

ORIGINAL ARTICLE OPEN ACCESS

Providers' Perspectives on Resources Needed for Disseminating and Implementing Evidence-Based Practices for Autism: A Qualitative Study

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Received: 16 August 2024 | **Revised:** 29 May 2025 | **Accepted:** 22 July 2025

Funding: This work was supported by Institute of Education Sciences, R324A170063.

Keywords: autism | evidence-based practices | implementation science | intellectual disability | practice | special education

ABSTRACT

Effective dissemination and implementation of evidence-based practices (EBPs) for autism have proven challenging. The California Autism Professional Training and Information Network (CAPTAIN) is a statewide initiative designed to build capacity for autism EBPs within community service agencies. The present study aimed to examine resources requested by CAPTAIN members to support their dissemination and implementation efforts in order to inform future implementation research and practice. In an annual survey, CAPTAIN members identified resources needed for their dissemination and implementation work. Using the template analysis method, we analyzed written responses. Overarching themes included members wanting more: ready-made resources for training and coaching, inclusive resources, effective methods of obtaining and sharing resources, opportunities to connect and learn from other members, empirical information about EBPs, and opportunities for professional development and support. Providers with direct experience offer useful perspectives as members of the EBP dissemination and implementation delivery system that can be valuable to both the translation and support systems and can inform implementation science more broadly.

1 | Introduction

In the past two decades, prevalence rates for autism in the US have increased from 1 in 150 in 2000 to 1 in 31 children in 2022 (Shaw et al. 2025). During the 2022–2023 academic year, 13% of students in the US and 17% of students in the state of California had an autism diagnosis (Office of Special Education Programs, 2024). Therefore, increasing access to autism-specific learning supports in schools and other public service systems represents a significant need to ensure better child outcomes and service equity. Over the last two decades, several systematic reviews led by organizations including the National Autism

Center, National Professional Development Center on Autism Spectrum Disorders (NPDC-ASD), and National Clearinghouse on Autism Evidence and Practice (NCAEP; National Autism Center 2009; Odom et al. 2010; Steinbrenner et al. 2020; Wong et al. 2014) have identified numerous evidence-based practices and interventions (EBPs) for autism. For example, the NCAEP's report identifies 28 EBPs for autism (Steinbrenner et al. 2020). However, the identification of EBPs does not lead to the effective implementation of these practices within service delivery systems (Boyd et al. 2022; Hess et al. 2008; Morrier et al. 2011; Suhrheinrich 2011; Suhrheinrich et al. 2013; Vernez et al. 2006). With the increase in students with autism in public systems,

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developing effective methods to translate EBP and equip service providers remains imperative.

School systems and departments of developmental services (often under Health and Human Services) provide the bulk of support for children with autism in the US. In California, Special Education Local Plan Areas (SELPAs) provide regional oversight of special education services, which often include training and support for districts in their region. California also has a system of nonprofit, community-based regional centers that manage developmental services (Frank D. Lanterman Regional Center 2010; Montes et al. 2009) for individuals with autism and other developmental conditions. Regional centers offer services similar to developmental services offered in other states, individualized for communities in their region. Families of individuals with autism may also receive parent-to-parent support from federally funded family resource centers (FRCs) that partner with local regional centers and education agencies. These systems provide publicly funded programs in all states. Increasing the use of effective autism intervention and supports in these programs may improve access to high-quality care for many children and families.

