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Early Intervention: Reducing the Impact of Risk Factors/Early Intervention: Maximizing Developmental Outcomes Through Family-Centered Practices

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Early Intervention: Reducing the Impact of Risk Factors

by

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Chapter 1: Introduction

One in six children between the ages of 3 and 17 years old have a developmental disability which impacts their ability to move, play, think, act, learn, or speak (National Center on Birth Defects and Developmental Disabilities [NCBDDD] & Centers for Disease Control and Prevention [CDC], n.d.). However, only a fraction of these children receive services to support their developmental needs. Less than one-fifth of these children receive early intervention (EI) services before their 3rd birthday (Vitrikas et al., 2017). Children's brains are the most adaptable in their first 3 years of life. Over time, the neural circuits in a child's brain become more difficult to change. Therefore, intervention has a greater benefit when provided early in a child's life (CDC, 2021). "Without solid early learning children do not have the experiential or neural building blocks from which to evolve more complex understanding or knowledge of their physical and social world" (Johnson et al., 2015, p. 11).

Overview of the Individuals with Disabilities Education Act

The Individuals with Disabilities Education Act (IDEA) is a law which makes a free and appropriate public education available and ensures special education and related services to eligible children in the United States. According to this law, disabilities are a part of the human experience and do not reduce the rights of individuals to contribute to or participate in society. IDEA is founded on the belief that improving educational outcomes for children with disabilities is an essential component of our national policy of ensuring equal opportunities for individuals with disabilities (IDEA, n.d.).

The Education for All Handicapped Children Act, currently known as IDEA, was signed into law in 1975. This action was the foundation of the United States' commitment to ensuring children with disabilities can explore their interests, develop their skills, and contribute to their community. This law guarantees every child with a disability has access to a free and appropriate public education (FAPE) in the least restrictive environment (LRE). Subsequent amendments, as reflected in the IDEA, have led to an increased emphasis on the provision of services for young children from birth through 5. The IDEA upholds and protects the rights of infants, toddlers, children, and youth with disabilities and their families. Significant progress has been made toward improving educational outcomes, protecting the rights, and meeting the individual needs of children with disabilities (IDEA, n.d.).

Overview of Early Intervention

Recognition that children’s brains develop rapidly in their first 3 years of life is the foundation of Part C of the IDEA. This section of the IDEA recognizes the need to encourage the development of infants and toddlers with disabilities, minimize their risks of developmental delay, reduce the education cost for our society, maximize their potential to live an independent life, and equip families with the strategies needed to help their children with disabilities (Dragoo, 2019). “Early intervention (before school age) can have a significant impact on a child’s ability to learn new skills as well as reduce the need for costly interventions over time” (NCBDDD & CDC, n.d., p. 1).

The supports and services available to infants and toddlers who have developmental delays or disabilities, or are at a high-risk for developmental delay, and their families are often referred to as early intervention (EI). EI services vary based on the needs of each child and their family. Services may include speech therapy, occupational therapy, physical therapy, or a variety of other services. Children’s ability to learn new skills, overcome challenges, and succeed in school and life can be significantly impacted by EI services. These services are available in every state and territory in the United States (CDC, 2019). EI services should be provided in a child's natural environment to the maximum extent possible. For infants and toddlers, this natural environment is typically their home or childcare (Dragoo, 2019).

Part C in Minnesota

In Minnesota, Help Me Grow (HMG) is an interagency initiative of the Department of Health, Department of Human Services (DHS), and the State of Minnesota Department of Education (MDE) which partners with local service agencies. HMG offers resources to families which can help them understand developmental milestones, the predictable sequences in which children typically develop skills, and help them determine if there are developmental concerns for their child. This information can empower families to seek additional support. These resources are also valuable to other individuals who regularly interact with young children, including child care providers and pediatricians (HMG, n.d.a).

