

Examining the Quality of Individualized Education Plan (IEP) Goals for Children With Traumatic Brain Injury (TBI)

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Abstract

The purpose of this descriptive study was to investigate the quality of Individualized Education Plan (IEP) goals for students with traumatic brain injury (TBI) using an empirically based rating instrument. One hundred twenty-five IEP goals for 49 students with TBI were coded using the Revised IEP/IFSP Goals and Objective Rating Instrument (R-GORI; Notari). Using this dichotomous measure, we analyzed the quality of IEP goals across six areas: observability, measurability, functionality, generalizability, application in daily tasks, and clarity of goals. On average, students had three IEP goals (range: 1–8). The average goal quality score was 3.74 (range: 1–6). While most of the goals were measurable, only a few contained details about how the goals could be generalized beyond the specific educational or therapeutic environment. These findings highlight variability in the quality of IEP goals, which may have implications to the therapeutic environment and child outcomes.

Keywords

Individualized Education Program (IEP), delays/disorders, language/linguistics, service delivery

Individualized Education Plans (IEPs) are an essential part of education for children with disabilities. Traumatic Brain Injury (TBI) is the most common cause of death and disability in children between birth and 4 years and 15 and 19 years of age (Centers for Disease Control and Prevention [CDC], 2015). In addition, approximately 145,000 children between birth and 19 years of age experience any number of deficits resulting from TBI (Zaloshnja et al., 2008). However, children with TBI represent a relatively small proportion of the population of children receiving special education services, with 0.4% reported in 2019 (U.S. Department of Education, 2019). Children with TBI demonstrate unique and varied educational needs that school professionals must address through an IEP. Therefore, it is essential children who are determined to have a TBI receive services provided by the public school system and that explicit IEP goals are written to target their educational needs. While some research studies have examined the quality of IEP goals for other specific impairments (e.g., speech sound disorder; Farquharson et al., 2014), there is a paucity of empirical research examining the quality of IEP goals for children with TBI. Because goals and additional supports are outlined in the IEP, understanding this information has important implications for

treatment targets and ultimately educational outcomes. In this study, we analyzed the quality of the IEP goals for children with TBI across multiple quality dimensions (Notari, 1988). This information is essential to ensure speech-language pathologists (SLPs), educators, and other educational professionals are able to provide high-quality services to this population.

Deficits After TBI

Pediatric TBI is a unique and significant problem because a brain injury changes the underlying neurological system. This results in a host of deficits that consequently impact

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the way a child learns (Pretti-Frontczak & Bricker, 2000). Cognitive deficits, in particular, resulting from TBI often include reduced attention (Fan et al., 2002), impaired memory (Constantinidou & Neils, 1995), slowed processing (Constantinidou et al., 2005, 2008; Constantinidou & Thomas, 2010), impaired executive functioning (Sohlberg et al., 2003), and difficulties with communication (oral and written language; Aldrich & Obruzut, 2012; Babikian et al., 2015). Thus, students with TBI are more likely, when compared to their typically developing peers, to experience cognitive communication difficulties that impact many academic areas, including learning and retaining new information, reading, oral language, synthesizing information for problem-solving, and executive functioning (Anderson & Catroppa, 2006; Jantz & Coulter, 2007; Prasad et al., 2017). Because academic learning is contingent on the underlying cognitive components of attention, memory, and executive functions, this population of students is at substantial risk for poor outcomes in all academic subjects, particularly oral and written language and math. As a result, they often receive specialized educational services, which are outlined in their IEP.

IEPs

The Individuals with Disabilities Education Act (IDEA, 2004) mandates special education services for all qualifying students with disabilities, including those with TBI. Once students qualify for services, school professionals generate an IEP to document the student's services that best meet their specific educational needs. In accordance with IDEA, an IEP includes explanation of the student's present level of academic achievement; annual goals; how the student's progress will be measured; the services the student will receive; accommodations needed; and the dates, frequency, location, and duration of services provided. Germane to the current investigation, IDEA requires that IEPs include measurable annual goals that are both functional and academic in nature (IDEA, 2004). These goals must be designed to support the student in accessing the general education curriculum and any other educational needs related to the student's disability.