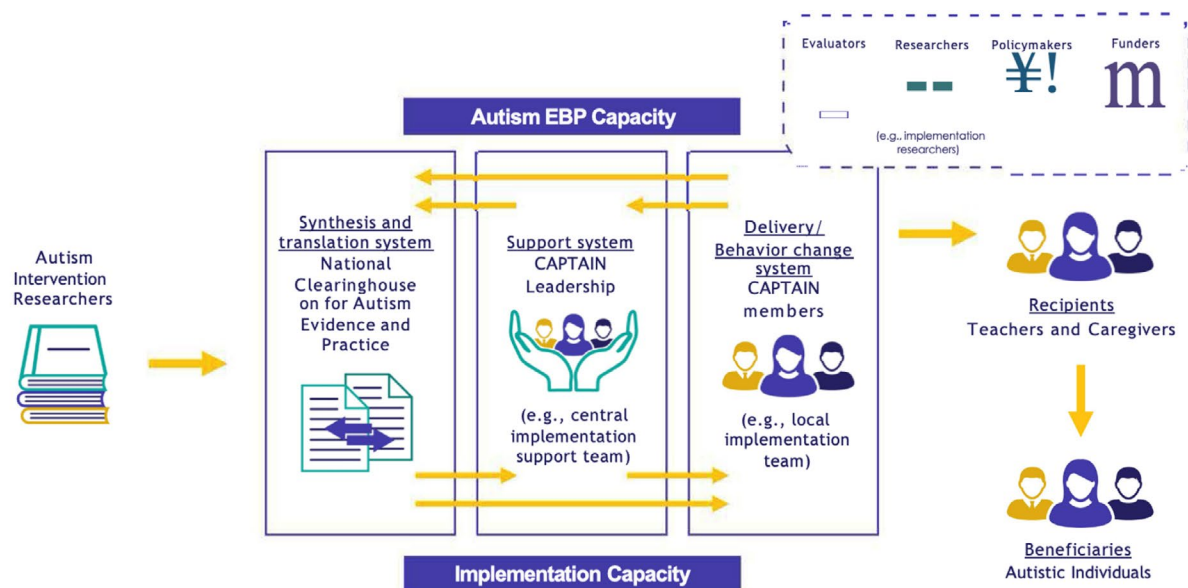
The California Autism Professional Training and Information Network (CAPTAIN; Suhrheinrich et al. 2020), established in 2012, aims to scale the knowledge and use of EBPs for autism in these public systems. A state-wide multi-agency collaborative, CAPTAIN involves participation from providers across several service delivery systems—SELPAs, regional centers, and family support agencies—to streamline the information dissemination and implementation processes of EBPs for autism throughout California. Nominated by their employing agencies for their dedication to their work with individuals with autism, CAPTAIN's 400-plus active members represent 93% of SELPAs, 100% of regional centers, and 35% of family support agencies in the state. Due to the size of the school system in California, most CAPTAIN members are working in the education sector (78%). Lastly, CAPTAIN also includes faculty from university preparation programs in special education, speech pathology, and social work to reach preservice professionals. CAPTAIN members use a train-the-trainer methodology to relay information about autism EBPs to providers in their service systems who support individuals with autism. In addition to attending an annual CAPTAIN summit, which provides education about EBPs and supportive implementation strategies, and quarterly network meetings, members are encouraged to access peer support networks within regional CAPTAIN groups and collaborate with other members to increase interagency partnerships. Members participate in CAPTAIN while also fulfilling their regular job duties. Regular meetings with agency leadership to review membership commitments and progress can support program sustainment. Although this particular model is unique to California, other states employ similar statewide strategies for dissemination and implementation of EBPs for autism (Schetter et al. 2020).

The CAPTAIN model uses an implementation science framework, the Interactive Systems Framework for Dissemination and Implementation (ISF; Wandersman et al. 2008), as an approach to understanding and bridging the research-to-practice gap. The ISF suggests that successful community

implementation requires interaction and collaboration between three systems: a translation system, a support system, and a delivery (or behaviour-changing) system. The translation system focuses on converting research findings to practical strategies; the support system provides resources and training to support the implementation of the strategies; and the delivery or behavior change system refers to the local implementation team. The ISF emphasizes collaboration between all three systems as an important component of successful implementation. Practices may not be well identified without the work of a translation system to synthesize research content for widespread use. Without a robust support system, the delivery system may also not be fully equipped to build capacity for these practices within their environments.

In line with the ISF framework, CAPTAIN utilizes clearing-house organizations such as the NCAEP, which provide resources translating autism EBP strategies for practice, as the translation system. CAPTAIN leadership serves as the support system, and CAPTAIN members make up the delivery system (see Figure 1). As a translation system, NCAEP conducted a systematic review of the research literature and summarized its findings in a report that was written in a way that caregivers and professionals not well-versed in research methodology may still understand. They developed web-based training modules and tools to support the understanding and use of identified EBPs. CAPTAIN leadership provides a robust support system, including obtaining funding and providing infrastructure for training and networking, which builds capacity in EBP implementation so that the local CAPTAIN members in the delivery system (e.g., educators, direct service providers) are fully equipped to utilize these practices within their environments. CAPTAIN trains its members to use the NCAEP report and training modules to help providers and caregivers select EBPs that support each child's specific goals. CAPTAIN members learn methods for providing high-quality professional development, including coaching, to assist providers with reaching fidelity (i.e., the degree to which an intervention is delivered as intended) for each EBP. CAPTAIN leadership has developed resources to support these activities and commits to ongoing evaluation of member needs to address the effectiveness of the delivery system through an annual survey and ongoing strategic planning.

As the delivery system, CAPTAIN members take an active role in training and coaching providers. Therefore, their input and feedback are crucial for understanding the types of resources they need from CAPTAIN, the support system, to be successful. For example, based on feedback indicating leadership support facilitates effective EBP training, CAPTAIN provided training and resources to support members meeting regularly with agency leaders to facilitate implementation (Suhrheinrich et al. 2020). CAPTAIN uses several methods to ensure a bidirectional stream of information and communication (Aarons et al. 2012; Braithwaite et al. 2018) between its leadership team and its members. One method of maintaining a feedback loop is CAPTAIN's annual member survey. The survey is an opportunity for CAPTAIN to gather data from CAPTAIN members who have direct experience working within their local communities. CAPTAIN members represent a wide range of roles (e.g., autism specialists, school psychologist, parents, and service coordinators) and service environments (e.g., schools, early intervention



Wandersman, A., Jennifer Duffy, Paul Flaspohler, Rita Noonan, Keri Lubell, Lindsey Stillman, Morris Blachman, Richard Dunville, and Janet Saul. 2008. "Bridging the Gap Between Prevention Research and Practice: The Interactive Systems Framework for Dissemination and Implementation." *American Journal of Community Psychology* 41 (3-4): 171-81. <https://doi.org/10.1007/s10464-008-9174-z>.