HMG resources help parents and professionals identify infants and toddlers who may benefit from the EI services ensured by the IDEA. When developmental concerns are present, professionals and families are encouraged to make a referral. In Minnesota, school districts and staff from special education cooperatives provide EI services to eligible children from birth through age 2 and their families. These services are offered at no cost to eligible children and their families regardless of immigration status or income. EI services are typically provided in the child's home or another setting where the child spends a majority of their day, such as their child care. The child's family plays a significant role in planning for and implementation of EI services. The child’s outcomes, or goals, are developed based on the needs of the child and the wishes and priorities of their family (HMG, n.d.b).

Importance of the Topic

In my role as a Part C, birth - age 2, early childhood special education (ECSE)/early intervention (EI) teacher, I have multiple roles and responsibilities. One of my responsibilities is to provide EI services to eligible infants and toddlers and their parents or other primary caregivers. I receive referrals from a variety of primary referral sources, including children’s parents, medical providers, and child protection staff. I am also responsible for completing screenings and evaluations of students in order to gain an understanding of their developmental progress and determine eligibility for Part C ECSE services.

As a result of this paper, I hope to gain a better understanding of the characteristics of children who are at an increased risk for developmental delay and therefore have a greater need for EI services. I also hope to identify some of the barriers to communication with primary referral sources as well as barriers to the referral, screening, evaluation, and service provision processes. Finally, I would like to identify strategies for overcoming these barriers in order to increase EI access for those who need it most.

Research Questions

The following questions guide this review of literature:

1. What are some of the characteristics of children who are at an increased risk of having developmental delays and are therefore in need of EI services?
2. What steps can be taken to increase access to EI services for the infants and toddlers who need it most?

Definitions

Key terms are defined in this section.

Autism spectrum disorder (ASD) A neurodevelopmental disability characterized by differences in socialization, communication, patterns of thought, or repetitive actions (Putt, 2021).

Child Abuse Prevention and Treatment Act (CAPTA) Provides federal funding to states in order to address child abuse and neglect through preventative measures, investigation, prosecution, and treatment (Child Welfare Information Gateway, 2019).

Child Protective Services (CPS) A state agency that investigates reports of child maltreatment and works with families to prevent maltreatment (Minnesota Department of Human Services, 2021).

Early childhood (EC) Refers to the first years of a child's life, oftentimes referring to infants, toddlers, and preschoolers (MDE, n.d.a.).

Early childhood special education (ECSE) The supports and services which are provided to infants, toddlers, and preschoolers with disabilities and their families (MDE, n.d.a.).

Early intervention (EI) Another term for the services provided to infants and toddlers who have developmental delays and their families. EI services may include a variety of providers, such as speech, occupational, or physical therapy, and can have a significant impact on a child's development (CDC, 2021).

Individualized Education Program (IEP) The service plan used in special education for children ages 3 to 21, which focuses on the educational needs of a child (PACER Center Inc., 2011).

Individualized Family Service Plan (IFSP) The service plan used in special education/EI for children from birth to age 2, which focuses both on the developmental needs of a child and the priorities and concerns of their family (PACER Center Inc., 2011).

Infant-Early Childhood Mental Health (IECMH) The social-emotional development of young children, which includes their ability to form a secure attachment with their caregivers, express and experience a variety of emotions, learn to regulate their emotions, and safely and comfortably explore their environment (Smith et al., 2020).

Late language emergence (LLE) A delay in vocabulary acquisition and the development of articulation and sentence structure. Children with LLE may, but do not always, have receptive language delays in addition to expressive language delays (The American Speech-Language-Hearing Association [ASHA], n.d.).

Normal language emergence (NLE) Language development which follows the typically expected trajectory of vocabulary acquisition, articulation, and sentence structure (Rice et al., 2008).

Social-emotional (SE) The ability to interact with others, form and maintain relationships, and experience, express, and manage a variety of emotions (HMG, n.d.c).

Socio-economic status (SES) A measure of an individual's social and economic position relative to others, which may include their income, education level, and occupation (Darin-Mattsson et al., 2017).

Specific language impairment (SLI) A communication disorder present in individuals who have no intellectual disability. This may impact a child's understanding (reading or listening) and use (speaking or writing) of language and may be present into adulthood (Rice, 2012).

