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ORIGINAL PAPER

Parent Training for Youth with Autism Served in Community Settings: A Mixed-Methods Investigation Within a Community Mental Health System

Diondra Straiton[1] · **Barb Groom**[2] · **Brooke Ingersoll**[1]

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Abstract
Parent training programs focus on parent knowledge and/or skill development regarding strategies to improve child outcomes. Parent training programs are considered evidenced-based treatments for autism spectrum disorder (ASD). Yet little is known about parent training use for youth with ASD served in community settings. This mixed methods project examined parent training for Medicaid-enrolled youth with ASD under age 21. Data were obtained from Medicaid claims for 879 youth and surveys from 97 applied behavior analysis (ABA) providers. Open-ended survey items were analyzed with content analysis. Results demonstrated that the frequency of parent training was low and providers' conceptualization of parent training was inconsistent with evidence-based models. Providers are largely unaware of evidence-based components (i.e., modeling, caregiver practice with feedback) and use them infrequently. Implications for increasing parent training in community settings are discussed.

Keywords Parent training · Autism · Community mental health · Medicaid

Introduction

Autism spectrum disorder (ASD) is a developmental disorder characterized by pervasive deficits in social communication and a pattern of restrictive and repetitive behaviors (American Psychiatric Association 2013) Parent[1] training is an intervention approach in which providers train parents to serve as agents of behavior change, with the child as the direct beneficiary of treatment (Bearss et al. 2015). Service options like parent training can be leveraged to increase service access and involvement for families of children with ASD because they promote strong family-provider partnerships and result in improved child outcomes (Brookman-Frazee and Koegel 2004). Parent training is an effective treatment option for teaching social communication (Ingersoll et al. 2016; Kasari et al. 2010), decreasing disruptive behavior (Bearss et al. 2015), and improving adaptive skills in youth with ASD (Scahill et al. 2016). It is important to note, however, that most parent training programs have been tested in children with ASD between the ages of 19 months to 84 months and none have been tested with young adults. Nevertheless, the National Clearinghouse on Autism Evidence and Practice Review Team conducted a recent systematic review that determined that parent training interventions are an evidence-based practice to treat youth with ASD from toddlerhood through high school (Steinbrenner et al. 2020).

Parent training has a number of advantages in the treatment of children with ASD compared to provider-delivered interventions. First, it can increase the dosage of treatment that a child can receive, as the parent can continue implementing the intervention even when the provider is not present. In addition, parent training can promote skill generalization because the parent has more flexibility than most providers do in implementing the intervention in multiple contexts (Koegel et al. 1982). Furthermore,

✉ Diondra Straiton
straiton@msu.edu

[1] Department of Psychology, Michigan State University, 316 Physics Rd, East Lansing, MI 48824, USA

[2] Mid-State Health Network, 530 W Ionia St, Lansing, MI 48933, USA

[1] Because the literature on parent training typically utilizes the term "parent" to refer to all types of caregivers, the term "parent" has been used herein for consistency, with recognition that this term is being used to refer to any biological, legal, familial or non-familial primary caregiver.

parent training can lead to broader improvement in family functioning, as it has been shown to increase parent self-efficacy (Karst and Van Hecke 2012) and reduce parental stress (Iadarola et al. 2018; Ingersoll et al. 2016; Koegel et al. 1996). Given these benefits, parent training is considered a best practice in the treatment of children with ASD (Steinbrenner et al. 2020; National Autism Center 2015; Wong et al. 2015).

Little is known about the use of parent training for youth with ASD served in community settings. However, the few studies that have explored this to date have demonstrated that parent training is underutilized (Hume et al. 2005; Thomas et al. 2007). For example, one community-based study found that only 21% of parents of a child with ASD aged 8 or younger reported ever having received parent training (Hume et al. 2005), while another study found that only 10% of families with a child with ASD received parent training (Thomas et al. 2007). However, these studies used survey data that relied on parents' self-report. Also, it is unclear that the parent training that these families received is consistent with evidence-based practice, as the term "parent training" is frequently used to represent a variety of types of programming (e.g., parent-mediated programs, parent support programs, reviewing therapy progress with parents; Bearss et al. 2015). It is important to establish the quality of parent training that families receive, as research suggests that parent-mediated programs result in improved child outcomes, while parent support programs do not (Kasari et al. 2015).

