common activity up to 2 years after high school was

"employed part-time | college". This activity became more common as youth with ASDs aged, increasing from 11.5%, to 26.8%, and to 29.2% at the three time points after high school exit. Between 2 and 6 years after high school exit, regardless of employment status, an increasing proportion of youth with ASDs attended college (49.7%, 59.2%, and 50.5%). Despite the education status, an increasing proportion was employed over time (33.2%, 55.2%, and 52.3%).

Figure 1 plots the longitudinal sequences over 6 years after high school exit within each of the three clusters[2]. Please note that the titles of the clusters (see below) describe the majority, but not all of the cases in each cluster, as there was a significant amount of variation within them.

The largest cluster includes youth who "primarily focused on PSE," 57.4% of youth with ASDs. Within this cluster, the diversity in the transition sequences that youth followed to become enrolled in PSE included continuously working and attending college, attending college while changing from part-time to full-time employment, continuously working part-time and attending college, initially working part-time and later enrolling in college while remaining employed, and attending college while initially unemployed and with later part-time employment, among others.

The second cluster, 29.0% of youth with ASDs, represents those who were "continuously or increasingly disengaged", meaning non-participation in PSE and employment. This cluster includes youth who were not employed and did not attend any PSE for much or all of the period. Approximately 70% of this group did not have a job or attend any PSE institution across all 6 years after high school exit. About 20% of this group initially worked or enrolled in PSE but became disengaged at 4 years up to 6 years after high school exit.

[2] Three distinct clusters of transition sequences were clearly shown in a dendrogram (figure available upon request), a tree diagram demonstrating the arrangement of the clusters produced by hierarchical clustering (Gabadinho et al., 2011).

The third cluster, 13.6% of youth with ASDs, was primarily focused on employment. Half (50.0%) of this cluster found part-time employment right after high school and continued to work part time up to 6 years after high school 9.5% attended a CTE school/program up to 2 years after high school and then later worked part time; 10.1% of this group worked part time and switched from vocational PSE to college at the third time point; 10.2% who were neither employed nor attending a PSE institution up to 2 years after high school exit found a part-time job later on; and 4.0% of this group had a full-time job at all three time points.

After identifying these three typical transition sequences for youth with ASDs, a multinomial logistic regression model was used to examine how individual characteristics were associated with cluster membership (Table 2). Compared with youth with ASDs who were continuously or increasingly disengaged, youth primarily focused on PSE had significantly higher odds of coming from a higher-income family (OR = 3.90, $p < 0.05$), having high functional cognitive skills (OR = 15.25, $p < 0.05$), and having little or no trouble conversing (OR = 2.55, $p < 0.05$). However, we found no significant difference in background characteristics between youth with ASDs who were continuously or increasingly disengaged and those who primarily focused on employment.

Discussion

This study is the first to our knowledge to use sequence analysis to describe the longitudinal transition sequences of youth with ASDs over the 6-year period immediately after high school. These detailed transition sequences were then condensed into three clusters, with the most common being “primarily focused on PSE” (57.4%). Approximately a quarter of youth in this group were engaged in PSE across all three time points, whereas the rest of this group had two or three shifts in education and employment status. Although there was a trend over time toward

increasing proportions of youth with ASDs attending PSE (49.7%, 59.2%, and 50.5% at 2 years, 2 up to 4 years, and 4 up to 6 years out of high school), their participation rate was still lower than that of high school graduates in the general population up to 2 years after high school—49.7% vs. 68.0% (Bureau of Labor Statistics, 2012). It would be useful for future studies not only to explore ways to improve PSE participation rates, but also whether the supports and services accessed by PSE students with ASDs were sufficient to enable them to succeed in and complete their PSE.

The second most common transition sequence was "continuously or increasingly disengaged;" 29.0% of youth with ASDs were in this category. According to Shattuck and colleagues (2012), the proportion of youth with ASDs represented in NLTS2 who did not participate any postsecondary education and employment was 34.9% in 2007. Using a holistic approach, we found that about 29.0% were disengaged in both areas up to 6 years after high school, and all youth with ASDs were disengaged for at keast 2 years within the first 6 years after high school. Disengaged youth may be subject to long-term impacts, such as suboptimal health and mental health outcomes, involvement in the criminal justice system, underempoyment and low wages over the life course, and dependence on public assistance programs (Wight et al., 2010).

