HHS Public Access

Author manuscript

Res Autism Spectr Disord. Author manuscript; available in PMC 2023 March 01.

Published in final edited form as:

Res Autism Spectr Disord. 2022 March ; 91: . doi:10.1016/j.rasd.2021.101900.

Individualized Education Program Quality for Transition Age Students with Autism

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Abstract

Background.—Students with ASD have some of the worst postsecondary outcomes when compared to other students with disabilities indicating transition planning may not be working effectively. One source of support for postsecondary planning is development of the transition Individualized Education Program (IEP). However, little research is available to describe the current contents of transition IEPs for students with ASD. This study aimed to describe IEP and postsecondary planning quality for students with autism in their final year of high school.

Method.—IEPs for 20 students with autism (M*age* = 18.2 years; *SD* = 1.1) from two mid-southern states were analyzed. Descriptive analyses were used to identify strengths and weaknesses of IEPs and postsecondary goals based on federal law requirements and best practice recommendations.

Results.—IEPs contained an average of 3.1 IEP goals and 1.6 postsecondary goals. IEP goals were most frequently related to academic, learning/work, or communication skills. All IEPs contained an employment postsecondary goal while less than half of the IEPs included an independent living postsecondary goal. Key findings include lack of goals related to social skills

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Conflict of Interest:

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

and the lack of alignment between present levels of performance, IEP goals, and postsecondary goals.

Conclusions.—IEPs for students with ASD in their final year of school do not consistently meet standards outlined by federal law or best practice recommendations necessary for successful transition from high school.

Keywords

Individualized Education Program; autism; transition; postsecondary

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The Individualized Education Program (IEP) is the primary school-based tool for developing, guiding, and implementing seamless transition plans for successful postsecondary outcomes. Federal law, the Individuals with Disabilities Education Act (IDEA, 2004), requires the IEP to provide a framework for guaranteeing a quality educational program for all students with disabilities, including those with autism spectrum disorder (ASD).

However, analysis of the effectiveness of the IEP for guaranteeing success after high school tells a different story. Compared to peers with other disabilities, including those with intellectual disabilities (ID), individuals with ASD report significant disparities in outcomes across several life domains. For example, young adults with ASD have less involvement in technical education, postsecondary education, and employment following high school (Shattuck et al. 2012), and report the highest rates of no participation in employment and education (Shattuck et al., 2012; Wehman et al., 2014) compared to other disability groups. For functional skills, data from the National Longitudinal Transition Study-2 (NLTS-2) found students with ASD were least likely to be able to perform community-based functional skills such as preparing meals, laundering clothes, and buying items at a store compared to all other youth with a disability (Lipscomb et al., 2017). Socially, young adults with ASD were more likely to endorse difficulty making friends and feeling less self-directed and autonomous compared to all other youth with an IEP (Lipscomb et al., 2017). These disparities in employment, daily living skills, and social outcomes suggest that the transition IEP is not living up to its promise to guide and promote a successful transition into the community (Ruble et al., 2019; Snell-Rood et al., 2020).

Research on what is known about the IEPs of students with ASD in general is alarming and provides additional evidence for the need to understand the issues around transition IEPs. For example, one distal indicator, litigation regarding the educational program, indicates that students with ASD receive the greatest amount of litigation (Katsiyannis et al., 2016). Concerns with IEP content and implementation were the most frequently cited issues leading to legal action (Katsiyannis et al., 2016; White, 2014). A primary complaint from parents is a lack of measurable goals/objectives and details concerning accommodations and related services (White, 2014). Consistent with these findings, Ruble et al., (2010) analyzed the IEPs of young students with ASD and identified a need for improved descriptions of behavioral goals, methods of goal measurement, specially designed instruction, and specific criteria and timelines for meeting objectives. For high school age students, Snell-Rood and colleagues (2020) conducted focus groups with stakeholders including parents, individuals

with autism, and school providers about transition planning and noted multiple concerns with transition IEPS. Participants expressed concerns related to inappropriate and sometimes inadequate goals without consideration of functional skills needed to meet postsecondary education or employment goals. In addition, they were concerned that basic vocational, independent living, budget, and transition skills necessary for success were largely absent in transition IEPs. Overall, stakeholders concluded that there was poor goal-setting at the onset and that this resulted in inappropriate plans.

Research and best practice recommendations on the content of IEPs of students with ASD, although limited and somewhat dated, is available for young children. The National Research Council (NRC; 2001) describes best practice guidelines for recommended instruction in seven content areas: (a) social skills, (b) communication skills; (c) engagement in developmentally appropriate activities; (d) fine and gross motor skills, as needed; (e) cognitive and academic skills; (f) replacement of problem behaviors with more conventional and appropriate behaviors; and (g) independent organizational skills and other behaviors that underlie success in general education classrooms. Research evaluating the IEPs of younger students with ASD for these content areas identified inconsistencies in meeting best practice guidelines with some areas such as social and communication skills well represented and other areas such as behavioral skills less frequently represented (e.g., Kurth & Mastergeorge, 2010; Ruble et al., 2010).