The quality of these goals, however, varies by district, school, and the professionals generating them. Previous studies indicate variability in IEP goal quality due to (a) missing required aspects, such as measurability (Boavida et al., 2010); (b) targeting skills that do not generalize across settings (Kurth & Mastergeorge, 2010); (c) lacking specific information about how the goal applies to multiple subject areas (Farquharson et al., 2014); and/or (d) including goals that are not specific to the child's particular disability and/or level of functioning (Catone & Brady, 2005; Pretti-Frontczak & Bricker, 2000). As such, it is imperative that

the IEP goals for children with TBI are systematically evaluated in the specific areas described earlier.

Evaluating IEP Goal Quality

For the purposes of the current study, researchers used the Revised IEP/IFSP Goals and Objective Rating Instrument (R-GORI; Notari, 1988; Notari-Syverson & Shuster, 1995) because it explicitly evaluates critical aspects of IEP goal quality, including observability, measurability, functionality, generalizability, daily tasks, and clarity of goals. This measure has been used in previous investigations of IEP goal quality for different populations of children with disabilities. For instance, Farquharson et al. (2014) used the R-GORI to examine IEP goals for children with speech sound disorders. These researchers reported that most goals were functional and generalizable but were not targeted easily during daily tasks or by other members of the IEP team. In addition, Boavida et al. (2010) used the R-GORI to examine IEP goals for preschoolers with disabilities. Results of this investigation revealed that goals were not measurable or easy to target within daily tasks and routines.

Taken together, IEP goals are an important aspect of service provision for children with disabilities, but there is substantial variability in the composition of these goals. This variability changes across quality dimensions, depending on the target population (i.e., speech sound disorders). Considering the substantial variability in the symptoms and needs of TBI, it is imperative that researchers thoroughly explore IEP goals for students with TBI. As such, the research questions in the present study are (a) What is the quality of IEP goals written for children with TBI? and (b) Which, if any, of the six dimensions of goal quality were rated particularly high or low for this population? To answer these research questions, we used the R-GORI rating scale. We hypothesized that quality scores would be relatively low due to the diverse nature of this population. Similarly, we hypothesized that measurability would be one of the higher quality dimensions because most IEP goals across a variety of populations have been reported to be measurable. We also hypothesized that the goals may be low in generalizability due to the target behaviors that may be specific to one educational area (e.g., math).

Method

Participants

To address the research questions, we obtained 125 IEP goals from 49 students (34 males, 15 females) with TBI in a Midwestern state. First, the Institutional Review Board (IRB) of the University of Nebraska-Lincoln authorized the researchers to conduct this study and to obtain data from a

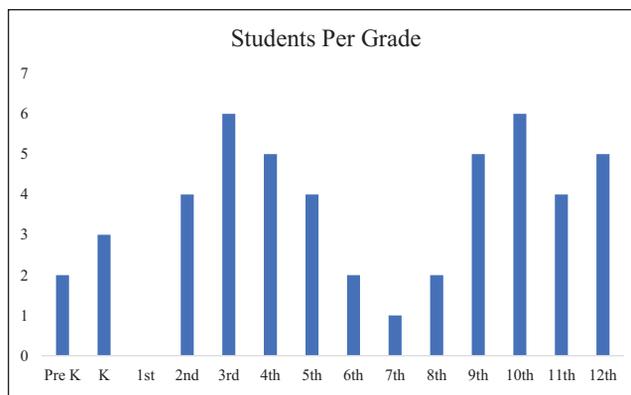


Figure 1. Number of students with TBI per grade.
Note. TBI = Traumatic Brain Injury.

school district; additional IRB approval was obtained from each institution at which an author is employed. This district de-identified all data before providing it to the researchers. In this state, 67% of the total student population is White, 19% is Hispanic, 7% is Black, 4% identify as two or more races, 3% is Asian, and 1% is Native American. The state's high school graduation rate is 89%, which is comparable to state's graduation rate. Most of the student records used for this study came from the second largest school system in the state, which is an urban district in which 46% of the students qualify for free lunch. The district's high school graduation rate is comparable to what is seen at the state level. The IEPs examined in the present study were from students in kindergarten through 12th grade; no students were in first grade. Figure 1 illustrates number of students per grade.