The least common transition sequence was "primarily focused on employment." Although 22.4% of youth with ASDs had a primary transition goal of obtaining competitive employment, and 38.7% had a goal of obtaining supported or sheltered employment (Cameto, Levine, & Wagner, 2004), only 13.6% of youth with ASDs were primarily focused on employment during the first 6 years after high school exit, a rate similar to those reported in other studies (Hendricks, 2010; Mcdonough & Revell, 2010). Although there was an increasing employment rate among

youth with ASDs over time (32.2%, 55.2%, and 52.3% at the three time points), many youth with ASDs seemed to struggle to find a job in the first 2 years after high school.

The most common employment pathway involved part-time employment. The full-time employment rate was quite low for youth with ASDs as a whole (5.6%, 14.8%, and 9.1% at the three time points) and also for the subgroup of youth who "primarily focused on employment" (4% across all three time points). Unlike PSE participation, the rates at which youth with ASDs were able to find employment, particularly full-time jobs, fell short of achieving their high school employment goals. Encouraging youth with ASDs to participate in CTE courses during high school and specifying employment-related supports and experiences (e.g., job shadowing, work-related behavior/skills training) on students' IEPs could be helpful to youth with ASDs to reach their employment goals.

These detailed depictions of the transition patterns of youth with ASDs fill a gap in the literature by augmenting employment and PSE rates reported in other studies. However, they also portray a somewhat troubling picture of the post-high school outcomes of these youth. The high rate of youth with ASDs who were continuously or increasingly disengaged from either work or PSE and the very low full time employment rates are worrisome. Apparently the transition activities undertaken on behalf of these youth at the "hand off" from high school to the adult world were insufficient to connect them effectively with either PSE or employment. Future research needs to examine effective high school transition planning for youth with ASDs to promote participation in both PSE and employment in the first years after high school.

Further research also is needed to identify the kinds of supports, accommodations, and services that can effectively enhance the performance of individuals with ASDs in PSE and on the job. Unfortunately, the knowledge base on evidence-based practices for improving the academic

and/or workplace performance of persons with ASDs is limited. For example, a recent review of literature related to young adults with ASDs identified 4,855 studies dealing with interventions and their effects on post-high school outcomes. However, only six articles dealing with vocational interventions were identified, all of which were judged to be of poor quality (Taylor et al., 2012), pointing up the striking weaknesses in the evidence base for interventions that can promote positive employment outcomes.

In the same vein, services and support can only be effective if youth with ASDs choose to use them. Newman and colleagues have reported that only 55.1% of PSE students with ASDs nationally had informed their school of their disability, a prerequisite for getting disability-related services in college (Newman, Wagner, Cameto, & Knokey, 2009). Similarly, about half of employed youth with ASDs had informed their employers of their disabilities, and only 15.6% reported that they had received workplace accommodations (Newman et al., 2009). Self-determination instruction can be effective in helping youth with disabilities understand their disabilities and advocate for needed supports and services in school and at workplace. Embedding self-determination instruction in the IEP, vocational training, and transition planning process for students with ASDs could be an important enhancement to their postsecondary school experience and employment success.

This study also revealed demographic disproportionalities in transition pathways. Echoing findings from Shattuck et al. (2012) and Taylor and Seltzer (2010), young adults from higher-income households were significantly more likely than others to enroll in PSE even after controlling for impairment severity. With the increase in income inequality and poverty rates in the U.S since the 1970s (DeNavas-Walt, Proctor, & Smith, 2011), future research and policies should address new ways to promote participation in PSE and employment by youth from lower-

income households.

Consistent with findings from other studies that suggest a relationship between postsecondary outcomes and severity of ASD symptoms (Shattuck et al., 2012), this study found that youth with better conversational skills were more likely to enroll in PSE. Despite this link, provision of speech/communication services after high school fell short of the identified need for them. High school transition plans of 23.3% of students with ASDs identified a post-high school need for speech/communication services (Cameto et al., 2004), yet only 13.6% had received such services up to 6 years after leaving high school (NLTS2, 2007a). Parents identified a lack of information about supports and services and their unavailability as the most common barriers in meeting their young adult children's needs for them (NLTS2, 2007b). The association between higher functional cognitive skills and higher odds of participating in PSE emphasize the long-term beneficial impact of improving functional cognitive skills at an early age.