However, compared to young children with ASD, there are very few best practice recommendations for IEP content for transition aged students. Of these, many areas of recommended instruction overlap with best practice recommendations for young children but also expand to include priority-based literacy in functional skills required in adulthood (e.g., riding a bus; Schall, et al., 2014). Content recommendations of transition IEPs include: (a) social skills, (b) communication skills, (c) learning / work behavior skills (e.g., staying on task) (d) adaptive skills (self-help); (e) vocational skills, and (f) self-determination skills (Chiang et al., 2013; Schall et al., 2014; Shogren & Plotner, 2012; Snell-Rood et al., 2020; Test et al., 2009; Wehman et al., 2014).

In addition to concerns over IEP content, transition IEPs often fail to meet IDEA requirements of goal measurability and goal alignment. Landmark and Zhang (2013) analyzed 212 IEPs for transition age students representing all disabilities. Less than half (44.8%) had measurable postsecondary goals in each recommended domain (i.e., education/ training, employment, and independent living) and over two thirds had at least one annual IEP goal that was not measurable. Further, IEPs often lacked alignment between annual goals and postsecondary goals (Landmark & Zhang, 2013; Shearin et al., 1999). That is, even when postsecondary goals were present, there was not always a clear relationship between the postsecondary goals and the IEP goals and objectives (Millar, 2009) resulting in IEP goals that often fail to support the attainment of postsecondary goals (Szidon et al., 2015).

When considering what is required in transition plans, IDEA (2004) defines transition services as a *coordinated* set of activities designed to move a student from school to post-school activities and may include components such as instruction, course of study,

related services, and community experiences. IDEA (2004) indicates that by age 16, IEPs are legally required to include: a) appropriate measurable postsecondary goals related to training, education, employment, and, where appropriate, independent living skills; and b) a description of the transition services needed to assist the student in reaching those goals (IDEA, 2004). Inclusion of an independent living postsecondary goal is a decision for the IEP team to make but should be considered for students who do not have age appropriate independent living skills which may include activities related to home living (e.g., purchasing, storing, preparing meals), money management, transportation, laws and politics (e.g., voting), community involvement (e.g., participation in recreation activities), personal safety and interpersonal skills (e.g., establishes and maintains friendships), and self-advocacy (e.g., asks for accommodations when needed). To ensure schools create transition plans that are compliant with federal law requirements, the National Secondary Transition Technical Assistance Center (NSTTAC, 2009) developed the Indicator 13 Checklist. Indicator 13 assesses for content that is required for all transition IEPs including: measurable postsecondary goals, postsecondary plans that are updated annually, age-appropriate transition assessment, identification of transition services, courses of study that align with postsecondary goals, annual IEP goals related to transition services needs, and evidence that an outside agency (if appropriate) and the student were invited to the IEP meeting.

Despite guidance for creating appropriate transition plans, students with ASD continue to exhibit problems with appropriate transition planning. Compared to students with other disabilities, including students with Intellectual Disabilities (ID), goals for postsecondary education/training and independent living are less likely to be present for students with ASD (Shogren & Plotner, 2012; Wehman et al., 2014). Moreover, employment goals for students with ASD are more likely to be related to sheltered employment rather than competitive employment (Shogren & Plotner, 2012).

The notable failures in postsecondary transition outcomes in ASD highlight the need for more research on transition planning and transition IEPs specifically for ASD. For transition IEPs to be successful, appropriate high-quality goals have to be selected. We were particularly interested in what kinds of IEP and postsecondary goals were identified and whether the goals were articulated in accordance with best practice recommendations. Specifically, we addressed the following research questions: (a) How many and what type of annual goals, including postsecondary goals, are included on IEPs for transition age students with ASD? (b) What is the overall IEP quality based on IDEA, Indicator 13, and best practice recommendations?

Based on prior research, we hypothesized that a majority of IEP goals for transition age youth with ASD would incorporate goals for social, communication, and self-help (adaptive) skills with fewer goals focusing on behavior and academic skills. Given federal law requirements, we further hypothesized there would be at least two postsecondary goals included on the IEP in the required domains of employment and education/training (independent living is not required and thus was not included in the hypothesis because its inclusion varies across individuals based on their needs).