In the present study, most of the students identified as White ($n = 25$); nine students identified as more than one race, six of the students identified as African American, three students identified as Hispanic, three identified as Asian, two identified as Native American, and one identified as Southeast Asian. Information about time since onset (i.e., how long the student had been living with TBI) was available for 38 students (78%). The estimated time since onset ranged from 6 months to 17 years ($M = 6.02$; $SD = 4.2$). On average, students had three goals each (median = 2, mode = 1) with a range from 1 to 8 goals per child. More specifically, 14 students had one IEP goal, 10 had two goals, 10 had three goals, four had four goals, five had five goals, two had six goals, and one had eight goals. Visual inspection of the number of goals across grades did not reveal a pattern that suggested a relation. Conversely, visual inspection of the number of goals between the male and female students revealed that more males had one IEP goal (11 compared to three females) and three IEP goals (eight compared to two females), whereas more females had two goals (seven females, compared to three males).

Goals represented all areas of education (e.g., math), including those targeted by SLPs. Additional details regarding the complete sample of children and IEP components are available in Harvey et al. (2020). All students received services via their IEP under the primary disability category of TBI, and the students had a wide range of TBI etiologies. The following etiologies are those provided by the CDC (2015) and also reflect the language that was used in the child's IEP. The two most prevalent causes of TBI in this sample were non-accidental injury, such as violence from a family member or shaken baby syndrome ($n = 11$) and falls ($n = 11$). Other causes included (ranging from highest to lowest occurrence) sports injuries ($n = 7$), unspecified incident ($n = 7$), hit by car as a pedestrian ($n = 6$), motor vehicle accident ($n = 4$), violence/assault ($n = 2$), and near drowning ($n = 1$). The age of injury onset ranged widely from 5 months to 17 years.

Measure

IEP goals were coded using the R-GORI. This measure was developed by Notari (1988) and published by Notari-Syverson and Shuster (1995). It is freely available here. This rating instrument includes six dimensions of goal quality: observability, measurability, functionality, generalizability, daily tasks, and clarity of goals. A seventh dimension (generality) is available when coding the relations between short- and long-term goals, which was not relevant to the goals within the current study.

Specifically, observability determines whether a goal has a beginning and an end and whether someone can see it or hear it. Measurability determines whether the goal has a measurable qualitative or quantitative component. Functionality determines whether the child needs the task in most or all daily activities. Generalizability refers to whether the goal can be applied across multiple subject areas. The daily task dimension refers to whether the goal can be taught across multiple daily activities. Finally, the clarity of the goal determines whether any person could read the goal and be able to practice it with the child without further explanation from the person who wrote it.

Training Procedures

The training for IEP goal coding included three aspects. First, the PI (second author) and two undergraduate communication science and disorders students reviewed the R-GORI manual independently and then together. The manual includes several example goals and in-depth definitions for each dimension. Second, the PI randomly selected three TBI IEP goals and master-coded them across all six dimensions using the specific criteria determined by the R-GORI (Notari, 1988). For each dimension on each goal, the coding team asked one specific question (see Table 1) to verify the

Table 1. Questions Used for Coding Quality Dimensions and Example Goals.