Evidence-based parent training for children with ASD is primarily drawn from the behavioral skills training (Reid and Parsons 1995) or parent coaching (Casagrande and Ingersoll 2017; Rush and Shelden 2011) literature. Although there is variation across models, most evidence-based programs include, at a minimum, verbal instruction in the intervention strategy, provider modeling of the intervention strategy for the parent to observe, and time for the parent to practice the intervention strategy while receiving feedback from the provider (e.g., Behavioral Skills Training model; Ward-Horner and Sturmey 2012). Indeed, Barton and Fettig (2013) have identified parent training strategies, including: (1) collaborative goal-setting with parents, (2) modeling with video or live demonstration of intervention techniques, (3) providing time for parent practice, (4) providing feedback to parents, (5) planning or reflecting on parents' use of intervention techniques at home, (6) providing written materials or manuals to support parent learning, and (7) problem-solving barriers to parents' use of the intervention techniques. Most evidence-based models involve frequent parent training sessions, ranging from once a week for 12 weeks (Hardan et al. 2015) to 2–3 times per week over nine months (Wetherby et al. 2014).

Parent Training in the Michigan Medicaid Autism Benefit

In the State of Michigan, policies were recently developed to better promote family-provider partnerships for Medicaid-enrolled families of youth with ASD. In 2012, the Medicaid Autism Benefit for Behavioral Health Treatment (BHT) was created for the state's community mental health system under the auspices of the Michigan Department of Health and Human Services. This legislation allowed for Medicaid-enrolled families of youth with ASD to receive intensive applied behavior analysis (ABA) services. These ABA services include parent training sessions delivered by a Board Certified Behavior Analyst, Board Certified Assistant Behavior Analyst, or another "qualified behavioral health professional" with a master's degree and training in ABA (e.g. limited licensed psychologist, licensed clinical social worker). Within the Medicaid Autism Benefit, eligible parent training sessions focus on "treatment guidance" to systematically train parents/guardians on ABA strategies to use with the client; in this system, parent training can incorporate a large variety of programs, interventions, and services related to caregiver implementation of ABA. Legislation related to the Medicaid Autism Benefit led to community mental health agencies in Michigan becoming the primary mechanism for ABA service delivery for youth served by the Medicaid system in Michigan. Thus, Michigan community mental health agencies provide a natural environment to observe providers' parent training practices in community settings.

Present Study

The present study used mixed methods in an effort to characterize providers' use of parent training for youth with ASD served by community mental health agencies. We utilized 2 data sources: (a) Medicaid claims data of parent training sessions for 879 youth served by 12 community mental health agencies across 21 counties, and (b) survey data from 97 community mental health ABA providers, including written responses to open-ended items on the survey.

This project was exploratory in nature. Our research questions were as follows: (1) What are the rates and frequency of parent training sessions for Medicaid-enrolled youth with ASD served by community mental health agencies? (2) What are the format and content of these parent training sessions? (3) To what extent do ABA providers use evidence-based parent training strategies when they deliver parent training in community mental health agencies? and (4) How do ABA providers conceptualize parent training?

Table 1 Medicaid claims participant demographic information (N = 879)

	n	%	M	Range
Age (years)	–	–	7.39	1–20
Gender				
Male	697	79.3%	–	–
Female	182	20.7%		
Race				
White	624	71.0%	–	–
Black	107	12.2%	–	–
Asian	5	0.6%	–	–
American Indian/Alaskan Native	0	0%	–	–
Missing	11	1.3%	–	–
Ethnicity			–	–
Hispanic/Latino	95	10.8%	–	–
Not Hispanic/Latino	784	89.2%		

Methods

Design

We utilized a convergent QUAN + qual mixed method design (Palinkas et al. 2011), in which Medicaid claims and an ABA provider survey were analyzed in parallel to characterize the parent training practices of ABA providers that were delivering services to youth with ASD through the Medicaid Autism Benefit. Content analysis was utilized to analyze ABA providers' definitions of parent training, with differentiation between ABA providers' descriptions of best practices from the literature (Bearss et al. 2015) and other strategies that they described as part of parent training. Qualitative data built upon quantitative data and provided a more in-depth understanding of current ABA provider practices with Medicaid-enrolled families of youth with ASD.

Medicaid Claims

Deidentifed Medicaid claims for the time period of October 2017 through March 2018 were obtained from one of 10 regional Prepaid Inpatient Health Plans (PIHP) contracted in Michigan. This PIHP oversees all services provided by 12 community mental health agencies across 21counties in the Mid-Michigan region. Claims data for all Medicaid-enrolled clients with a documented ASD diagnosis who received services as part of the Medicaid Autism Benefit were analyzed for 879 individuals who were under 21 years old. See Table 1 for participant demographic information. The total number of one-on-one, group, and telehealth parent training encounters received by each eligible client were extracted for the six month time period of October 2017 through March 2018. Parent training sessions billed through the Medicaid Autism Benefit were at least 15 min long, with recommended session lengths of 45 min.