The Individuals with Disabilities Education Act (IDEA) A law which makes a free and appropriate public education available and ensures special education and related services to eligible children in the United States (IDEA, n.d.).

Typically developing (TD) Refers to an individual who develops and maintains skills following the predictable or expected course in which most individuals acquire and refine behavior, knowledge, and skills (Wadhera & Kakkar, 2020).

Chapter 2: Review of Literature

It is essential to identify the unique characteristics and needs of the children who are at an increased risk of having developmental delays. This knowledge increases the chances of providing EI services to the children who need them most. This review of literature focuses on the characteristics, risk factors, and unique needs of two groups of children at an increased risk of developmental delays, children who are victims of abuse or neglect and children who are late talkers. This is not a comprehensive list of all children in need of EI, but rather an in-depth examination of the unique characteristics of these two populations of young children.

The Prevalence of Developmental Delay in Victims of Abuse or Neglect

Children who are victims of abuse or neglect are one of the groups of children who are at an increased risk for developmental delays and behavioral problems (Allen et al., 2012). "Maltreated infants and toddlers face increased risks for developmental, behavioral, and emotional problems compared to the general population of young children" (Allen, et al., 2012, p. 1050). Family-centered EI services have the potential to improve the developmental and behavioral outcomes for these vulnerable infants and toddlers (Allen, et al, 2012).

The Child Welfare System

"The child welfare system is a group of services designed to promote the well-being of children by ensuring safety, achieving permanency, and strengthening families" (Child Welfare Information Gateway & Children's Bureau, 2020, p. 2). Oftentimes families initially become involved with the child welfare system due to a report of suspected child maltreatment. The Child Abuse Prevention and Treatment Act (CAPTA) defines child maltreatment as serious harm, including physical, sexual, or emotional abuse, or neglect, caused to a child by their parents or other primary caregivers (Child Welfare Information Gateway & Children’s Bureau, 2020).

Each state has their own laws which define abuse and neglect, mandates for reporting, and required agency interventions. Any individual with concerns can report their suspicions of child abuse and neglect (Child Welfare Information Gateway & Children’s Bureau, 2020). “Most reports are made by people called ‘mandatory reporters,’ who are individuals required by State law to report suspicions of child abuse and neglect” (Child Welfare Information Gateway & Children’s Bureau, 2020, p. 3). Professionals who work with children and families must do their part to help protect children from harm by making a child protection report if they have a reason to believe that a child has been or is being abused or neglected. Examples of professionals who are mandated reporters include medical personnel, social workers, therapists, child care providers, school staff, and law enforcement (Minnesota DHS, 2016).

After a report is received, it is generally screened in or screened out. If there is enough information to suggest an investigation is warranted, a report will be screened in. If there is not enough information to suggest an investigation is warranted, not enough information to follow up on, or if the instance reported does not meet the legal definition of child abuse or neglect, a report may be screened out (Child Welfare Information Gateway & Children’s Bureau, 2020).

After a report is screened in, a CPS caseworker will respond within a few hours or days depending on the exact circumstances and the severity of the situation. CPS caseworkers may speak with the child’s parents as well as other people who have contact with the child, including teachers, childcare providers, or doctors. They may also speak directly with the child either alone or with a caregiver, depending on the child’s age and level of risk. If a child is believed to be in immediate danger, they may be moved to a relative's home, shelter, or foster home during the investigation or court proceedings. CPS caseworkers also assess family strengths and needs and work to connect the family to community resources (Child Welfare Information Gateway & Children's Bureau, 2020).

After the investigation is completed, the case is typically determined to be either unsubstantiated (unfounded) or substantiated (founded). If a case is determined to be unsubstantiated, this typically means there was not sufficient evidence for the caseworker to determine the child was neglected or abused or it is determined that what occurred did not meet the legal definition of child neglect or abuse. If a case is determined to be substantiated, this typically means an incident of child neglect or abuse occurred (Child Welfare Information Gateway & Children's Bureau, 2020). "Some States have additional categories, such as 'unable to determine,' suggesting there is not enough evidence to either confirm or refute that abuse or neglect occurred" (Child Welfare Information Gateway & Children's Bureau, 2020, p. 4).