Dimension	Question to verify presence of a dimension	Example of a goal that received a “1” on this dimension	Example of a goal that received a “0” on this dimension
Observability	Does the target behavior have a beginning and an end, and can it be seen and/or heard?	[name] will participate in family outings by having appropriate behaviors. We will know this goal has been met when the family can go to a friend’s house and eat dinner without [name] screaming and having a meltdown 1 time within the next year. (currently the family is not able to go to a friend’s house).	Given direct skill practice in the needed areas of cooperative skills, sharing adult attention, stating his wants and needs, turn taking and honestly taking responsibility for actions, [name] will improve his relationship skills with peers and adults 95% of the time in social, classroom or problem solving interactions as measured on his daily goal sheet by [date].
Measurability	Can the child’s performance be measured over time either qualitatively or quantitatively (i.e., determine mastery level)?	Given drill and practice, [name] will improve her mixed addition and subtraction facts by demonstrating satisfactory progress from a baseline of 66% accuracy to 80% accuracy as measured by [district measure] by [date].	Given a daily planner and clear directions, [name] will improve his organization skills by writing down his assignments by [date].
Functionality	Does the child need the target behavior to participate in all/most daily activities?	Given instructional strategies and supports, [name] will increase time on task from a baseline of 52% to 75% of opportunities, as measured by an Independent Learning Rating Scale, by [date].	Given appropriate accommodations in a general education math class, [name] will continue to improve his math skills by maintaining a 75% or better as documented in the teacher grade book and district identified assessments by [date].
Generalizability	Can the target behavior be generalized across a variety of settings, materials, and/or people?	During center-time, [name] will use 2-4 word spontaneous and intelligible phrases. We will know he has met this when he is able to use at least 8, 2–4 word phrases per day for 4/5 days verbally or using an assistive device. (currently [name] is using 1 to 2 word phrases)	Given resource support, graphic organizers, and manipulatives [name] will increase his scores on his grade-level math chapter tests from a current baseline of 1’s to 3’s [sic] as measured by grade-level math chapter tests by [date].
Daily Tasks	Can the target behavior be taught across daily activities?	Given visual and/or verbal cues, [name] will express ideas with correct grammar improving from a baseline of 60% accuracy to at least 80% accuracy as measured by the [district measure] by [date].	Given appropriate math instruction, [name] will correctly complete problems in math skills such as money skills including all four operations of computation, time skills including elapsed time, and customary measurement conversion, improving from a baseline of 61% to 80%, as measured by teacher-made tests and commercial tests, by [date].
Clarity of goals	Can the target behavior be taught/addressed by various team members (e.g., teachers, therapists, caregivers)?	Executive Functioning Skills: Given instructional strategies and supports, [name] will use appropriate attention, planning, and initiation skills improving from an average score of 3.5 to an average score of 4.0 as measured by the SLP 4 Point Executive Functioning Rubric-Attention, Planning, Initiation Rubric (Modified) by [date].	Given instruction and support, [name] will increase her math grade from a baseline of 78% to a goal of at least 90% as measured by teacher records by [date].

Note. A score of 1 indicated a positive rating of the dimension. Goals are copied verbatim, with identifying information about the child or district redacted. SLP = speech-language pathologists.

Table 2. Examples of Goals That Received the Highest and Lowest Scores on the R-GORI.

Example of goal that received an overall score of 6	Given opportunities for X to construct a sentence to express a want, need, or a comment during a conversation, X will expand the average length of sentences during each opportunity, improving from a baseline of five words with prompts to a minimum of eight words without prompts, as measured by the SLP Mean Length of Utterance chart by [date]
Example of goal that received an overall score of 1	Given appropriate accommodations in a general math class, X will continue to improve her math skills by showing mastery of tested Math skills (where mastery is scoring 80% or better on items using those skills) from a baseline of 50% to 80% by [date].

Note. The goal that received a score of 1 was rated positively on the dimension of measurability only. R-GORI = Revised IEP/IFSP Goals and Objective Rating Instrument; SLP = speech-language pathologists.

presence or absence of that dimension. Goals were rated for observability, measurability, functionality, generalizability, application in daily tasks, and clarity of goals, by answering the questions in Table 1. Then, each goal was assigned a binary score of 0 or 1 for each of the six dimensions. Specifically, if the coders asked themselves the observability question (i.e., Does the target behavior have a beginning and end and can it be seen or heard?) and the answer was “yes,” the coder gave that goal a score of 1 for the dimension of observability. If the answer to the question was no, the coder gave that dimension a score of 0 for that goal. As an example, for the first goal in Table 1, “relationship skills” are not visible or audible according to the phrasing of this question. Thus, this goal received a score of 0 for the observability dimension. Next, the students coded all three master-coded goals, and the PI reviewed their responses. The PI and students resolved any conflicts via discussion. Inter-rater reliability was 92% for the master-coded goals. Once the students completed this stage of coding training, they began coding goals in the full dataset. Table 1 also includes example goals for each dimension. Notably, the subjects, names, district-level measures, and specific dates were redacted for all goals to protect participants’ identity.