Method

Sampling

Twenty special education teacher-student dyads were recruited as part of a larger randomized control trial of a consultation intervention, the Collaborative Model for Promoting Competence and Success for Students with ASD (COMPASS; Ruble et al., 2012; 2018). After teachers agreed to participate, a student with ASD was randomly selected from the teacher's caseload and the IEP of this student was used for this study. To participate in the study, students had to qualify for special education under the Autism category as defined by IDEA (2004), have their clinical diagnosis confirmed on the Autism Diagnostic Observation Schedule, Second Edition (ADOS-2; Lord et al., 2012), and be in their final year of school. This study was conducted in accordance with the ethical guidelines for research as outlined in the Declaration of Helsinki. As such, informed consent was obtained from all participants. For individuals with ASD who had limited language skills, parent consent was obtained and, when possible, assent also was obtained. The study procedures were approved by the university IRB.

Participants

Participants were from one Midwestern (n = 7) and one southeastern state (n = 13). Fifty-five percent of participants were in schools (n =11) from counties classified as large cities (i.e., more than 250,000 people). Thirty-five percent (n = 7) were from small cities (i.e., 75,000- 249,999 people), and ten percent (n = 2) were from large towns (i.e., 25,000- 74,999 people). Forty percent of participants attended schools with a free and reduced lunch student population rate of 50% or higher and 60% attended schools with a free and reduced lunch rate in the 30-49 percent range.

Ninety percent (n = 18) of students were male. Seventy-five percent (n = 15) of the students were White, 15% (n = 3) were Black, 5% (n = 1) were Asian, and 5% (n = 1) were multiracial. Twenty-five percent of annual household incomes fell below $24,999, 35% fell between $25,000 and $49,999, and 40% were above $50,000. Eighty-five percent of teachers were female. Ten percent of teachers reported a Bachelor's degree as the highest degree earned, 80% reported a Master's degree as the highest degree earned, one teacher had a doctorate, and one teacher was emergency certified.

IEPs documented instruction in multiple settings. Fifteen IEPs indicated that a student was receiving resource instruction, 10 IEPs documented collaborative instruction, and seven IEPs documented community-based instruction. Forty percent of the sample (n = 8) spent less than 40% of the day in the general education setting while another 40% (n = 8) spent more than 80% of their day in the general education setting. Twenty percent (n = 4) spent 40-80% of their time in the general education setting each day. See Table 1 for additional information.

Measures

IEP quality.—IEPs were coded using the IEP Quality for Students with Autism (IEP-Q) measure, originally developed for young children with autism (Ruble et al., 2010). The

IEP-Q assesses adherence to (a) the IDEA (2004) indicators and (b) the best practice indicators (NRC; 2001; Wehman et al., 2014; Schall et al., 2014; Shogren & Plotner, 2012; Test et al., 2009). There were two independent subscales, one for the IDEA indicators and one for the best practice indicators. The seven-item IDEA indicators subscale reflects federal law requirements applicable to all IEPs and are not specific to IEPs of students with ASD. The scale was applied independently on up to three objectives. Each item was rated for up to three objectives identified for analysis. The IDEA items assess the quality of the written descriptions of individual objectives as evidenced by: (a) a description of the student's present level of performance for the specific objective; (b) a description of the association between the IEP objective and the general and/or developmental curriculum; (c) a measurable and behavioral description of the objective; (d) specification of the conditions under which the behavior is to occur; (e) the inclusion of specific criteria and a timeline for goal attainment for each objective (i.e., not just the implied timeline from the IEP as a whole); (f) a method of goal measurement; and (g) the description of specially designed instruction (SDI) that is individualized for the goal/objective. These seven items were scored on a 3-point Likert-type scale (0 = *no/not at all evident*, 1 = *somewhat evident*, 2 = *yes/clearly evident*). Table 2 lists each of the IDEA items assessed.

As noted above, the IDEA quality score was based on a maximum of three objectives analyzed per IEP. Objectives chosen for analysis were selected to represent the core needs of students with ASD including: (a) a social objective (e.g., initiating a greeting, recognizing others' perspectives, responding appropriately to others given context); (b) a communication objective (e.g., having conversation exchanges, answering questions); and (c) a learning or work skill objective (e.g., staying on task, completing homework). If an IEP did not contain an objective in the social, communication, or learning domain, then an objective in an academic (e.g., reading writing, math), behavioral (e.g., self-injurious behavior, aggression, calling out, emotional control), self-help (e.g., adaptive skills), or motor/sensory domain was chosen. To ensure IEP objectives were correctly classified within a domain, the first author coded each of the objectives independently. A second coder then classified each of the objectives into domains independently. There was 87% agreement in coding after the first round. Next, the coders reconciled any differences in classification and reached consensus for all objectives.

The second subscale assessed best practices. Scoring on the best practice content indicators was based on the content provided on the entire IEP and was not limited to the three objectives scored on the IDEA indicators. The best practice content indicators consisted of eight items. The first three items assessed if the IEP contained ASD specific goal domains related to (a) social skills, (b) communication skills and symbolic communication (e.g., Picture Exchange Communication System), if warranted, and (c) organizational / self-management skills. Because of the critical role of parents in transition IEPs, the fourth item assessed whether or not parental concerns were reported and included. The remaining 4 items assessed whether there was content related to (a) fine and gross motor skills, (b) basic cognitive and academic thinking skills, (c) replacement of problem behavior with appropriate behaviors, and (d) full year programming. Items were rated on a 3-point Likert-type scale (0 = *no/not at all evident*, 1 = *somewhat evident*, 2 = *yes/clearly evident*). Table 3 lists each of the NRC items assessed.