The Partnership Between Child Welfare and EI Systems

A partnership exists between the child welfare and EI systems due to the CAPTA and the IDEA. This partnership is beneficial as EI services can be a supportive resource for young children and their caregivers that helps improve safety, stability, and well-being. Child welfare professionals are required by Federal legislation to refer children who are potentially eligible to EI programs, due to the significant overlap in infants and toddlers who are victims of abuse or neglect and those who have developmental delays. Children who have disabilities are significantly more likely to be victims of abuse or neglect than children without disabilities. Children who are victims of abuse or neglect often have developmental delays, social-emotional or behavioral challenges, attachment disorders, and altered brain development. Young children have an increased risk of being victims of maltreatment, with the highest victimization rate in children who are less than 1 year old (Child Welfare Information Gateway & Children's Bureau, 2018).

It is mandated that children under age 3, who are involved in a substantiated case of neglect or abuse or experienced a prenatal drug exposure, be referred to a state's early intervention program (EIP). Additionally, child welfare professionals may refer any child they believe may be eligible for EI services. While a referral is not required when there is not a substantiated case of maltreatment, developmental delays may still be present and child welfare professionals should consider the need for a referral for all cases involving young children (Child Welfare Information Gateway & Children's Bureau, 2018).

While there is a documented need and mandate for children with developmental delays within the child welfare system to be referred for EI evaluations and services, there is concern these referrals are not consistently happening (Child Welfare Information Gateway & Children's Bureau, 2018). A "growing body of research suggests that mandated referral legislation has not resulted in consistent EI referral or service utilization by maltreated children" (Allen et al., 2012, p. 1051). There are several barriers to the referral process. Foster parents, court personnel, and child welfare professionals are not always trained to recognize developmental delays in young children. They may also have limited knowledge about EI services. Child welfare agencies and EI programs also have different policies, approaches, and focuses and professionals from each group may not understand how the other agency works. One notable difference between the two agencies is child welfare professionals typically are involved with families on an involuntary basis, while EI staff work with families on a voluntary basis. Even after the referral is made to the EIP, barriers still exist. Federal legislation requires parental consent for screenings, evaluations, or services and requires their participation in the process. Sometimes the parents of children who have been the victim of abuse or neglect are not able to or refuse to provide this consent (Child Welfare Information Gateway & Children's Bureau, 2018).

Interagency collaboration with a variety of relevant agencies and stakeholders, including child welfare and EI professionals, can support referrals to EI. These collaborative efforts are beneficial for sharing information and clarifying questions about the procedures of each system. It also promotes a clear understanding of the individual roles within each agency and can create opportunities for cross-disciplinary education. This process can help with the development of referral procedures that ensure compliance with State and Federal laws and regulations. Through interagency collaboration, agreements can be developed which establish ongoing communication and referral procedures (Child Welfare Information Gateway & Children's Bureau, 2018).

While the amendments made to the CAPTA in 2003 and the IDEA in 2004 created a promising partnership between EI agencies and child welfare agencies, little research has been done to evaluate the implementation and success of the policies developed. There is concern that the risk of developmental delay is greatest for infants and toddlers, due to their dependence on their caregivers. This age group "represents 27.3% of all maltreatment victims and 27.8% of all children in foster care" (Johnson-Motoyama et al., 2016, p. 186). Despite the rate at which developmental delays occur in young children in the child welfare system, research suggests a limited number of children receive the services necessary to support their development (Johnson-Motoyama et al., 2016).

EI services can increase a family's ability to maintain their child's safety, meet their needs, and help them learn (Child Welfare Information Gateway & Children's Bureau, 2018). EI services are an opportunity for preventing or minimizing the negative impact of abuse and neglect. These services can potentially lower the risk of future abuse or neglect by enhancing the parent-child relationship and can also have a positive impact on later educational performance and use of special education services by addressing developmental delays early (Johnson-Motoyama et al., 2016).