Having nationally representative estimates of education and employment outcomes can help high school counselors, college professors and staff, employers, clinicians, social workers discuss with parents and youth with ASDs the wide range of potential young adult outcomes that are possible. Additionally, having a better understanding of transition paths among emerging adults with autism promotes a more holistic understanding of transitions for all youth with special needs and for emerging adults as a whole. Resulting improvements to services and supports available to emerging adults with autism may also benefit other youth struggling with their transition to adulthood. Lastly, full inclusion of individuals with autism in education and employment may create positive externalities for other emerging adults such as more positive attitudes towards individuals with disabilities.

Despite breaking new ground in an understanding of the transition trajectories of youth with ASDs, this study has several limitations. First, because students' identification as having an ASD was based on district reports of students receiving special education services under the autism category, students with an ASD who were not qualified for special education services or who were included in another primary disability category, such as mental retardation, were not included in this study. This limits the ability to generalize findings to the total population of youth with ASDs. Second, because we restricted the analysis sample to youth with ASDs who had at least three consecutive waves of data after high school, the sample is relatively small, which limits the power to detect significant relationships within the data. This is also the main reason our results differ from those found by Shattuck and colleagues (2012), who, by using NLTS2 data only from wave 4, had a much larger sample. Third, because we had only 6 years of data after high school, we are unable to illuminate the broader picture of adult outcomes of youth with ASDs. Fourth, the analyses were correlational and do not allow causal inferences. Fifth, the NLTS2 dataset does not provide a consistent measure of course enrollment or job description across all waves. Future research is needed to advance our understanding in both dimensions. Finally, we did not have norm-referenced measures of symptoms or disability severity (Cameto et al., 2004; Sanford et al., 2011).

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Figure Captions

Figure 1. Three typical transition groups in 6 years after exiting high school, generated by sequence analysis

Table 1

Weighted percentage of youth exhibiting each combination of PSE and employment activity, by time period, *N* = 120

Transition patterns (employment | education)	Up to 2 years after high school exit Weighted %	From 2 up to 4 years after high school exit Weighted %	From 4 up to 6 years after high school exit Weighted %
Unemployed | not enrolled in PSE	34.7	21.3	30.6
Unemployed | vocational school	9.3	[a]	[a]
Unemployed | college	23.8	22.7	15.0
Employed part-time[b] | not enrolled in PSE	12.1	10.9	14.0
Employed part-time[c] | vocational school	3.0	2.7	[a]
Employed part-time[d] | college	11.5	26.8	29.2
Employed full-time[e] | not enrolled in PSE	3.5	7.8	2.8
Employed full-time[e] | vocational school	[a]	[a]	[a]
Employed full-time[e] | college	2.1	7.0	6.3
Total	100	100	100

Source: NLTS2, waves 2-5. Percentages were weighted to population levels. Unweighted sample size was rounded to the nearest 10, as required by the Institute of Education Sciences.

[a] Point estimates not reported because of low cell count for this category, as required by the Institute of Education Sciences.

[b] For youth who were employed part time and did not enroll in PSE, the average number of hours worked per week were 20.2, 19.9, and 20.6 at the three time points, respectively.

[c] For youth who were employed part time and enrolled in a vocational school, the average number of hours worked per week were 9.8 and 20.1 up to 2 years after high school exit and from 2 up to 4 years after high school exit, respectively. The average number of hours worked per week at the third time point was not reported due to small sample size, as required by the Institute of Education Sciences.

[d] For youth who were employed part time and enrolled in college, the average number of hours worked per week at the three time periods were 16.2, 24.5, and 21.0, respectively.

[e] Being employed full time is working 35 hours or more per week.