Indicator 13.—An adapted version of Form B of the Indicator 13 compliance checklist developed by NSTTAC (2009) was used to measure IEP transition planning content. Form B was enhanced for professional development and analyzes postsecondary goals separately by domain (employment, independent living, education/training). If an independent living postsecondary goal was not included, it was not rated and was treated as missing, since IEPs are not required to have independent living goals. For each assessable domain, twelve items were scored. The first four items were added by the research team and not included on the NSTTAC (2009) Indicator 13 form. The first four items asked: (1) Is the domain (employment, independent living, education/training) included in the postsecondary goals; (2) Is it a separate postsecondary goal; (3) Are there any transition services needs identified? And (4) Is (are) there postsecondary goal(s) related to the student's IEP goal(s)? Subsequent Indicator 13 items assessed postsecondary goals: (5) for their measurability in the areas of training/education, employment, and, where appropriate, independent living skills; and whether they specified (6) annual updates; (7) based on transition assessment(s); (8) with transition services to meet them; (9) with linked courses of study; and (10) with annual IEP goal(s) related to the student's transition service needs. The final two items assessed whether or not there was (11) evidence that the student was invited to the meeting; and (12) if appropriate, evidence that a representative of any participating agency was invited to the meeting. Items were scored dichotomously (1 = *yes/present*, 0 = *no/not present*). Table 4 lists each of the items assessed by the adapted Indicator 13 form. Domain scores were produced by adding the number of items scored "1" within each separate domain (i.e., education/training, employment, and independent living). Possible scores ranged from 0 – 12, with higher numbers indicating more Indicator 13 items were included on the transition IEP. If an employment or education/training postsecondary goal domain was not included on the IEP, a domain score of zero was assigned.

Interrater Reliability

For both the IEP-Q index and Indicator 13 measure, a primary coder scored each of the IEPs independently. A second evaluator then independently coded one IEP and the coders discussed any differences in interpretation until they reached consensus. Once consensus was achieved, the second coder independently coded 20% of the IEPs in the sample. The two coders' scores were compared to assess interrater reliability. Adequate item level interrater reliability was achieved for the IEP-Q (Kappa = .68; CI = .60-.76) and Indicator 13 Quality measure (Kappa = .80; CI = .72-.88).

Data Analyses

To answer research questions about the frequency, type, strengths and weaknesses of the IEPs based on IDEA, best practice content recommendations, and Indicator 13, we applied descriptive statistics. Item level frequencies were generated for the IDEA and best practice content indicators within the IEP-Q as well as for the Indicator 13 items. For the IDEA indicators, items with a score of 2, "clearly evident," were considered to be on the IEP (Ruble et al., 2010). For the best practice content indicators, items with a score of 2, "clearly evident," or 1, "somewhat evident," were considered to be on the IEP. A more stringent requirement was utilized for the IDEA items because they represent federal law

requirements, whereas the best practice content indicators represent recommendations for effective programming.

Results

IEP and Postsecondary Goals

On average there were 3.1 (*SD* = 1.9) goals and 4.5 (*SD* = 4.3) objectives on the IEPs (see Table 1). There were 107 IEP objectives across the 20 IEPs. The most frequent IEP objective domain represented was academic skills (50 objectives; 47%), followed by learning/work skills (24 objectives; 22%), communication skills (16 objectives; 15%), and self-help skills (8 objectives; 7%). Social skills and behavioral objectives had the same number of objectives represented (4 objectives; 4%) and motor skills were least common (1 objective; 0.9%). Students spending 80% or more of their time in general education had objectives exclusively related to academic and learning skills with the exception of one IEP that included a social skill objective. Students who attended resource or full-time special education had a wider diversity of objectives (i.e., academic, social, communication, learning, and self-help).

The mean number of *postsecondary goals* per IEP was 1.6 (*SD* = 0.8). All IEPs included employment postsecondary goals. Ninety percent (*n* = 18) of postsecondary goals addressed education/training, and 45% (*n* = 9) addressed independent living goals. More than half (i.e., 61%) of the education/training postsecondary goals were combined with the employment postsecondary goal.