Developmental Delay in Substantiated versus Unsubstantiated Cases

While an EI referral is only mandated when there is a substantiated case of abuse or neglect, research has found children involved in unsubstantiated cases have also demonstrated needs that are equal to, and sometimes greater than, children involved in substantiated cases. These findings raise concerns about limiting the requirement of making a Part C referral to children in substantiated cases. Johnson-Moyoyama et al. (2016) examined the prevalence of developmental delays, child welfare referrals to EI programs, and the participation in EI programs amongst young children involved with the U.S. Child Welfare system. Using data from the second National Survey of Child and Adolescent Well-Being (NSCAW II), they examined patterns in both unsubstantiated and substantiated cases of child maltreatment. They also examined the rates at which young children who demonstrated developmental delays were referred to EI programs to identify referral patterns. Finally, they examined potential barriers to the receipt of EI services after the referral is made by CWS (Johnson-Motoyama et al., 2016). The sample for this study included children who were under 37 months of age, with an average

age of 18.3 months. The final analytic sample size was 2,527 children (Johnson-Motoyama et al., 2016).

This study found that CWS caseworkers had identified the need for a developmental evaluation for approximately 10% of children. Of these children, 20% scored at least 1.5 standard deviations (SD) below the mean in cognitive development, 32.9% scored at least 1.5 SD below the mean in the area of language development, and 17.9% scored at least 1.5 SD below the mean in the area of adaptive development. Overall, this study did not find a significant difference in development between children involved in unsubstantiated cases versus those involved in substantiated cases. However, 60% of children with parents born outside of the U.S. who were involved in unsubstantiated cases demonstrated delays on every developmental assessment completed (Johnson-Motoyama et al., 2016).

Approximately 12% of all children were referred to EI programs by CWS staff, with children in substantiated cases of abuse or neglect being almost two times as likely as children in unsubstantiated cases to be referred. Children in sexual abuse cases were more likely to be referred than children in other cases of abuse or neglect. Children in out-of-home placements, including foster care and kinship care, were referred more frequently than children who were living in the home. Children with Spanish-speaking caregivers were less likely to be referred than children with English-speaking caregivers were. Approximately half of the children who were referred to EI programs received services within the study period, with children in substantiated cases being slightly more likely to receive services. CWS caseworkers reported directly connecting the child with the EI programs approximately half of the time, providing families with the information of the EI providers 38.4% of the time, and suggesting the child get service 38.2% of the time. Approximately one-third of caseworkers reported following up to see if services were received (Johnson-Motoyama et al., 2016).

While the policies in place offer a promising option for supporting the developmental needs of young children, "findings from this study suggest that child welfare and EI agencies likely require additional support to successfully meet the goals of the CAPTA Part C and IDEA provisions" (Johnson-Motoyama et al., 2016, p. 193). Part C of the IDEA requires the cooperation and collaboration of many agencies. The barriers to interagency coordination include differences in procedures and goals, limited resources, timelines, and confidentiality concerns. Several states have implemented policies with the goal of overcoming these barriers and increasing collaboration between agencies. More research is needed to determine the effectiveness of these approaches in facilitating referrals to EIPs and providing services to eligible children, with an emphasis on children who are involved in both unsubstantiated and substantiated cases of abuse or neglect (Johnson-Motoyama et al., 2016).

The Need for and Receipt of Services for Victims of Abuse or Neglect

Casanueva et al. (2008) examined the rate of occurrence of developmental delays, estimated the use of EI services, and examined the variations in developmental needs and service use in children whose families were investigated by CPS. They echo the concerns of the previously mentioned studies that the determination of a case of abuse or neglect as unsubstantiated versus substantiated may not be an accurate reflection of the child's developmental needs as research suggests a similar rate of occurrence of developmental delay in both groups of children. This study aimed to identify the percentage of children from birth through age 3 who are involved with CWS who need EI services and the percentage of the children in need who receive services. Another goal was to identify if children in substantiated cases of abuse or neglect have a greater need for EI services than children in unsubstantiated cases and determine if substantiation or developmental need were a better predictor of the receipt of EI services (Casanueva et al., 2008).