Data Coding

The researchers repeated the above coding process for each of the six dimensions across all 125 IEP goals. Then, the scores were summed to obtain an overall score for each goal. The lowest possible overall rating for any one goal was 0 (i.e., the six-dimension questions for this goal were all answered “no”), and the highest possible overall rating was 6 (i.e., the six-dimension questions for this goal were all answered “yes”).

Reliability

The two undergraduate students each coded one half of the full set of 125 goals: one coded 62/125 (50%) goals and the other coded 63/125 (50%) goals. Then, the two coders exchanged 13/63 (20%) of their coded goals and re-coded

them without seeing the original coder’s responses. The second author (PI) compared the coding between the undergraduate students and reached 73.08% reliability. This is relatively low in comparison to the goal of 80% reliability. Most of the coding discrepancies were in the category of generalizability (14 out of 41 discrepancies, or 34%). The second author settled all discrepancies in coding.

Results

Research Question 1: IEP Goal Quality

To answer the first research question on IEP goal quality for students with TBI, the authors used descriptive data, including the means, medians, and ranges for the overall sum scores from the R-GORI. The value for each dimension was summed for each goal, and an overall sum score was determined. This sum score could range from 0 to 6. A sum score of 0 would indicate that every indicator on the R-GORI received a score of 0. A sum score of 6 would indicate that every indicator on the R-GORI received a score of 1. In the current sample, we rated IEP goals for children with TBI with an average score of 3.74, with a range of 1 to 6, and a median of 4. Table 2 includes an example of a goal that received an overall score of 6 (highest in the sample) and an example of a goal that received an overall score of 1 (lowest in the sample). Table 3 shows the number and percentage of IEP goals, out of 125, that received each possible sum score. For instance, 23% or 18% of the 125 IEP goals received a sum score of 3.

Research Question 2: Highest Quality Dimensions

To answer the second research question regarding which quality dimensions were particularly high or low for this population, we examined the percentage of goals coded positively and negatively for each individual dimension of the R-GORI. In other words, we investigated which goals received a score of “1” or a score of “0” in our binary coding scheme. Table 4 shows the percentages of the goals that

Table 3. The Number and Percentage of IEP Goals That Received Each Possible Sum Score.

Sum score	Number (percentage) of IEP goals with each possible sum score
0	0 (0%)
1	7 (5%)
2	21 (16%)
3	23 (18%)
4	39 (28%)
5	16 (12%)
6	19 (15%)

Note. IEP = Individualized Education Plan.

Table 4. The Number and Percentage of IEP Goals Rated Positively for Each R-GORI Quality Dimension.

Dimension	Number (percentage) of goals rated with a score of 1	Number (percentage) of goals rated with a score of 0
Observability	83 (66.4%)	42 (33.6%)
Measurability	120 (96.0%)	5 (4%)
Functionality	67 (53.6%)	58 (46%)
Generalizability	50 (40.0%)	75 (60%)
Daily tasks	59 (47.2%)	66 (52%)
Clarity of goals	89 (71.2%)	36 (28%)

Note. IEP = Individualized Education Plan; R-GORI = Revised IEP/IFSP Goals and Objective Rating Instrument.

received a score of 1 or a 0 for each R-GORI dimension. For example, 50 out of 125 goals, or 40% of the total goals, met criteria for the category of generalizability. As seen in Table 4, the category of generalizability had the lowest score, and the category of measurability had the highest score.