IEP Quality

IDEA-related indicators.—Recall that up to 3 objectives per IEP were coded. Objectives related to learning/work skills, social skills, and communication skill goals were selected when possible. When not available, objectives from other domains were selected. Table 2 presents the percentage of IEPs that met IDEA (2004) requirements. Three quarters of the IEPs described the present level of performance for the specific objective. With respect to assessment of objective measurability, less than half of the objectives specified when the behavior was to occur (45.3%), provided criteria and timelines for objective attainment (39.6%), were written in behavioral terms (26.4%), or described a method of measurement individualized to the objective (9.4%). Also, fewer than 30% of objectives included individualized specially designed instruction (28.3%) and had a clear link between student performance of the objective and the general/developmental curriculum (18.9%). While most IEPs had at least one criterion specified in the objective (e.g., frequency, duration, latency, percentage), 66% did not have a specified timeline for meeting the objective other than the annual IEP date.

Best Practice Content Indicators.—Table 3 presents the percentage of IEPs meeting best practice recommendations for students with ASD. There was considerable variability across IEPs in terms of which skills were identified as areas of need in the present levels of performance and whether an identified need was subsequently addressed with an IEP objective. The present levels of performance on every IEP in the sample described a need related to both academic and learning / work skills. Most IEPs (65-70%) incorporated

learning / work and academic objectives respectively. Ninety percent of IEPs documented social skills as below same age peers. However, only 22% of the IEPs that documented a social skill need in the present levels incorporated an IEP objective to address social skills. Behavioral concerns were also frequently documented (70% of IEPs), but very few IEPs (7%) incorporated objectives to address behavior needs. Communication skills were documented as an area of need in over half of the IEPs (55%). IEPs incorporated objectives related to communication skills in 73% of the IEPs that marked communication as an area of need. Two IEPs documented a need for symbolic communication and three IEPs documented a motor skill need with a related IEP objective subsequently incorporated on one of the IEPs. Finally, less than half (45%) of the IEPs described parent concerns. No IEP included goals that addressed 100% of the students' needs described within the present level of performance.

Transition Planning: Indicator 13

Table 4 presents the percentage of IEPs that met federal law requirements for transition planning. Every IEP in the sample identified a transition service need in the areas of education/training and employment. Only 40% of IEPs documented independent living skills as a transition service need. Between 55 and 77% of IEPs across the education/training, employment, and independent living domains provided evidence of age-appropriate transition assessment (60.0-77.8%), measurable postsecondary goals (55.6-88.9%) as well as courses of study (55.6-80.0%) and transition services (77.8-95.0%) to support the measurable postsecondary goal(s).

A major area of weakness in documentation of transition plans was in development of IEP goals related to postsecondary goals. Few of the postsecondary goals on the IEP had a related annual IEP goal in education/training (22.2%), employment (25.0%), and independent living (25.0%). For example, one IEP included independent living as an area of need in the transition assessment but the annual IEP goal was related to vocational skills (e.g., time on task, following directions) and did not incorporate a related IEP goal to support acquisition of independent living skills. Evidence that the student or an appropriate participating outside agency was invited to the IEP meeting was documented on the IEP less than 25% of time.

Domain scores for Indicator 13 were calculated for education/training, employment, and independent living by summing the total number of items endorsed in each domain. On average, IEPs met between 6 and 7 of the 12 items on the Indicator 13 items across the education/training ($M = 6.00$; $SD = 2.71$), employment ($M = 6.85$; $SD = 1.79$), and independent living ($M = 6.78$; $SD = 2.95$) domains. Scores ranged from 0 to 9 in the education/training domain, 4 to 10 in the employment domain and 3 to 10 in the independent living domain (out of a possible 12 points).

Discussion

We evaluated transition IEPs of students with autism using a previously developed measure first established for IEPs of young students with ASD (Ruble et al., 2010) and modified for transition age youth along with an adapted version of Indicator 13 (NSTTAC, 2009). Three

major areas were identified as sorely lacking in the quality of transition IEPs for students with autism: (a) failure to meet standards outlined by federal law, (b) limited content related to areas of best practice recommendations for instruction needed by students with ASD; and (c) misalignment between present levels of performance, IEP goals, and postsecondary goals.

Failure to Meet Standards Outlined by Federal Law

With regard to IEP quality and consistent with IDEA requirements, the vast majority of IEPs included some type of description of the present level of performance for the objective. In contrast, however, less than half of the objectives were measurable, provided specified conditions, connected to the general/developmental curriculum, described specially designed instruction, and included a method of goal measurement. These findings echo those for young children with autism (Ruble et al., 2010) and are consistent with parent complaints (White, 2014). Another concern is that the majority of the objectives failed to include a specified timeline for completion. The default seemed to be to assume that the goal timeline was coincident with the timeframe of the IEP. Thus, there was no attempt to sequence or individualize objective completion times. Similar to the findings of Ruble and colleagues (2010) for young students with autism, IEP forms did not allow for a more specific timeline of goal attainment other than the length of the IEP. Moreover, it was unclear when mid-course decisions on instructional changes should be made if the student is not making the expected progress.