ABA Provider Survey

We created a survey for ABA providers who work with clients enrolled in the Medicaid Autism Benefit to further understand their current parent training practices. This anonymous survey was administrered to ABA providers via Qualtrics, an online software used for data compilation and analysis (www.qualtrics.com). A pilot version of the survey was emailed to the 34 agency leaders who supervise ABA services within 1 region in the state. Twenty-one agency leaders (62%) provided feedback on survey language and formatting. After the agency leaders' feedback was incorporated into the survey, administrators from three regions of the state helped recruit participants by sending the survey link directly to their ABA providers' email addresses or providing the research team with those email addresses. ABA providers wrote in their definition of parent training prior to responding to other items in the survey which asked about specific evidence-based components of parent training sessions.

Participants

One hundred and fifty-five ABA providers responded to the survey and were screened out via survey branching logic if they were not eligible to bill for parent training sessions through the Medicaid Autism Benefit. One hundred and two providers provided complete data. Upon inspecting the data, the research team determined that 5 providers did not meet eligibility criteria even though they had taken the survey; therefore, they were removed from the sample. The final sample thus had 97 ABA providers. At least 294 ABA providers received the survey from their administrators. However, it is possible that the survey was forwarded to other providers. Because the survey was anonymous, it is not possible to calculate the exact response rate, but the upper bound of the response rate was 33% (97 out of 294). Participants were primarily Board Certified Behavior Analysts (BCBAs; 59.8%) or other "Qualified Behavioral Health Professionals" with master's-level degrees (e.g. limited licensed psychologists; 26.8%). To be included, ABA providers had to have at least one client on their caseload who was: (a) diagnosed with ASD; (b) under the age of 21; and (c) utilized ASD-related services using Medicaid funds. All participants were provided with informed consent prior to their participation in the study and received a $5 Amazon gift card for participation. See Table 2 for ABA provider demographic information from the survey.

Table 2 ABA provider demographic information

ABA provider survey (N = 97)				
	n	%	M	Range
Age (years)	–	–	36.23	22–64
Gender				
Female	79	81.4%	–	–
Race/ethnicity				
White	84	86.6%	–	–
Black	2	2.1%	–	–
Asian	1	1.0%	–	–
American Indian/Alaskan Native	3	3.1%	–	–
Hispanic/latino	3	3.1%	–	–
Prefer not to answer/missing	2	2.0%	–	–
Role				
BCBA	58	59.8%	–	–
BCaBA	5	5.2%	–	–
Social worker	1	1.0%	–	–
Psychologist	2	2.1%	–	–
Other QBHP[a]	26	26.8%	–	–
Other	4	4.1%	–	–
Prefer not to answer/missing	1	1.0%	–	–
Certification				
BCBA	58	59.8%	–	–
BcaBA	5	5.2%	–	–
None	34	35.1%	–	–
Primary location of service			–	–
Client's home	41	42.3%	–	–
Agency-based school/center	47	48.5%	–	–
Other	9	9.3%	–	–

[a]QBHP stands for Qualified behavioral health provider

Measures

ABA Provider Demographic Information

ABA providers reported on their gender, age, race and ethnicity, educational attainment, disciplinary background, professional role, professional certifications, employment setting (community mental health agency, contracted agency, or private practice), caseload, hours of overall service provision within the Medicaid Autism Benefit, and years of experience in working with clients with ASD and in using parent training.

Frequency of Parent Training Use

Using a 5-point Likert scale, ABA providers indicated the average number of encounters per month of parent training that they delivered to a typical Medicaid-enrolled client by responding to the following item: "On average for a typical client with ASD receiving the Medicaid Autism Benefit, approximately how many family training encounters do you provide per month?" The Likert scale ranged from 1 to 5 [No encounters per month (1); 1–2 encounters per month (2); 3–4 encounters per month (3); 5–8 encounters per month (4); More than 8 encounters per month (5)].

Format of Parent Training Encounters

ABA providers indicated the format in which they deliver parent training: one-on-one with a family or in a group format with multiple families. Providers were able to mark all options that applied.

Content of Parent Training Encounters

ABA providers indicated the skill areas that they targeted in their parent training sessions from a list of 5 possible content areas: principles of applied behavior analysis, including behavior management; communication skills; play skills; social interaction skills; self-care skills; and educational/academic support. ABA providers could also write in additional content areas.

Quality of Parent Training

ABA providers used a 5-point Likert scale to describe the frequency with which they use the following parent training strategies (Barton and Fettig 2013) with a typical client [Not at all (1); Very much (5)] during the previous 6 months: (1) collaborative goal-setting with parents, (2) modeling with video or live demonstration of intervention techniques, (3) providing time for parent practice, (4) providing feedback to parents, (5) planning or reflecting on parents' use of intervention techniques at home, (6) providing written materials or manuals to support parent learning, and (7) problem-solving barriers to parents' use of the intervention techniques.

ABA providers also indicated whether or not they use manualized parent training interventions with their clients served through the Medicaid Autism Benefit. This list of manuals was developed using an iterative process in which (a) the authors listed evidence-based manuals commonly cited in the parent training literature for ASD, and then (b) during survey pilot testing, regional administrators wrote in additional manuals or programs that were commonly utilized in their community mental health agency. The final survey included all manuals and online programs listed by the authors and the administrators, as well as an option for participants to write-in other manuals and/or online programs.