Discussion

The purpose of the current study was to examine the IEPs goals for children with TBI. To answer this study's research questions, the authors used descriptive data from the R-GORI rating scale to evaluate the quality of the IEP goals. This is an important area of investigation because students with TBI present with a wide variety of symptoms/difficulties, and they need highly tailored supports to aid their learning. Also, these children typically struggle with issues that can span across multiple areas of functioning, including cognitive communication areas, which might affect their performance in all school subjects (Ettel et al., 2016; Popernack et al., 2015). In response to our first research question, we found that on a scale of 0 to 6, the quality scores were average ($M = 3.74$); however, when compared to goal quality scores from previous investigations, the TBI IEP goals were higher. In answering our second research question, we identified two considerable findings: (a) the majority of the goals in this study were measurable and (b) the majority of the goals in this study were not generalizable. These findings are discussed in detail in the following.

Our first finding is that the goal scores for children with TBI varied, but they were largely considered average on the six-point scale. That is, on a scale from 0 to 6, a score of three would be considered average. The mean score for our sample was 3.74, which we interpret as average. We hypothesized that the quality scores would be relatively low (i.e., between 0 and 2) because the number of students with TBI is small and diverse in nature. Indeed, previous research shows that a large proportion of children with TBI do not receive services (Schutz et al., 2010), and according to reports from special education directors, they are often not accurately identified (Glang et al., 2015). This may happen, in part, because the TBI might not be reported (Escobar et al., 2016) or not reported to the appropriate personnel at the time of school entry (Haarbauer-Krupa et al., 2018). It is also possible that teachers do not recognize the symptoms of or attribute these symptoms to TBI, which result in behavioral reports instead of documentation of the challenges subsequent to the TBI (Clark et al., 1999; Ettel et al., 2016).

Indeed, there is evidence that a lack of training specific to the needs of children with TBI may result in inappropriate services and instruction (Hux et al., 2013). However, it is possible that because so many different educational professionals work with these children (e.g., general and special education, SLPs, occupational and physical therapists, etc.) as opposed to children only receiving SLP services (e.g., a child seen for articulation treatment), the quality of the goals is higher simply because more professionals are

reviewing and contributing to them. Similarly, as the majority of the data came from one school district, it is possible that professionals in this district are proficient at writing goals, compared to the other samples from previous literature. These findings contribute to the literature because they suggest that, in general, the educational professionals working with this population of students are more adept at writing IEP goals that are measurable and clear. However, the findings also reveal a need to study goals from children with TBI in a variety of school districts to better understand the generalizability and application of these results.

It is also important to highlight some potential issues that exist with the R-GORI measurement tool. For instance, it is possible that a measurable goal may not be considered a high-quality goal if it is also not functional, allowing the child to participate in all aspects of his or her education. Likewise, the measurability of the goal may not be relevant if the skill cannot be taught to the child through daily activities. In this way, we encourage educators to think about the relevance of the goals to individual child's needs while also ensuring that goals are of high quality. This will vary substantially across educators, districts, states, and populations of children. As one example, when using the R-GORI to measure the quality of IEP goals for children with speech sound disorders, Farquharson et al. (2014) found that goal quality was much lower than the average scores reported in the present study (i.e., 2.86 compared to 3.74). The goals in Farquharson et al. (2014) indeed differed in the sample of children, the state, and the educators. However, the same instrument—used by coders trained in the same ways—did result in quality scores that are higher for children with TBI when compared to children with speech sound disorders. Other researchers have similarly reported goal quality scores that are lower than in the present study. Specifically, Boavida et al. (2010) reported that the average quality score of language goals for preschool children with disabilities was 2.46. Notably, the Boavida and colleagues (2010) study took place in a preschool in Portugal. Although these public school systems legally require IEPs, the legislation behind documentation and associated services differ greatly.