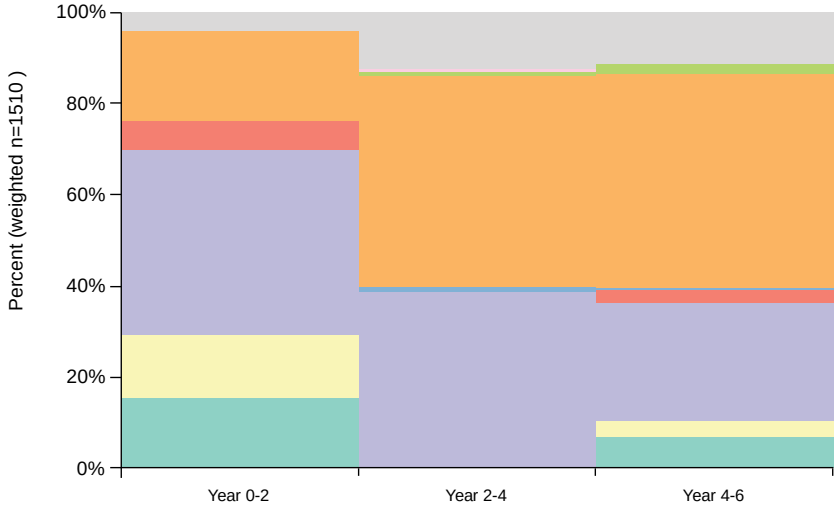
Table 2

Multinomial logistic regression analysis associates cluster membership with individual background characteristics, *N* = 110

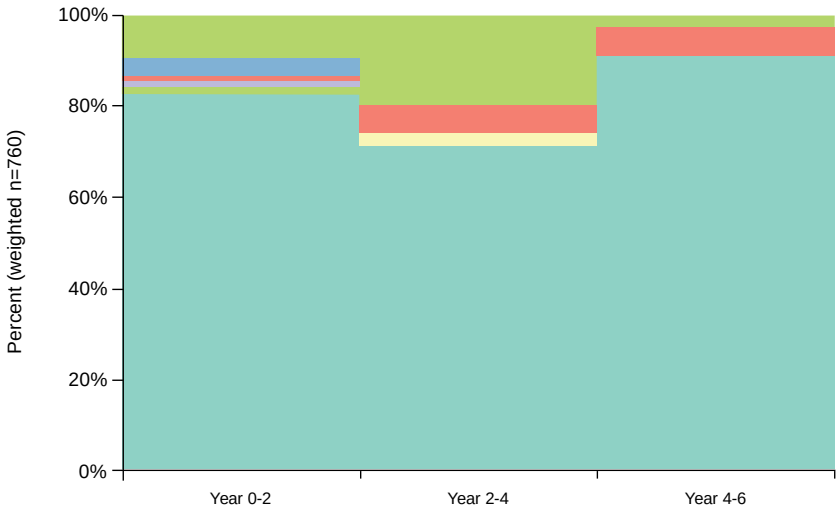
Predictors	Primarily focused on postsecondary education (59.5%)				Primarily focused on employment (13.1%)			
	β	*SE*	*OR* [95% CI]	*p*	β	*SE*	*OR* [95% CI]	*p*
Male	0.16	0.76	1.18 [0.27, 5.21]	0.832	0.14	0.95	1.15 [0.18, 7.45]	0.885
White	0.94	0.60	2.55 [0.79, 8.21]	0.117	0.25	0.72	1.28 [0.32, 5.22]	0.728
Annual income > $75,000	1.36	0.61	3.90 [1.18, 12.85]	0.026	1.10	0.73	2.99 [0.72, 12.39]	0.131
Functional cognitive skills—high	2.72	1.23	15.25 [1.38, 168.43]	0.026	0.58	1.05	1.79 [0.23, 14.09]	0.583
Functional cognitive skills—medium	1.56	1.20	4.76 [0.46, 49.79]	0.19	-0.15	1.00	0.86 [0.12, 6.14]	0.880
No or little trouble conversing	0.93	0.55	2.55 [0.87, 7.48]	0.026	0.34	0.66	1.40 [0.38, 5.16]	0.611

Note. Unweighted sample size was rounded to the nearest 10, as required by the Institute of Education Sciences.
The reference group is youth with ASDs who were continuously or increasingly disengaged. β = unstandardized coefficients. SE = standard errors. OR=odds ratio. CI=confidence interval.

(a) Primarily focused on post secondary education (57.4%)



(b) Continuously or increasingly disengaged (29.0%)



(c) Primarily focused on employment (13.6%)