Figure adapted by The Center for Implementation

FIGURE 1 | Interactive systems framework for dissemination and implementation (ISF), adapted from Wandersman et al. (2008).

agencies, and family resource networks). Examining the needs of CAPTAIN members has the potential to offer understanding of the processes and resources needed for other implementation support groups in a variety of areas.

The present study aims to identify how CAPTAIN leadership, as the support system, can support its members (the delivery system) in successfully implementing EBPs in public service systems. This qualitative study examined which resources CAPTAIN members identified as most beneficial to their dissemination and implementation work and asked them to provide recommendations to guide intermediary organizations generally about the types of supports trainers need for EBP dissemination and implementation. This process and the knowledge gained from one statewide implementation support network can be generalized to other support systems working to disseminate and implement EBPs to their community-based delivery systems.

2 | Methods

This study used data from an annual CAPTAIN member survey conducted in 2020 and examined responses to an optional, open-ended online survey question about supports or resources members hoped CAPTAIN could develop to support their work. Data analyses were guided by the Consolidated Criteria for Reporting Qualitative Research checklist where applicable, which can be found as a supplementary file (COREQ; Tong et al. 2007). The 2019–2020 academic year was marked by unique circumstances, with most educational institutions and organizations pivoting to online platforms in response to the COVID-19 outbreak in early 2020. As a support system, CAPTAIN was especially invested in determining members' needs that were motivated or exacerbated

by this event. These findings contributed to CAPTAIN's internal quality improvement, but may also be used to inform the broader literature about providers' needs.

2.1 | Participants

The annual survey was sent to 349 returning CAPTAIN members; new members (i.e., members were less than a year of CAPTAIN membership) were not included due to their limited prior experience with CAPTAIN activities. All 349 members responded, and 218 (62% response rate) chose to answer the optional open-response question about additional resources CAPTAIN could provide to assist its members with dissemination and implementation efforts. However, 108 participants' responses were excluded because they declined consent to use their responses for research purposes ($n=9$) or did not provide a specific suggestion (e.g., responded with 'N/A' or 'all resources are great'; $n=98$). Thus, a total of 111 participants were included in the final analysis. Between those who responded to the resource question and those who did not, there were no significant differences in their years of experience in their field ($t(347)=0.82$, $p=0.41$), years in their current job position ($t(347)=0.51$, $p=0.60$), or years of CAPTAIN membership ($t(347)=0.72$, $p=0.47$). Notably, members with jobs as autism specialists, departmental directors, and instructional coaches were less likely to respond to the optional question.

Most participants identified as female (93%), white (73%), and non-Hispanic (81%), and were between 35 and 44 years of age (42%). Most participants held positions as behaviour specialists (e.g., Board Certified Behaviour Analysts; 32%), program specialists (21%), or program coordinators or managers (13%). On average, participants had spent 6.59 years in their current

position ($SD=5.01$), 18.12 years in the field ($SD=8.86$), and 3.78 years in CAPTAIN ($SD=2.17$). Most of the participants were school-based members ($n=88$; 79%). Participants also represented regional centres ($n=14$; 13%), family support agencies ($n=6$; 5%), and college or university programs ($n=3$; 3%). A full demographics table can be found in Table 1.

2.2 | Measures

In the 2020–2021 annual survey, CAPTAIN members were asked to reflect on the 2019–2020 school year. Information collected included demographics (e.g., agency representing, role at their agency, number of years in the field), general information related to EBP-related practices (e.g., organizational and regional EBP-related practices), and CAPTAIN-specific questions (e.g., progress in meeting CAPTAIN requirements, a checklist of resources accessed in the past year). As part of this larger survey, CAPTAIN members were also asked to respond to the following question: “What additional resources could CAPTAIN develop or provide for you to assist you with your CAPTAIN work?” This offered members an opportunity to identify additional resources CAPTAIN could develop or provide to assist members in their EBP dissemination and implementation work. Responding to this item was optional.

2.3 | Procedures

The 2020–2021 CAPTAIN annual survey was administered online through Qualtrics, and responses were collected between September and November of 2020. CAPTAIN members were invited to participate via emails that contained a personalized link to the survey and received bi-weekly reminders from September through October and weekly reminders in November to complete the survey unless they had already completed it or had explicitly opted out of participating.