A further concern was lack of specificity in the description of specially designed instruction and method of measurement for each objective and goal. On some occasions, IEPs failed to include any description of specially designed instruction for the IEP goal. However, the most common occurrence was listing specially designed instruction under the goal without individualization to the objective. Similarly, descriptions of method of measurements lacked individualization to the objective (e.g., listed directly under goal) or lacked specificity (e.g., direct measures). These findings are consistent with other studies that have documented issues with IEP goals and objectives lacking measurability and specificity (Sanches-Ferreira et al., 2013).

Regarding postsecondary goals, IEPs in our sample included 1.6 postsecondary goals. Every student had an employment postsecondary goal, which is consistent with IDEA (2004) requirements, and aligns with Shogren and Plotner (2012) who found goals related to employment were common for all students with disabilities, including individuals with autism. Ninety percent of the IEPs addressed education and training in the postsecondary goals indicating some IEPs neglected education and training, which is a required component, when developing transition plans. It was common for the postsecondary goal to incorporate education/training and employment together (e.g., student will enter four-year university to obtain employment in STEM field). In total, IEPs incorporated about 50% of the necessary components across education/training, employment, and independent living domains for postsecondary plans as measured by the adapted Indicator 13, a finding consistent with Landmark and Zhang (2013).

Limited Content Related to Areas of Best Practice

When considering whether IEPs include content consistent with best practices, a strength for transition age IEPs was the majority included goals related to learning/work skills and academic and cognitive skills. This could be reassuring given recommendations for incorporating academic skills into IEPs for students with autism to prevent them from falling further behind their same age peers (Wilczynski et al., 2007). However, it is inconsistent with best practice recommendations for functional academic skills (e.g., reading signs in the community, making change) to be prioritized for transition age students even if early academic skills (e.g., long division) have yet to be mastered (Schall, et al., 2014). Similarly, Schall and colleagues (2014) suggested IEPs for students with age-appropriate academic skills should emphasize functional skills to ensure success within the community (e.g., maintaining friendships, staying on task at work).

The most glaring gap concerned skills essential for all students with ASD - communication and social skills. Although communication goals were frequently included on the IEP when described as an area of need, 8 of the 20 IEPs marked communication skills commensurate with same age peers or failed to describe the student's communication functioning in the present level of performance. Similarly, for the current sample, transition age students had few social skills addressed in their IEP. Although social concerns were identified in the present level of performance 90% of the time, only 22% of IEPs incorporated goals to address social skills. This finding aligns with Gelbar et al. (2018) who reported in their sample of 75 IEPs of students with autism that social skills were subsequently incorporated on the IEP only 13% of the time when recommended as a service by outside evaluators. Given that core diagnostic criteria for autism involve deficits in social communication skills and that the students in this sample had autism as their eligibility classification for an IEP, it is notable that the current sample of IEPs included few goals related to social and communication skills, or neglected communication as an area of need altogether.

Another area that was a significant weakness concerns parent input. Parental concerns were only documented on the IEP 45% of the time, which is similar to what was found for young children with autism (Ruble et al., 2010). This finding is consistent with prior research of parent reported decreased satisfaction with their amount of involvement in IEP meetings as students' age (Wagner et al., 2012). Ruble and colleagues (2019) found that parents were the primary or secondary persons responsible for the implementation of plans associated with postsecondary goals. If parents are also not being included in a meaningful way in transition IEP planning, this could explain a large amount of the variance in poor postsecondary outcomes.

With respect to postsecondary goals, fewer than half (45%) of the IEPs in the sample had independent living postsecondary goals. This finding is consistent with previous research demonstrating low rates of independent living goals for students with autism. Data from the NLTS-2 showed only 28 of every 100 students with autism across the nation had primary goals in independent living (Shogren & Plotner, 2012). IDEA (2004) does not mandate every student have an independent living postsecondary goal. However, the infrequency of independent living goals together with the fact that students with ASD have the lowest levels of community engagement compared to students with other disabilities (e.g., Lipscomb,

2017), highlights a potential gap in transition planning. Qualitatively, for almost half of the IEPs that documented an independent living goal the independent living goal documented was “will live independently,” lacking specificity or “will live at home with parents/family,” and was no different from the student’s present levels.

A final concern regarding postsecondary planning was the lack of evidence of involvement from outside agencies and students themselves, with documented evidence of involvement occurring less than 25% of the time. Both interagency collaboration and self-advocacy have been found to predict improved outcomes for education and employment for students with disabilities (Test et al., 2009). Thus, the IEP team should prioritize getting relevant members to the IEP meeting early on to ensure a smoother transition.

Misalignment Between Present Levels of Performance, IEP Goals and Postsecondary Goals

Assessment of the transition IEPs as a whole revealed a distinct lack of cohesion. First, there was a lack of alignment between present levels of performance and annual IEP goals. Most notably, no IEP in the sample incorporated objectives that addressed 100% of a student’s needs identified in the present levels of performance. For example, over two thirds of the IEPs in the sample documented a need related to social skills or behavior problems in the present levels of performance. However, less than one quarter of the IEPs included an annual goal to address those needs.