Our second finding was that the vast majority of goals in this study were measurable. Although we predicted that most goals would be measurable, we did not anticipate that it would be the case for 96% of the goals. Measurability is one of the most straight-forward dimensions of the R-GORI. However, previous research has not always reported high IEP goal measurability. For instance, Pretti-Frontczak and Bricker (2000) examined the quality of IEP goals written by teachers as part of a teacher training workshop. During the workshop, teachers learned about IEP goal quality using the GORI (the original version of the measure used in the present study). These researchers reported relatively low measurability ratings prior to the training and substantial improvements after. In the present study, it is important to

note that this sample of students were all from the same state, with the majority from one major school district. Thus, it is possible that this school district has a systemic approach to goal writing taught to educators, or they specifically train their employees on how to ensure that goals are measurable. Notably, a goal could be measurable by including an expected percentage of accuracy; however, that percentage may not be the best way to measure a behavior that may plausibly only have four trials. That is, if there is only an opportunity to apply a behavior or skill 4 times in the span of a class, the student would not be able to achieve a goal of 80% or 90% accuracy. Thus, it is important to not just consider these dimensions in isolation, but also in the nuanced ways that they interact to create high-quality goals.

The last major finding was that most goals were not generalizable. This was aligned with our initial predictions. We hypothesized that generalizability would be a difficult category because of the possible ambiguity of certain target skills. For instance, as our sample included a broad range of educational goals, we knew that certain math skills may not be as generalizable to a variety of settings. In addition, given that we focused on children with TBI, we anticipated seeing goals that would include specific strategies for certain contexts that may not be appropriate in all settings (e.g., a tool to regulate a student's hygiene practices would not apply to their coursework but would be a necessary special education goal; students with attention challenges do not experience those challenges in the same way across subjects, due to interest level).

Indeed, we did find some ambiguity with the generalizability indicator, and this may be related to issues with the R-GORI as a rating tool. That is, according to the R-GORI, generalizability occurs when the target behavior is more generic (e.g., manipulating objects) instead of specific (e.g., cutting with scissors). In addition, the goal must not refer to specific settings, materials, or people. In this way, goals that referred to the use of specific curriculum-based measures were not considered generalizable. Similarly, if a goal referred to a behavior that only one professional (e.g., SLP or occupational therapist) would target during treatment sessions then it was not generalizable. This may also raise a question of the importance—broadly—of ensuring that every goal is always generalizable. It is likely the case that certain skills may need to be taught discreetly, in certain settings, with certain materials, or with certain people to best support the specific stage of development for a particular child. For instance, working on feeding skills may be most appropriate in the cafeteria; working on memory strategies may be best targeted initially in a small group with the SLP. As such, there is a need to further investigate generalizability and define a distinct way that professionals can determine whether their goal has met this category. Similarly, teams should determine what may be best for an individual child, even if the skill or the materials are not

generalizable quite yet. Note that, for our coding purposes, most inter-rater differences were in this category. As such, we would like to see further research to advance and clarify this quality dimension for a variety of populations of children.

Limitations

While this study provided us with distinct and useful findings, there are several limitations. The most obvious limitation is that the majority of the IEPs came from one school district. A comparison among school districts may have provided better insight on the quality of these goals nationwide. In addition, we did not have all the demographic information for the children in this study. For example, we do not know whether all the children came from one socioeconomic status, or whether the status varied widely. As a result, we cannot conclude with certainty that goal quality was not influenced by some external demographic factor. Another limitation is that we did not have access to the SLPs and educators who wrote these goals. If we had more information about the goal writers, we would have a better understanding of their prior knowledge on goal writing and clinical experience. For example, they may have been able to tell us that they had all recently received training in goal measurement, new curricula standards, or other such information that may have explained our overarching findings.

Conclusions and Future Directions

In conclusion, this sample of goals for children with TBI were written with average quality. They were rated as higher quality than those written for children with other disabilities (e.g., speech sound disorders), but there is still work to be done to improve the quality across various dimensions. Future research could explore the inter-relations between certain goal quality indicators. For example, although measurability is important, it can be somewhat meaningless without functionality. We also think it would be interesting to analyze the quality goals by content category to determine specific quality differences. Longitudinal studies should explore the relations between quality of goals and treatment sessions and the quality of goal implementation. Ultimately, this kind of future work will substantiate the clinical and educational importance of carefully tailoring IEPs to the unique needs of children with TBI. The current study contributes to the literature as it informs professionals about specific aspects they should consider when writing IEP goals for children with TBI.

Authors' Note

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