2.4 | Data Analysis

The first two authors cleaned and coded the data. The first author was a predoctoral research staff member with 3 years of experience in autism research at the time of analysis. The second author was a clinical psychologist with over 10 years of experience in autism research. Both had training in qualitative analyses. Both coders were familiar with CAPTAIN's implementation and dissemination work prior to the study and had contributed to the design of the larger survey. All other authors in this study, who reviewed the codes and contributed substantial edits to the manuscript, were involved in CAPTAIN leadership and had extensive experience with autism research.

In this qualitative thematic analysis of the text responses to the survey question, the research team utilized the template analysis method to identify a hierarchy of themes and subthemes based on a list of codes generated from the raw dataset (Braun and Clarke 2006; Gibbs 2007). Following this method, the first author assigned each of the 111 responses at least one categorical code that identified the type of suggestion the respondent

TABLE 1 | Participant demographics ($n=111$).

Variable	Mean (SD) or frequency (%)
Age range	
35–44	47 (42.34%)
65–74	6 (5.41%)
45–54	35 (31.53%)
55–64	8 (7.21%)
25–34	13 (11.71%)
75–84	1 (0.90%)
Decline to answer	1 (0.90%)
Gender	
Female	103 (92.79%)
Male	7 (6.31%)
Decline to answer	1 (0.90%)
Race	
White	81 (72.97%)
Asian	8 (7.21%)
Black or African American	2 (1.80%)
American Indian or Alaskan Native	1 (0.90%)
2 or more of the above	4 (3.60%)
Other	10 (9.01%)
Decline to answer	5 (4.50%)
Ethnicity	
Non-Hispanic	90 (81.08%)
Hispanic	18 (16.22%)
Decline to answer	3 (2.70%)
Job Title	
Autism Specialist	3 (2.70%)
Behaviour Analyst/Specialist (including BCBAs)	35 (31.53%)
Case Manager or Case Management Supervisor	2 (1.80%)
Consultant	1 (0.90%)
Department Director (including superintendents, assistant directors)	1 (0.90%)
Family or Self Advocate	2 (1.80%)
Family Support Provider/Advocate for people with Autism and Developmental Disabilities	1 (0.90%)
Higher Education Faculty or Staff	3 (2.70%)
Instructional Coach	1 (0.90%)

(Continues)

TABLE 1 | (Continued)

Variable	Mean (SD) or frequency (%)
Program Coordinator, Manager, or Director	14 (12.61%)
Program Specialist	20 (18.02%)
Psychologist (including school psychologists)	6 (5.41%)
School Administrator (including principals, assistant principals)	2 (1.80%)
Specialist (including speech language pathologists, occupational therapists)	6 (5.41%)
Teacher (including special education teachers, teachers on special assignment)	9 (8.11%)
N/A (no answer provided)	5 (4.50%)
Agency Affiliation	
SELPA/School District	84 (75.68%)
Regional Centre	13 (11.71%)
Family Support Agency (FRC, FEC, PTI, CPRC)	6 (5.41%)
College/University (including LEND/UCEDD)	3 (2.70%)
CDE (including diagnostic centres and special education division)	3 (2.70%)
DDS	1 (0.90%)
Other	1 (0.90%)
Years In Field	18.12 (8.86)
Years in Current Title	6.59 (5.01)
Years as CAPTAIN Member	3.78 (2.17)

Note: Percentages may not add up to 100% due to rounding.

made. Responses could be assigned more than one code if they (a) included more than one suggestion or (b) their suggestions could be described using more than one code. For example, a response suggesting more ready-made videos that could be used with Spanish-speaking communities would have been coded as both more 'pre-made materials' and more 'linguistically diverse resources.' Afterward, the first author consolidated codes into larger thematic sub-categories (e.g., 'Centralized Libraries' to describe any suggestions related to creating a shared space for disseminating resources, 'Mental Health' to describe any suggestions related to supporting students' and their families' mental health). The second author then reviewed and assigned the first author's codes and sub-categories to the raw data independently before meeting with the first author to resolve any disagreements. For instance, the two authors resolved to create a larger sub-category (i.e., 'Communications and Updates') to encapsulate any recommendations for maintaining consistent communication from CAPTAIN leadership rather than separating day-to-day correspondence and organization-wide

announcements or updates. To further simplify this list, the authors worked together to identify overarching thematic groups that describe multiple sub-categories. An example of a thematic group is 'increased ease of access to resources', which includes the aforementioned 'Communications and Updates' sub-category along with two other sub-categories ('Centralized Libraries' and 'Website Improvements') that revolve around wanting more efficient access to information and resources from CAPTAIN.

All participants provided written informed consent for use of their data in research. While several of the quotes presented in the following section may include some context about respondents' backgrounds, they are not attributed to any specific individual to maintain participant confidentiality. CAPTAIN also communicated the findings of this study with its members during an annual, organizational-wide meeting. The study was approved by the Institutional Review Board (IRB) at the [Institution name redacted].