Conceptualization of Parent Training

ABA providers provided a written response to the following open-ended item in the survey: Please describe what

the term "family training"[2] means to you. This item was presented before any other items that pertained to parent training usage to avoid biasing ABA providers towards a specific conceptualization.

Data Analysis

Medicaid Claims

Descriptive statistics were used to characterize the percent of eligible youth who received at least one parent training encounter over 6 months in individual, group, or telehealth sessions. The average frequency of parent training encounters received over the 6 month period was calculated for the full sample and for youth who received at least 1 encounter of parent training.

ABA Provider Survey

Quantitative Analyses Descriptive statistics were used to characterize ABA providers' reported frequency of parent training use, format and content of parent training sessions, manualized parent training program use, and quality of parent training.

Qualitative Analyses Content analysis was employed to analyze ABA providers' responses to an open-ended survey item to characterize their conceptualization of parent training. ABA providers' definitions of parent training were copied verbatim from the survey and uploaded to Dedoose 7.5.9, an online program for analyzing qualitative data. The content analysis process included 3 phases: (1) coding: identifying patterns and concepts within the data, (2) categorizing/organizing: grouping codes into categories using an iterative process, ensuring that all codes fit within categories, (3) counting the frequencies of all categories and subcategories, and (4) forming themes: returning to the "big-picture level" and determining how the categories are related (Mayan 2016; Vaismoradi et al. 2013). Memos and in-depth discussions were used to develop codes. Novice coders then took code application tests using the Dedoose program to determine their reliability with the lead coder (D.S.). Training was completed when novice coders reached a level of agreement at Cronbach's alpha of 0.70 or higher for three code application tests in a row. Coding and categorization began when coders met the agreement criteria. All definitions were independently analyzed by two coders and any discrepancies were resolved by consensus.

During the coding process, both inductive and deductive approaches to qualitative content analysis were used. Initial codes were derived deductively from a taxonomy of parent training interventions for ASD developed by Bearss et al. (2015). Open coding was also used to note additional codes present in the data. Final codes included: general psychoeducation, instruction of intervention strategies, modeling of intervention strategies, providing opportunities for caregiver practice and/or providing feedback to caregivers, checking in with families, treatment development and/or planning, unspecified efforts to support intervention strategy use, care coordination, social-emotional support of family members, and stress management.

Categorization occurred once codes were applied to all definitions, yielding the explicit and surface-level aspects of parent training conceptualization (Vaismoradi et al. 2016). Themes were then abstracted across categories, integrating the underlying meanings of categories and providing a broader context of interpretation. Theme formation occurred after the categorization process and provided manifest (descriptive) content (Vaismoradi et al. 2013, 2016).

Results

Rates and Frequency of Parent Training Sessions

Medicaid claims and the ABA provider survey were analyzed to determine the rates and frequency of parent training encounters provided to Medicaid-enrolled youth with ASD in Michigan.

Medicaid Claims

Eight hundred and seventy-nine youth received services through the Medicaid Autism Benefit during the time period examined. Claims indicated that the mean number of parent training encounters for youth was 1.50 encounters over the 6 months ($SD = 2.29$; range 0–19). Additionally, only 55.1% (n = 484) of the sample received at least one parent training encounter over the 6 months; 44.9% of youth received no parent training encounters. We also examined the frequency of parent training encounters for those clients who received at least one parent training encounter. The mean number of parent training encounters for youth who received at least one encounter was 2.73 ($SD = 2.48$), which corresponds to less than 1 session every other month ($M = 0.46$, $SD = 0.41$). Only 2.7% of youth in the sample received at least 8 encounters of parent training over the six months, a frequency consistent with lower-intensity parent training models (e.g., Hanen's "More Than Words" Intervention; Carter et al. 2011). No youth received 20 or more encounters of parent training, a frequency seen in higher-intensity models (e.g.,

[2] "Family training" is the term used in the community mental health system.

Table 3 Frequency of parent training encounters in medicaid claims and ABA provider survey

Data source	N	Client receipt of PT over 6 months	# of PT encounters per month	
ABA provider survey	97	95.9% report providing at least 1 encounter to the average client	0	2.1%
			1–2	74.2%
			3–4	17.5%
			5–8	0%
			> 8	1.0%
Medicaid claims	879	55.1% of clients received at least 1 encounter	*M* = .46 encounters/month for those who received PT	

Project ImPACT, Ingersoll and Dvortcsak 2019; Early Start Denver Model, Rogers et al. 2012).