This study was based on data from the National Survey of Child and Adolescent Well-Being (NSCAW), a longitudinal study of the well-being of children ages 14 and under who had contact with CWS. This analysis focused on the children from birth to 36 months old who were involved in a CWS investigation as an infant or toddler and were a part of the NSCAW sample group. There was a final sample size of 1,845 children. Approximately half of the children lived below the federal poverty level. Tools used to evaluate children's development included the Battelle Developmental Inventory, the Preschool Language Scale–3, the Woodcock-Johnson III Tests of Cognitive Abilities, and the Vineland Adaptive Behavior Scale Screener. For this study, children who scored at least 2 standard deviations below the mean on at least one standardized developmental tool or at least 1.5 standard deviations below the mean in two or more areas were considered to be in need of EI services (Casanueva et al., 2008).

Determination of the presence of an established mental or medical condition, biomedical risk factors, and environmental risk factors was based on caregiver and caseworker reports. Biomedical risk factors considered were low birth weight, lead poisoning, AIDS, and failure to thrive. Environmental risk factors included one or more of the following for the primary caregiver: cognitive or physical impairments, serious mental health needs, and active drug or alcohol abuse. If children were exposed to two or more of the following, environmental risk was also established: active drug or alcohol abuse by a secondary caregiver, caregiver age of less than

19 years old at delivery, single caregiver, and incarceration of the primary caregiver (Casanueva et al., 2008). The authors of the study noted that “this study uses NSCAW data to measure need for Part C services. The study does not have information about official determination of eligibility by Part C service teams, which is based on professional assessment of the child from multiple sources” (Casanueva et al., 2008, p. 248). Because the NSCAW data includes information about the receipt, or development, of an IFSP or an Individualized Education Program (IEP) and does not include information regarding the actual service use, this study used caseworker and caregiver report of the receipt or development of an IFSP or IEP to determine receipt of EI services (Casanueva et al., 2008).

This study found that most of the cases of child maltreatment were unsubstantiated. For most of the children, the primary form of maltreatment was neglect. The second most common form of maltreatment was physical abuse. Caseworkers report of harm to the child and evaluation of the degree of risk for the child in substantiated cases was more likely to be moderate or severe than in unsubstantiated cases. Caseworkers also reported greater rates of caregiver problems which place children at risk in substantiated cases (Casanueva et al., 2008).

States are required to provide EI services to children who have a measurable developmental delay and children who have a diagnosed mental or physical condition which has a high probability of resulting in a developmental delay (Johnson-Motoyama et al., 2016). Of the children involved in a CWS investigation, 36% had language, cognitive, or adaptive behavior scores at least 2 standard deviations below the mean, with most delays seen in cognitive development. Children who were involved in unsubstantiated cases were more likely (38.2%) to need EI services than children involved in substantiated cases (27.6%). At the follow ups at 1 year, 3 years, and 5 to 6 years, the differences in the status of substantiation were no longer significant as over one-third of children in each group had developmental delays (Casanueva et al., 2008).

States can also choose to use risk factors to determine a child's eligibility for EI services (Johnson-Motoyama et al., 2016). When environmental and biomedical risks were considered for criteria, it was determined that, at baseline, 64% of children would have met Part C criteria. While a significant number of children who are involved with CWS demonstrate risk factors for a developmental delay, most states do not consider these risk factors in eligibility determination (Casanueva et al., 2008).

Of the children who were identified to need EI services, just 12.7% received an IFSP by age 3. At the 3 year follow up 17.5% of children determined to be in need had an IEP and 26.8% had an IEP at the 5 to 6 year follow up. When considering not just those determined to be in need, but all children whose families were investigated by CWS, these numbers vary. Of all children whose families were investigated by CWS, regardless of the result of the investigation, 11.7% received an IFSP between the beginning of the study and the 1 year follow-up. Approximately one-third of the children who received an IFSP by age 3 also received an IEP after age 3. Children who had an established medical condition were the most likely to receive an IFSP (Casanueva et al., 2008).