Next, there was a lack of annual goals documented on the IEP that were related to and aligned with the students’ postsecondary goal(s) or transition service needs. This misalignment across present level of performance and student need, IEP goals, and postsecondary goals is problematic because postsecondary goals should guide IEP development for transition age students (IDEA, 2004; Szidon et al., 2015). But in the current sample, IEP content was disjointed with a lack of clear relationship between the present levels of performance, IEP goals and objectives, and postsecondary goals, as if each were written independently from the other.

Limitations and Future Directions

One major limitation of the study was the small sample, which restricts generalizability of the results. A total of 20 IEPs were included in the analysis and the IEPs were from two different states. Given that IDEA (2004) allows states the flexibility in how they design the IEP, there may be state to state differences in IEP quality for transition age youth with autism based on state guidance for constructing IEPs. For example, in the current sample one state required a section for documenting parental concerns whereas the other state did not. Instead, if parent concerns were present, they were commonly incorporated into the description of the present levels of performance rather than as a separated section. Consequently, for one state, parental concerns were always described while they were rarely described in the other. Future research should include IEPs from various states to examine how state templates for IEP development promote or inhibit IEPs that are aligned with IDEA requirements and reflect best practice recommendations for transition planning. Another limitation, given the small sample, is that data analysis focused

on descriptive statistics, which limited our ability to generalize to the larger population. Future research should aim to increase the sample size to conduct additional inferential statistics to better understand how different student, teacher, or school variables impact IEP quality. Last, because the current study was a secondary data analysis there were limitations in the information available to researchers that may have been documented elsewhere in the student's cumulative file. As a result, some IEPs may have received lower scores for not incorporating information (e.g., conference invitations, course of study) that may be documented elsewhere.

Another limitation of the current study is reflected in how data were coded. The NRC (2001) recommendations that guided the coding measure are over 20 years old. Although NRC (2001) recommendations have aged, they remain influential given their initial focus on empirically supported interventions that address important developmental areas for individuals with autism (e.g., social communication skills; Odom et al., 2020). Another limitation is that Indicator 13 was originally designed to address compliance not quality. Although an IEP that is not compliant with federal mandates should not be considered a high-quality IEP, in similar terms, a compliant IEP may not be high quality. However, there is some evidence to suggest that as compliance increases, the number of transition practices (e.g., community agency collaboration, family involvement, employment preparation program participation, social skills training) on the IEP increase (Landmark & Zhang, 2013). However, there may be domains that are not reflected in our current coding system that may also address quality in transition plans. It will be critical for future research to continue to identify key components of effective IEP transition planning.

Last, the current study was limited to a description of the content of IEPs for transition aged students. However, it is important for future research to address how the content of IEPs for transition age students relates to student outcomes. Ruble and colleagues (2013) found that the quality of IEPs was positively associated with students' goal progress for young children with ASD, meaning that as the quality of the IEP increased, the amount of progress on their goals increased. However, it is unclear if a similar trend would hold for transition aged students because the current study did not examine associations with an outcome measure. Therefore, it will be important for future research to examine associations between the quality of transition IEPs and post-school outcomes.

Implications

Overall, IEPs for transition age students with ASD are deficient in meeting federal standards and lacked alignment with best practice in educating students with ASD. For transition age students, there was often a lack of IEP goals related to the postsecondary goals. Given that the IEP serves as a roadmap for the student's educational plan, it is critical that postsecondary goals are given greater emphasis and serve to guide IEP goal development. Educator knowledge remains a critical component in the development of IEPs that are best suited to meet the student's needs (Shriner et al., 2013). Specifically, teacher-training programs may be an additional way to increase knowledge and skill in designing IEPs that align with both legal requirements and student needs. Creating high quality IEPs with

a detailed postsecondary plan for transition age students with autism can be one way to address poor post-school outcomes for adults with autism.

Acknowledgements

This work was supported by grant Number 5R34MH104208-02 from the National Institute of Mental Health. The National Institute of Mental Health had no role in the study design; the collection, analysis or interpretation of data; the writing of the report; and the decision to submit the article for publication. The content is solely the responsibility of the authors and does not necessarily represent the official views of the National Institute of Mental Health or the National Institutes of Health.

Portions of the current findings have been presented as an oral presentation at the National Association of School Psychologists 2018 Annual Meeting, Chicago, Illinois, United States of America. This work was supported by grant Number 5R34MH104208-02 from the National Institute of Mental Health. The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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Highlights

- A majority (90%) of IEPs documented a need for social skill development but a minority (less than 25%) of IEPs subsequently incorporated a related IEP goal.
- IEPs contain limited content related to areas of best practice recommendations for instruction needed by transition age students with ASD (e.g., social communication skills, self-help skills, independent living skills)
- Few education/training, employment, and independent living postsecondary goals documented on the IEP had a related annual IEP goal.