ABA Provider Survey

In contrast to the Medicaid claims, 95.9% of surveyed ABA providers reported providing parent training to the average client at least once in the past 6 months, with the majority of ABA providers (74.2%) reporting providing 1–2 encounters per month to the average client. See Table 3 for a comparison of the frequency of parent training encounters as seen in the Medicaid claims data and the ABA provider survey.

Format and Content of Parent Training Sessions

Format

Both data sets provide convergent evidence that providers primarily use individual parent training sessions (98.3% of Medicaid claims and 94.8% of survey responses) rather than group parent training (3.4% of Medicaid claims and 9.3% of survey responses). Medicaid claims data indicated that only 10 youth (1%) received parent training via telehealth, and all of those clients were from the same community mental health agency.

Content

On the survey, ABA providers reported covering a range of content in parent training sessions, including principles of applied behavior analysis (90.7%), communication skills (87.6%), self-care skills (85.6%), social skills (84.5%), educational/academic support (58.8%), and other content (8.2%). Addressing maladaptive behavior was the most frequently described category that ABA providers wrote in for other session content (3.1%).

Thirty-six percent of ABA providers reported on the survey that they have used a manualized intervention with Medicaid-enrolled clients during parent training sessions. However, only 24% of providers reported using manuals that were empirically supported by at least 1 study in which the treatment group outperformed a control group (or the study utilized a rigorous single-case design). These empirically supported manuals included: Early Start Denver Model, Triple P Positive Parenting Program, Parent–Child Interaction Therapy, Project ImPACT, Floortime, Helping the Noncompliant Child, and Defiant Children. Eight percent of ABA providers used manuals that primarily focused on social communication, while 13% used manuals that primarily focused on behavior management. Twenty-three percent of ABA providers also reported using online parent training programs that were based in principles of applied behavior analysis but not empirically supported by research. Thirteen percent of providers endorsed using "other" manulized parent training interventions.

Strategies Used in Parent Training Sessions

ABA Provider Survey

ABA providers indicated the frequency at which they use a variety of evidence-based strategies during their parent training sessions. See Fig. 1 for mean frequency ratings. To determine whether strategies were used at significantly different frequencies, a repeated measures ANOVA was conducted (Fig. 1). The ANOVA indicated that there were significant differences among the reported frequencies of strategy use, $F(6, 546) = 43.75$, $MSE = 29.28$, $p = < 0.001$. Pairwise comparisons indicated that frequencies for modeling, time for parent practice, and providing written materials were least frequently used and had frequencies that were significantly different from every other strategy. However, frequencies for problem-solving issues around the implementation of intervention strategies at home, collaborative goal-setting, providing feedback on parents' use of strategies, and planning and reflecting on parents' use of intervention strategies at home were not significantly different from each other.

Conceptualization of Parent Training

Content analysis was used to analyze ABA providers' definitions of parent training from the survey. A total of 5