3 | Results

From the 111 responses analyzed, coders identified 181 total suggestions. These 181 suggestions were then simplified into 70 codes, then 18 sub-categories that contained one or more codes, then 6 overarching categories, or themes, that contained one or more sub-categories (see Table 2). These 6 themes included: (1) ready-made materials, (2) inclusive resources and materials, (3) increased ease of access to resources, (4) collaborative supports and efforts, (5) empirical information, and (6) professional development and support.

3.1 | Ready-Made Materials

Ready-made materials include any type of pre-made resource that members can use with minimal to no editing. Most responses consisted of individuals asking CAPTAIN to create different ready-made materials that they could implement into their day-to-day workflow. Members asked for a variety of materials, including PowerPoints (e.g., informational presentations, training presentations, visuals for coaching sessions), handouts (e.g., information sheets, premade forms), and videos (e.g., examples of EBPs in action, videos explaining specific EBPs). In many cases, respondents wanted ready-made materials for training purposes.

While most members did not provide specific reasons as to why they wanted these materials beyond mentioning who they would be using them with (e.g., families, educators), one mentioned that they would be useful for "busy days and weeks and months" when it could become difficult to stay on top of all their students' or clients' needs. Another member stated that "part of the difficulty in providing the trainings is developing [them]," and that it was "overwhelming at first knowing that [they would] have to develop the trainings" independently. Multiple responses also noted that they found great value in the ready-made materials that CAPTAIN had already produced at the time of the survey and were eager for the team to continue to create and share more.

TABLE 2 | Themes, sub-categories, and categorical codes.

Theme	
Sub-Category	Categorical Codes (Examples of Resource Suggestions)
Collaborative Supports and Efforts	
Meetings	Structuring (ideas for next steps, suggested agendas), Support for Regional ‘Togetherness’
Mentorship	FSS, New Member Mentorship Program
Inclusive Resources and Materials	
Distance Learning (Online and/or Asynchronous Learning)	Distance Learning Supports for Teachers/Staff (e.g., Teachers using EBPs, General Ed Teachers re: behavioural challenges), Distance Learning Coaching Tools and Recommendations, EBP-Specific Suggestions/Guidelines for At-Home Virtual Learning and Implementation, Distance Learning Support/Tools for Families, Distance Learning EBP Modules (AFIRM + Others), At-Home Implementation Resources, Distance Learning Materials and Resources (Unspecified)
Family-Friendly Materials	More Accessible Materials for Families (Accessible Language, short videos/modules, simple handouts), Parent Support in Distance Learning, Information for Families with Older Children with autism, Parent-Friendly Bilingual Materials
Mental Health	Resources on Mental Health (MH and Autism, Educationally Related Mental Health Services)
Supports for Specific Populations	English-Learner/Non-English-Speaking Populations (Students), Girls with autism, Local Community Outreach, Early Intervention (0–3) Resources, Adult Learning Materials/Resources (Quality of Life, Residential Living, etc.), Adolescent Support (e.g., high school-level interventions)
Increased Ease of Access to Resources	
Centralized Libraries	Resources Library (COVID Padlet, PowerPoints, Resources, Documents, Videos, etc.), Periodically Update and Expand Shared Drives/Libraries (e.g., Google)
Website Improvements	More User-Friendly Website (Ease of Navigation), More Content-Heavy Website (e.g., EBP and implementation science resources)
Communication & Updates	Resource & Strategy Updates (e.g., for distance learning), CAPTAIN Goals Updates/Recaps, Increased CAPTAIN communication + reminders
Empirical Information	
Research	Trusted Sources on Lesser Known EBPs, Information about Multi-Tiered Systems of Support, Implementation Science Resources (e.g., links on website), Evaluating Research Considerations for EBPs
Ready-made Materials	
Handouts (physical or virtual)	Virtual Platform Legally Defendable Permission Slips, Social Stories, FAQ on Common Challenges Associated with Autism, Visual Supports, EBPs (unspecified), Data Trackers
PowerPoints (Not specific to EBPs/Training)	Editable PowerPoints, “What is CAPTAIN?” PowerPoint, General PowerPoint Request
Surveys	Periodic Knowledge Checks (for CAPTAIN members), Standardized Measures, Implementation Checklist
Training Resources	Training Materials (Pre-made infographics, presentations and materials that are EBP-specific PowerPoints for training, etc.), Coaching/Training Recommendations and Protocol for Distance Learning, Coaching and Training Models & Overviews, Child Welfare & Foster Care Provider Trainings, Adult-focused Training Materials, Training/Coaching Aides (Visual Supports, bags, manipulative supports), Updates to Existing Trainings
Video-related Suggestions	Video Examples/Models/Demonstration (e.g., with less severe students, older/adult students, girls with autism, distance learning, etc.), Short-form Videos, Videos for Parents/Families, Training/Coaching Videos, Videos on Individual EBPs, Multilingual and Linguistically Accessible Videos, Videos (unspecified)

(Continues)