While the occurrence of developmental delay was higher at baseline in children involved in unsubstantiated cases and similar for both groups at the follow-ups, this study found that children involved in substantiated cases were twice as likely to have an IFSP as children in unsubstantiated cases. The study also found that the presence of a medical condition or developmental delay at baseline was not a significant predictor of the receipt of an IFSP. The level of CWS involvement was a somewhat reliable predictor of a child having an IFSP, as children with an active CWS case were more likely to have an IFSP than children who were not involved in an active CWS case. One possible explanation for this difference is that CWS workers may be more likely to connect the child with EI services when they have greater involvement with the child and family (Casanueva et al., 2008).

This study found only a small percentage of children in need of EI services received an IFSP and identified a clear discrepancy between eligibility for and receipt of services. Additionally, children in unsubstantiated cases had a greater need for EI services than those in substantiated cases and the substantiation status of a case appeared to be largely irrelevant several years later as the occurrence of developmental delays was similar in both groups. This suggests the need for more research on the negative impact of environmental risks in children involved in unsubstantiated cases (Casanueva et al., 2008).

Authors state that the developmental delays of many children involved in unsubstantiated cases are being missed, as a Part C referral is only mandated for substantiated cases. One explanation for the increased likelihood of an EI referral for children with substantiated cases is the caseworker’s determination of a higher level of risk due to the child suffering greater harm. Caseworkers may also believe children in substantiated cases have more developmental delays, even though the occurrence of developmental delay is similar in children in unsubstantiated cases. Additionally, the primary purpose of CWS investigations is to evaluate maltreatment and risk to children. Therefore, the medical status and developmental delays of children may not be noticed as frequently (Casanueva et al., 2008).

While the presence of an IFSP is higher for children who were involved in a CWS investigation, regardless of substantiation status, than for the general population, it still does not match the high level of need seen in this group of children. EI services have the potential to improve children's developmental outcomes and reduce the impact of child maltreatment. By providing EI service to infants and toddlers, the need for future special education services due to continued developmental delay may be reduced. Parent-child relationships can be further strained when developmental delays are present. EI services can be a support for families in implementing strategies to support their child's development and strengthening the parent-child relationship (Casanueva et al., 2008).

Barriers to the Partnership Between Child Welfare and Early Intervention

Allen et al. (2012) sought to examine the intra- and inter-system barriers to EI referral, eligibility, and service use for children who are victims of abuse or neglect. Their goal was to identify the financial, ecological, social, and cultural barriers to accessing EI services, including the required referral, as well as the assessment of, eligibility for, and provision of EI services. Another goal of this study was to identify the facilitators of knowledge transfer between organizations (Allen et al., 2012).

The Role of Knowledge Transfer and Organizational Culture

The transfer of knowledge, or information, between child welfare agencies and EI providers can either be a primary barrier to or strong facilitator of collaboration between the two systems. In order to increase collaboration between systems, increased attention should be paid to how knowledge is acquired, interpreted, used, and shared both within an individual system and between systems. When knowledge needs to be transferred both within an organization and between multiple organizations, the barriers to knowledge transfer are multiplied (Allen et al., 2012).

Organizational culture refers to the shared values and norms of those within an organization. The culture of an organization is often unspoken, while the structure and standard procedures are typically explicitly stated. Each of these play an equally essential role in the transfer of knowledge between organizations (Allen et al., 2012). "Although employees in child welfare and EI are broadly classified as public sector human service workers, key differences exist in the organizational cultures of these agencies that impact internal and external knowledge transfer" (Allen et al., 2012, p. 1052). The organizational culture of EIPs include a collaborative, family-driven, and strength-based approach. Child welfare agencies also aim to preserve families, but must also ensure child safety. The dichotomous nature of their work can lead to an ambivalent or even negative perspective for families (Allen et al., 2012).