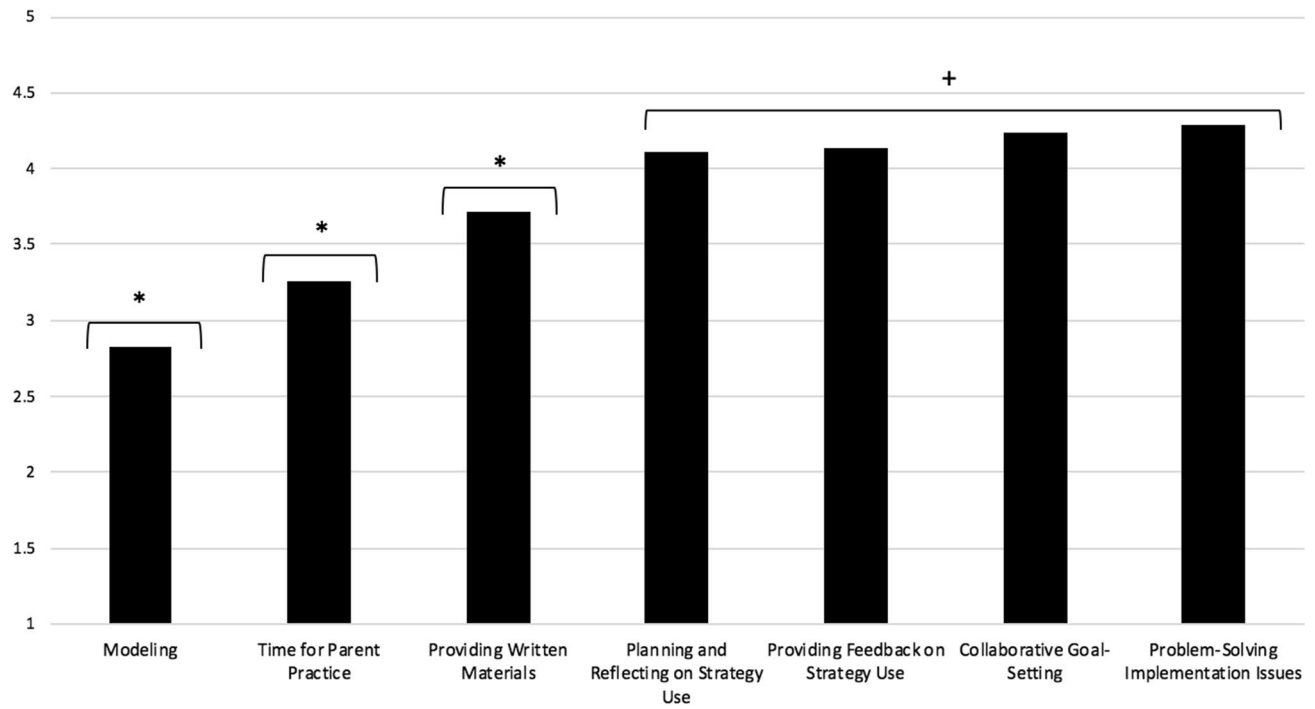

Fig. 1 Differences in the Frequencies of Evidence-Based Strategy Use Endorsed in the Survey. Note: Strategies bracketed with *are significantly different from all other strategies. Strategies bracketed with + are not significantly different from the other strategies within that bracket. 1 = Not at All; 5 = Very Much

categories and 1 subcategory were identified. The first category represented mentioning any evidence-based strategies to be used in a parent training session: (a) instruction in an intervention strategy, (b) modeling, and/or (c) caregiver practice and/or feedback. The evidence-based strategies category was divided into a subcategory that represented the use of an evidenced-based training package that contains all three strategies, such as the Behavior Skills Training model. The second category was treatment management (treatment development/planning and checking in with families about progress). The third category included parent support strategies (care coordination, stress management, providing social-emotional support to family). The fourth category included general psychoeducation about ASD, ABA, available services, or the Autism Benefit. A fifth category encompassed definitions that outlined vague, unspecific efforts to support the family to implement intervention strategies with their child. See Table 4 for a list of categories and representative ABA provider definitions.

Providers frequently mentioned general psychoeducation about ASD or services (53%), treatment management (46%), and parent support strategies (25%). This conceptualization of parent training is inconsistent with the scientific literature that empirically supports parent training interventions. In contrast, providers infrequently spontaneously mentioned using evidence-based strategies to be used in parent training sessions: instruction in an intervention technique, modeling the technique, and providing time for caregiver practice of the technique with provider feedback. Specifically, 37% percent of providers mentioned instruction, 17% mentioned modeling, and 10% mentioned practice and/or feedback.

After reviewing all categories, a general theme emerged: providers utilize parent training sessions for a variety of other purposes than systematically teaching intervention techniques. While 45% of providers mentioned at least one evidence-based strategy, only 6% mentioned all three or a specific parent training package/approach that incorporates all three (e.g., Behavior Skills Training). In fact, no provider mentioned all three evidence-based strategies unless they mentioned using an evidence-based package of strategies. Only 6 providers mentioned an evidence-based package of strategies, and 5 of the 6 providers that did so mentioned the Behavior Skills Training approach (an ABA-based approach that includes all three strategies).

Discussion

Our aims for this study were as follows: (1) Describe the rates and frequency of parent training sessions for Medicaid-enrolled youth with ASD served by community mental health agencies, (2) Describe the format and content of these parent training sessions, (3) Explore to what extent ABA providers used evidence-based parent training strategies, and

Table 4 Categories in provider definitions of parent training (N = 97)