TABLE 2 | (Continued)

Theme	
Sub-Category	Categorical Codes (Examples of Resource Suggestions)
Professional Development and Support	
Administrative Buy-in	Informational Videos (“What is CAPTAIN”, “Why are EBPs Important?”, etc.)
Funding	Funding for CAPTAIN Activities (e.g., District-based full-time CAPTAIN employee, Training Materials, FRC/FECs-specific Funding)
Training and Coaching	CEU-Accredited Courses for FRC/FECs, Support for Indirect Providers (e.g., consultants), More Webinar, Guest Speaker, Training Opportunities for Cadre, More EBP-Specific Trainings, Trainings on Coaching, FRC/FEC Provider Trainings (Webinars), EBP Models (in-person or virtual)

3.2 | Inclusive Resources and Materials

Another major focus for respondents was on inclusive resources or materials, or resources that address the needs of more diverse and often underrepresented populations or topics in autism research and intervention work. From highlighting specific populations that tended to be less studied or prioritized (e.g., infants and toddlers, adults with autism that no longer receive school-based support) to mentioning topics of interest that did not receive as much attention in their work (e.g., mental health support for individuals with autism), respondents offered a wide range of ideas about who and what to emphasize in upcoming resources.

While not specific to the content of the resource, numerous respondents with school-based job positions asked for more resource modalities (e.g., an online form that can be filled out versus a physical form) that were more inclusive of clients who could not meet them in person. It is important to note that the number of asks related to online learning was likely due to the then recent shift to distance learning that resulted from the COVID-19 pandemic. One respondent did not ask for a specific resource, but instead for general, up-to-date guidance: “Continue to update us with strategies on how to engage students and families with online learning that we can share with our service providers and teachers.”

Related to inclusivity, several respondents, most of whom did not work in schools, thought it would be useful to have more resources tailored to families. These consisted of any material or content that families could use to learn more about EBPs and how to implement them at home with their children. For some respondents, this meant providing materials in languages that their families preferred, in accessible language (i.e., grade-school reading level), or both. One respondent stated, “There are a lot of parents that want to learn how to support their children but some of the Spanish information may be to advance [sic] for their reading levels.”

3.3 | Increased Ease of Access to Resources

The third theme focused on increasing members’ ease of access to resources, or finding simpler and more streamlined

ways to find or share information and materials. For some respondents, having a simple way to access all of CAPTAIN’s resources was the most optimal way to support their EBP implementation and dissemination efforts. Respondents made specific comments about improving CAPTAIN’s website, with suggestions to make the website both more user-friendly and content-heavy. A couple of respondents felt that the website was not an approachable way to introduce families to CAPTAIN, with one person stating, “It can be difficult for [me] to find resources [on the website], so I imagine it is difficult for families to find information.” Several responses also compared CAPTAIN’s website to another online resource on a separate platform that CAPTAIN had created in response to the COVID-19 pandemic, noting how easy and helpful that resource had been for locating information. To this end, other respondents wanted a collaborative, centralized library or cloud service that contained all the resources CAPTAIN or CAPTAIN members had created or shared.

To further improve members’ access to important information, several respondents thought it could be helpful to have more frequent communication and reminders from the CAPTAIN leadership team. These updates might include organizational-wide information about CAPTAIN’s reach and progress on annual goals, links to new or timely resources, and reminders for members to review their individual responsibilities and goals.

3.4 | Collaborative Supports and Efforts

The fourth theme identified revolved around the desire for more collaborative supports and efforts, or opportunities for CAPTAIN members to work together and share their expertise. Multiple respondents emphasized the value of their CAPTAIN peers’ insights, knowledge, and support. Several of the suggestions revolved around wanting to find ways to connect and learn from one another. A couple of respondents suggested standardizing the agendas that regional CAPTAIN groups used during their check-in meetings to ensure that everyone was held accountable and informed about the same information. One of the respondents also probed for thoughts on how to increase the feeling of camaraderie in their region; this particular respondent hailed from one of the most populated and physically widespread CAPTAIN regions.

Notably, a few respondents who worked in non-academic settings (e.g., FRCs) asked about creating a formal mentorship or partnership program that would pair members with one another. Although CAPTAIN does have an onboarding and training protocol for new members, one member suggested that having a specific person with a similar job title to guide them would have benefited their understanding of how to accomplish their CAPTAIN duties in their work settings:

I think it would be nice to have a specific person as a mentor for new members because sometimes the expectations felt unclear and support in how to do it in my specific position. Many other members are in training positions but as a direct provider I needed some more suggestion [sic] in how to implement.