Table 1

Participant Characteristics

Domain	Mean (SD)	Range
Teacher		
Years working with students with autism	11.3 (7.4)	2-27
Number of students with autism taught	35.1 (56.5)	5-225
Caseload	18.3 (15.9)	5-75
Student		
Age (years)	18.2 (1.1)	17-20
Intelligence[a]	75.7 (27.1)	40-119
Adaptive Functioning[b]	71.8 (14.4)	38-94
Autism Severity[c]		
Standard[d]	36.8 (8.4)	26-51
High Functioning[e]	26.8 (4.2)	20-34
IEP		
Number of goals	3.1 (1.8)	1-8
Number of objectives	4.5 (4.3)	0-14
Number of postsecondary goals	1.6 (0.8)	1-3
Speech Therapy[f] (minutes/weekly)	14.8 (11.0)	3-30
Occupational Therapy[g] (minutes/weekly)	4.8 (6.8)	1-15

Note.

[a]KBIT-2 IQ composite (Standard score).

[b]Teacher Vineland Adaptive behavior composite.

[c]Childhood Autism Rating Scale 2.

[d]Scores based on 8 participants.

[e]Scores based on 12 participants.

[f]Seven students received speech services.

[g]Five students received occupational therapy and data on total time receiving services for occupational therapy was missing for one of the five participants.

Table 2

Item Level Frequencies for the IDEA Requirements

IDEA Indicators	% Explicitly stated[a,b]
The student's present level of performance is described for this objective	75.5
The conditions under which the behavior is to occur are provided (i.e., when, where, with whom)	45.3
The criterion (i.e., rate, frequency, percentage, latency, duration, and timeline for goal attainment is described specifically for objective (other than for length of IEP)	39.6
Specially Designed Instruction individualized to the goal/objective	28.3
The objective is able to be measured in behavioral terms	26.4
The student's performance of this objective is described in a manner that links it specifically to general/developmental curriculum	18.9
A method of goal measurement is described	9.4

Note.

[a] Items had to be coded "2" to be considered explicitly stated.

[b] Based on 50 coded objectives.

Table 3

Item Level Frequencies for the Best Practice Recommendations

Items	%Described as Need	% Yes on IEPs[c]
Parental concerns are described		45.0
Content includes goals that reflect[a,b]		
Expressive, receptive, and nonverbal communication skills[c]	55.0	72.7
Basic cognitive and academic thinking skills	100	70.0
Organizational skills and other behaviors that underlie success in a general education class	100	65.0
Symbolic functional communication system[d]	10.0	50.0
Fine and gross motor skills to be utilized when engaging in age appropriate activities[e]	15.0	33.3
Social skills to improve involvement in school and family activities	90.0	22.0
Replacement of problem behaviors with appropriate behaviors	70.0	7.1
Extended School is Recommended[f]	5.0	100

Note.

[a] Items reflect National Research Council Recommendations (NRC, 2001).

[b] Items coded “1” or “2” were considered included in IEP.

[c] A percentage of less than 100 in this column indicates a need was documented in the present levels of performance but related goals were not incorporated on the IEP.

Table 4

Item Level Frequencies for Indicator 13

Adapted Indicator 13 (NTACT, 2012)	**% Explicitly Stated**		
Items	**Employment (N = 20)**	**Education/ Training (N = 20)**	**Independent Living (n = 8)**
Are there any transition services needs identified?	100.0	100.0	40.0
Is (are) there annual IEP goal(s) related to the student's transition services needs?	45.0	55.0	25.0
Items	**Employment (N = 20)**	**Education/ Training (n = 18)**	**Independent Living (n = 9)**
Are there transition services in the IEP that will reasonably enable the student to meet his or her postsecondary goal(s)?	95.0	77.8	77.8
Do the transition services include courses of study that will reasonably enable the student to meet his or her postsecondary goal(s)?	80.0	77.8	55.6
Is there an appropriate measurable postsecondary goal or goals in this area?	70.0	55.6	88.9
Is there evidence that the measurable postsecondary goal(s) were based on age appropriate transition assessment?	60.0	66.7	77.8
Is (are) the postsecondary goal(s) updated annually?	35.0	38.9	44.4
Is (are) there postsecondary goal(s) related to the student's IEP goal(s)?	25.0	22.2	33.3
Is there evidence that the student was invited to the IEP Team meeting where transition services were discussed?	20.0	22.2	22.2
If appropriate, is there evidence that a representative of any participating agency was invited to the IEP Team meeting with the prior consent of the parent or student who has reached the age of majority?	15.0	16.7	22.2
	Mean (SD)		
Average Number of Items Included	6.85 (1.78)	6.00 (2.71)	6.78 (2.95)