Category	Representative quotation	Percent who mentioned
Psychoeducation	Educate those involved as primary caregivers for the child on ASD [and] family dynamics that come with having a child who had ASD In my practice, family training is working with parents to understand … some ABA terms and theory as they apply to their child's specific needs. For example, how to shape a specific behavior or which variables may be maintaining a specific behavior of interest	53%
Treatment management	Including families in the plans, and discusses progress and changes weekly to the plan Finding out what behavior is most impacting family life Listen to the caregivers [sic] concerns and aspirations for their child and plan goals based on their input while simultaneously tailoring training to correspond with the goals… Having a meeting with the whole family and reviewing the current goals and ways to improve the overall quality of life of the family together	46%
Evidence-based strategies	It includes meeting with the family face to face and listening to and addressing possible concerns they are having. Then assessing the situation, planning and writing an intervention in which they agreed is to the consumer/families benefit. *Then we model with the parent how to do the intervention and work with the family until they can successful [sic] apply the intervention*. We share data with the parent, evaluate the data. At some point the data should show lesser services are needed and the family agrees lesser services would be appropriate Family training means discussing current goals, finding out what the parents are seeing at home for comparison, provide suggestions, *role play/model desired behaviors with or without child present*, provide parents with breakdown on current progress towards ABA goals, discuss other therapies/school and how behaviors are going there Teaching families, parents, grandparents, siblings etc. about ABA the principles and procedures and the science and supporting them with implementation to address their concerns, issues and needs, *using modeling and practice and feedback*	45%
Subcategory of evidence-based strategies: package of evidence-based strategies	Creating goals with the family. Using BST [Behavioral Skills Training] until they reach competency to implement the procedures with treatment integrity Using behavior analytic concepts (often BST) to help families understand, manage, and treat their child's behavior This is a specific and formal face-to-face activity where I sit down with the family and train on ABA concepts and autism. Often we are delivering the RUPP curriculum, going over assessment results, modeling and practicing the prescribed behavior intervention procedure, giving data updates, and/or just answering questions or talking about concerns	6%
Unspecified efforts to support intervention strategy use	…Provide information and recommendations for completing skilled therapeutic recommendations within the home environment Giving the family the skills to teach their child in the way that is best suited for the child. Helping families understand their child's diagnosis and helping create positive environments in the home	35%
Parent support strategies	Empowering parents to be in control and take control of their child's treatment and prognosis. Give them to tools to one day "fire us" (in a good way). Make them feel they can do it without us when the time comes, because they are doing more than they even know Helping the family become more confident in their role in their child's growth so that they can do ABA without us I have formal meetings, open to entire families. I try to have them monthly, but find most parents see it as a chore. It is rare that more than one parent show. Because of this, I also try to talk to a parent for each kid weekly for a few minutes to troubleshoot any issues. This has proven to be as effective as the formal meetings, but rarely ends up being billable	25%

(4) Analyze the ways in which ABA providers conceptualize parent training.

Medicaid claims from the present study indicated that 55.1% of families of Medicaid-enrolled youth with ASD received at least one parent training session over the 6-month time period. Data from the present study appear to suggest an increase in the use of this service from past survey-based community estimates of 21% (Hume et al. 2005), though it is not possible to make any direct comparisons since our data come from a different service context and utilized different data sources (i.e., billing claims instead of survey responses). While it is encouraging that the use of this best practice may be increasing in community settings, nearly half of our sample (44.9%) did not receive any parent training at all. Thus, our efforts to support community settings in utilizing evidence-based ASD interventions must continue so that we can address the service needs of all families.

Medicaid claims data suggest that for youth who received any parent training, the average frequency was slightly less than one session every other month ($M = .46$ encounters per month). In contrast, ABA providers reported providing parent training to their clients more frequently, with 74.2% indicating that they deliver 1–2 parent training sessions per month for the average client. While there was a discrepancy across the two data sources, results from both sources suggest that the frequency of parent training sessions for Medicaid-enrolled clients with ASD was low and not consistent with evidence-based parent training models (Ingersoll and Dvortcsak 2019; Kasari et al. 2010; Rogers et al. 2012; Scahill et al. 2016). There are several potential explanations for this discrepancy.

First, ABA providers may be providing this service at frequencies that are not captured by the Medicaid claims because many ABA providers submit case notes to staff at a centralized billing office who then determine which codes to submit for reimbursement. It is possible that office staff may be making clerical errors. It is also possible that ABA providers may not be engaging in activities that are consistent with evidence-based parent training and staff in the billing office may not not feel that the parent training billing code is appropriate based on case note descriptions. In support of this possibility, our content analysis of ABA providers' definitions of parent training from the survey suggests that many providers may not be aware of evidence-based parent training strategies, and thus may provide descriptions in case notes that are not billable for parent training because they do not describe specific treatment guidance related to ABA strategy use (e.g., sessions that solely focus on checking in about child progress). However, future research should examine this hypothesis more thoroughly.

It is also possible that ABA providers were influenced by social desirability and overreported how frequently they use parent training with their clients in the survey. Furthermore, because the study included self-report survey data, it is possible that providers were influenced by recall error and reported on parent training sessions with *all* clients as opposed to only Medicaid-enrolled clients. While we gave explicit instructions in the survey item for providers to only report on Medicaid-enrolled clients, recall error is a potential limitation of any self-report study. Future studies should include observational data from sessions or secondary analyses of case notes to avoid instances of bias that can arise in self-report data. Observational data would help to more objectively document providers' use of evidence-based parent training strategies and the fidelity to which they implement manualized treatments.

Taken together, although it is possible that ABA providers are delivering parent training to their clients more frequently than the Medicaid claims suggest, the likelihood that most families are receiving parent training at a level of intensity needed to promote mastery is low; we are not aware of any research to support high parent fidelity with such a low frequency and quantity as the average seen in this sample; for example, manualized parent training programs have session frequencies that range from once a week for 12 weeks (Hardan et al. 2015) to 2–3 times per week over nine months (Wetherby et al. 2014).