3.5 | Empirical Information

The fifth theme focused on some members' desire for more empirical information, or evidence-based information, about EBPs and other interventions or practices that they might use in their work. While less prevalent than other suggestions, a few responses were related to ways to share about or improve upon CAPTAIN's intent to promote practices backed by research. In a couple of cases, respondents asked for some trusted sources about implementation strategies and EBPs that they could provide to families, educators, and other community members. One respondent asked if CAPTAIN could offer more information about implementing EBPs in multi-tiered systems of support, in which schools or other educational settings extend practices outside of a single setting or context (e.g., having full classrooms partake in a practice, embedding practices in existing school activities). They wondered if this practice was something that had been studied, and whether it could increase "staff buy-in at school sites" and "[learning] support" for individual students with autism.

Another member hoped that, as a support system, CAPTAIN would scrutinize the level of rigor that translation systems used to determine what was considered evidence-based: "[CAPTAIN should be] setting a higher bar on what research to consider [as evidence-based]. Including the NCAEP's determination that Sensory Integration is evidence-based with only 3 supporting studies across 30 years seems like a low bar."

3.6 | Professional Development and Support

The last major theme revolved around resources that could support members' professional knowledge, skillsets, and capacity for dissemination and implementation-based work. In most cases, members asked for specific types of learning opportunities (e.g., webinars, trainings on how to implement certain EBPs), with a couple of members stating that they would appreciate more trainings tailored to the type of organization they represented. One participant stated that although CAPTAIN itself had been a valuable resource to them, they hoped to see greater emphasis on how to be a successful CAPTAIN member in a job position that was less hands-on and more consultative in nature.

Several respondents also asked about ways to garner financial and social support for their CAPTAIN-related work duties. Regarding financial support, a few members thought CAPTAIN could consider providing members or organizations with funding to buy materials or pay staff dedicated to EBP dissemination and implementation. A few members also suggested creating content or materials to help facilitate buy-in at their organizations, as administrative support played a major role in how well they could perform as a CAPTAIN member. One participant expressed the following while discussing a previous presentation that CAPTAIN had presented to the administrators in their county:

The presentation was about all the pieces that are needed for coaching and to make progress, she showed links and said if there is a missing link, progress will be slow. That was a strong message for me. Maybe that would be a good message for admin. I don't think that our admin. [sic] listens as much to us from the inside, but may be able to see the important role they play and why they are needed if presented from someone from the outside.

Another participant further emphasized the necessity for this type of support, stating that administrative buy-in was pivotal to their ability to "actually coach and support staff" in their local area.

4 | Discussion

As suggested by the ISF, to successfully carry out its role as a support system, leaders working to develop a system of dissemination and implementation must consider both the most current information from the synthesis and translation system and feedback from members of the delivery (behaviour change) system to inform resource development. Examining themes from CAPTAIN members who represent diverse delivery systems across service agencies can provide pivotal information about the needs of providers attempting to increase access to EBPs in public service systems. Although our data are specific to the content area of EBPs for autism, this process and the knowledge gained are generalizable to other support systems working to disseminate and implement EBPs to other community-based delivery systems.

4.1 | Training and Coaching Materials

Aligned with the commitment to spreading awareness and proper use of EBPs for autism through the train-the-trainer method, many suggestions were related to resource needs related to training and coaching. As most providers work a full-time position within their agency, the time to create or prepare materials about EBPs can be limited or difficult to protect. This is consistent with the literature that providers often report time constraints as one barrier to EBP implementation (Ayoubian et al. 2020; Cook et al. 2009; Luskin-Saxby et al. 2023; Lyon et al. 2013). Making training and coaching materials available and ready-to-use will help address this barrier. For example, CAPTAIN developed ready-made training packages for the 10 most used EBPs. Each training package includes a set of content slides of the EBP with embedded links to video examples of the practice being used correctly. Pre- and post-training

knowledge assessments were also developed to support CAPTAIN members' evaluations of their trainees' learning. Others may consider using a similar system in evaluating pre- and post-training knowledge for professional development (California Department of Education 2020b).

4.2 | Diversifying Resources

4.2.1 | Distance Learning Materials

The 2019–2020 school year was unique in that it coincided with the COVID-19 pandemic, during which many schools across the country moved to virtual learning, including California (California Department of Education 2020b), and family support agencies and regional centers worked with families and clients virtually via phone, email, or online meeting platforms. Post-pandemic, many agencies have continued using a hybrid model. This may be a path to reach rural communities (Ghimire 2022).

In our study, school-based members needed distance learning materials. This mirrors the challenges that schools faced in attempting to minimize the disruptions to instruction caused by COVID-19 and the adaptation needed for a hybrid model. In response to this need, CAPTAIN developed resources and provided virtual trainings for members. A dedicated space for curated resources in both English and Spanish was created on an online platform. This allowed for free access to tools and resources related to best practices in distance instruction for youths with autism. The need to provide online resources quickly for distance learning has led to an ongoing portal to provide digital training resources that can be used for multiple types of training beyond the pandemic.

4.2.2 | Inclusive Resources and Materials

Another theme was diversification of resources for use by specific populations and settings. Suggestions included materials to support populations under or over school age (3 through 18 years old), English learners or non-English speaking monolinguals with autism, girls with autism, families and community members supporting individuals with autism, and autistic adults.