Medicaid claims data and ABA provider self-report on the survey indicated that most ABA providers use individual, one-on-one sessions of parent training as opposed to group models; individual sessions were far more frequent with 98.3% of Medicaid claims and 94.8% of survey responses using individual sessions and 3.4% of Medicaid claims and 9.3% of survey responses with group sessions. This is consistent with other studies of providers' use of parent training in community mental health agencies (Pickard et al. 2016). It is unfortunate that group models are not frequently utilized, as parents and providers alike note many advantages of group models of parent training, emphasizing that group parent training sessions also incorporate social support from peers (Pickard et al. 2016). Additionally, ABA providers reported using parent training to cover a wide range of content, suggesting that ABA providers view parent training as a flexible intervention that can be applied to address a variety of presenting concerns; however, their use of manualized parent training programs was low (36% of providers reported using manuals).

Providers reported using individual evidence-based strategies fairly frequently when provided with a Likert rating scale on the survey (means ranged from 2.82 to 4.29 out of a 5-point Likert scale). However, when given the opportunity to provide their own description of parent training prior to answering questions about their own practice, their definitions were largely inconsistent with the literature. Indeed, the content analysis indicated that providers frequently mentioned activities that are not central to an evidence-based

definition of parent training, including psychoeducation, treatment management, and parent support strategies. While all of these activities are components of high-quality clinical practice, they are not central to parent training as a concept. While 45% of providers mentioned at least one evidence-based strategy (instruction, modeling, and caregiver practice with feedback), only 6 providers (6%) mentioned an approach that includes all three evidence-based strategies. No providers mentioned all three strategies outside of the context of a specific evidence-based package. Importantly, only 17% of ABA providers mentioned modeling and only 10% mentioned practice and/or feedback, two critical components of evidence-based parent training models that are associated with improved child outcomes (Ruppert et al.2016; Wyatt Kaminski et al. 2008). Additionally, the two least frequently used parent training strategies in the survey were modeling (mean of 2.82 out of a 5-point Likert scale) and providing time for the parent to practice (mean of 3.26 out of a 5-point Likert scale), providing some convergence across data sets and suggesting that ABA providers use these specific strategies less frequently than other practices. This is concerning, as research suggests that programs in which providers require parents to practice intervention strategies while the provider gives feedback are associated with stronger improvements in child outcomes than programs that do not, regardless of other program components (Ward-Horner and Sturmey 2012; Wyatt Kaminski et al. 2008).

Our findings suggest that it is highly unlikely that Medicaid-enrolled families in our sample received high-quality parent training; our data suggest that providers may be overemphasizing general psychoeducation and treatment management, potentially at the expense of the use of evidence-based parent training practices. Further, it is unlikely that families that receive so few sessions would be able to adequately learn and demonstrate competence in intervention strategies to use with their child, regardless of the strategies used.

Policy Implications

The Michigan Medicaid Autism Benefit was progressive in its approach to incentivizing providers to utilize parent training with Medicaid-enrolled clients, offering higher reimbursement for parent training sessions than direct ABA services such as discrete trial training (B. Groom, personal communication, February 20, 2018). It is likely that this policy increased providers' use of parent training, as it demonstrated support at the state-level for providing evidence-based parent training. For this reason, the present study's billing data may actually reflect a higher use of parent training for a Medicaid-enrolled population than what might be seen in states without such a policy.

However, it is not enough to merely provide funding infrastructure for evidence-based services in a highly stressed system such as the community mental health system; it is also necessary to provide adequate training at both the pre-service and in-service levels in order to ensure that providers are knowledgeable about evidence-based parent training practices. Both qualitative and quantitative data suggest that community providers in this system are largely unaware of evidence-based parent training practices and are likely not providing high-quality parent training to Medicaid-enrolled clients with ASD. Thus, although this policy was well-intended, there is still much room for improvement in helping the system implement the policy to its fullest potential. Considerations for policies such as the Michigan Medicaid Autism Benefit should include (a) increasing pre-service and in-service training opportunities for providers to learn about evidence-based parent training and (b) incentivizing the use of empirically supported manualized parent training interventions, as research suggests that the use of a manualized parent training program is associated with more extensive parent training use among ABA providers (Ingersoll et al. 2020).

Conclusions

To our knowledge, this is the first study to investigate the use of parent training with underserved families of ASD using multiple data sources. By employing mixed methods in this study, we were able to provide a more complete picture of parent training practices in this system than what would have been accomplished by using quantitative or qualitative methods alone. Overall, results suggest that the quality of parent training sessions is unclear at best and likely limited. Future research should include observational studies in which the quality of parent training sessions in community settings can be directly observed and quantified. Additionally, future research with systems that serve underserved clients should explore the use of other methods that have been demonstrated to be effective in increasing provider use of evidence-based practices, including financial incentives for providers (Powell et al. 2012) and consultation with experts regarding the use of evidence-based practices (Nadeem et al. 2013).

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