With the increase in autism diagnoses over the last few decades, there is a heightened need for effective supports for providers working with adults with autism. This need was reflected in the survey, indicating that data from people practicing in the field may highlight areas of need in research in development. In a 2017 report of 3520 adults with autism between 18 and 64 years old, a fourth of respondents reported that the services they received were inadequate in fulfilling their needs (Roux et al. 2017). Systematic reviews conducted to identify EBPs seem to exemplify the dearth of content geared toward adults. Notably, the majority of the literature reviewed by the NPDC and NCAEP have focused on school-aged individuals (3–22 years old) with autism (Steinbrenner et al. 2020; Wong et al. 2014). While they do incorporate adult-based research in their reviews, the National Autism Center's most recent full-scale report was published in 2015 and only found one intervention for adults that matched their evaluation criteria (National Autism Center 2015). While there has been an increasing amount of research focusing on

adults with autism in the last decade, experts continue to highlight the notable dearth of evidence-based autism interventions and programs geared toward individuals over the age of 18 (e.g., Stringfellow et al. 2024; VanBergeijk 2025).

Most of the suggestions related to obtaining more adult-focused resources came from members nominated by a regional centre, which aligns with the adult populations they tend to serve (unlike school systems). Suggestions such as this can be used to address emergent issues in the field. For example, working with regional centres, CAPTAIN developed interactive training modules with content on how to use visual supports and prompting with adults with autism (Melgarejo et al. 2024). This is one example of how a translation team can provide individualized support to people in the delivery system based on unique service system needs.

Our participants also expressed a desire for resources in languages other than English. Based on publicly available data from the California Department of Education (California Department of Education 2020a), 56001 of the 120095 (46.63%) students with autism documented in the 2018–2019 school year were Hispanic. However, Hispanic students with autism are less likely to obtain school services, including individualized education plans (IEP) and services like speech therapy, compared to their non-Hispanic peers (Smith et al. 2020). Children with parents who speak primarily English are also more likely to receive more service hours compared to those who have parents who speak another primary language (St. Amant et al. 2018). To ensure that access to information about EBPs is fairly distributed regardless of parents' and students' primary or preferred language(s), producing resources in different languages is an important next step.

In response to this need, CAPTAIN collaborated with the Autism Intervention Research Network on Behavioural Health (AIR-B) to translate open-access tools for families with children recently diagnosed with autism (Melgarejo et al. 2023). The informational videos on service navigation were translated into Vietnamese, Tagalog, and Spanish. In the fall of 2021, CAPTAIN hosted an informational webinar on strategies for providing equitable services across the California service systems. In the fall of 2022, CAPTAIN hosted a workshop for its members on supporting English learners with autism.

The identified needs for more diverse resources highlight a key role of the delivery system. There is a notable underrepresentation of research focused on adults with autism and racial and gender diverse individuals with autism (Shefcyk 2015; Smith et al. 2020). After identifying the state-wide needs across service systems (e.g., working with girls with autism, working with English-learners or non-English speaking families), the delivery system may then engage with researchers at the translational level about these discrepancies to develop studies that prioritize diversity and inclusion in their designs (e.g., adapting resources for child welfare and foster care providers).

5 | Limitations and Future Directions

As CAPTAIN is based in California, these specific findings may not be generalizable to a broader audience. Other states employ similar statewide strategies for dissemination and

implementation of EBP for autism (Schetter et al. 2020). It may be worth replicating this work by specifically targeting a more representative sample. Future research may consider incorporating a mixed-methods model of analysis to evaluate other survey items on barriers and facilitators members have experienced while performing their CAPTAIN duties. By doing so, we may be able to draw more concrete correlations between the suggested resources and any prominent influences on members' performance. Although over 60% of CAPTAIN members responded to the survey question, only half of the responses were codable. Additionally, the survey was collected during the pandemic. These limitations may further affect the generalizability of the findings. Another future direction may involve expanding on these data to include responses to this question from previous and future surveys to investigate trends across years. Moreover, follow-up interviews and focus groups could provide richer data.

6 | Conclusions

While CAPTAIN operates within the boundaries of California, CAPTAIN members represent diverse communities and the EBP delivery system across the state. Thus, these data may inform other state-wide or international efforts to increase EBP awareness and use with consideration for differences in systems of service and delivery. CAPTAIN's role within the ISF is to bridge the gap between research and practice. This goal will only be attainable and sustainable with continual assessment and consideration for what its network of community members deems essential to the success of their dissemination and implementation efforts.

Ethics Statement

The study was approved by the Institutional Review Board at the University of California, Davis.

Conflicts of Interest

The authors declare no conflicts of interest.

Data Availability Statement

The data used in this study is available from the corresponding author, J.L., upon reasonable request.

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Supporting Information

Additional supporting information can be found online in the Supporting Information section. **Data S1:** COREQ Checklist.