Financial, technological, and human resources must all work in unison with each other to have an effective knowledge transfer procedure. The individuals who are a part of each organization are typically responsible for the knowledge transferred within the organization and between organizations. The quality of knowledge transfer is impacted by the background knowledge, training, and rate of turnover of the organization's staff or members. As individuals within an organization interact, they draw on their previous knowledge and experiences and through this process further expand their skills and knowledge. This process adds to the value of the organization as it enhances its collective knowledge and experience. Individuals who connect two or more systems, whose goals and expectations vary in some way, play an essential role in the knowledge transfer process (Allen et al., 2012). "The concept of knowledge transfer lies at the heart of many well-intentioned public policies that aim to connect people to valuable and needed services" (Allen et al., 2012, p. 1052). However, the knowledge transfer process is not always straightforward and a lack of attention to this process may hinder the efforts to increase inter-organization collaboration (Allen et al., 2012).

Identifying Barriers to Successful Partnerships

As a part of this study, EI providers, child welfare workers, and public health officials in the greater Boston metropolitan area were interviewed regarding their perceptions of the ability to access and the utilization of EI services for children who are victims of abuse or neglect. Interview topics included the EI referral process, consent procedures, screening and evaluation procedures, and service delivery methods. Additional areas of discussion included organizational culture, standard routines, access to technology, employee backgrounds, in-service training, and financial resources within each organization (Allen et al., 2012).

Providers who represented a variety of disciplines, including psychologists, social workers, and developmental specialists, and participated in different parts of the EI process, including intake, evaluation, and ongoing service, were included in this study in order to identify various needs throughout the process. Additionally, both supervisors and front-line workers were interviewed in order to understand both management and service delivery perspectives and needs. Interview respondents included 11 workers from the Department of Children and Families (DCF) from multiple offices in the area, 15 EI providers from several local programs, and two state-level Department of Public Health (DPH) officials. Of the respondents, 25 were front line workers and eight were supervisors. Interview respondents were primarily female, as there were just two male respondents. This aligns with the general composition of the EI and child welfare workforces which are predominantly female (Allen et al., 2012).

The interviews were audio-recorded, transcribed, and then coded for primary themes. The themes identified during the interviews included an awareness and understanding of the referral, evaluation, and service process, facilitators of and barriers to referral, strategies for connecting EIPs and CWS, and training or educational needs. Additionally, although questions about the concept of knowledge transfer were not specifically asked, the elements of this process were addressed by many of the respondents. Specifically, respondents shared that a lack of shared knowledge between systems was a significant barrier to the mandated referral process. The success of knowledge transfer within and between organizations seemed to be significantly impacted by both intra- and inter-organizational factors (Allen et al., 2012).

Differences in Organizational Culture and Standard Operating Procedures

While both agencies exist to help children and families, several key differences were identified between the organizational culture of the EI and child welfare programs. Due to these differences, families often have very different reactions to involvement from each of the programs. Generally, EI staff felt the voluntary and family-centered nature of their work portrayed them as non-threatening to families. On the other hand, the mandatory, investigation-focused, and rule-driven nature of the child welfare agency often leads to adversarial reactions from families, including concerns of having their children removed from their home. The differences in the approach of each organization were often an underlying factor for the misunderstandings or conflicts between the child welfare and EI agencies (Allen et al., 2012).

Respondents also identified differences between the structure and operating procedures of each program, which were often influenced by the differences in organizational culture discussed above. While each of the programs are supported by government funding, differences exist in the accountability and documentation requirements of each program. The need for child welfare programs to document information is based largely on litigation concerns. EI providers expressed an increased focus on documentation due to the amount of paperwork required. The documentation requirements of EIPs were reported to have negative impacts on outreach and care coordination between EI and child welfare programs. One common frustration amongst EI providers was the child welfare program's lack of understanding of the timeline requirements of EI. They shared that if they receive a referral, but they are not able to successfully contact the child welfare agency who made the referral within a timely manner, they have to contact the family without an awareness of the child's developmental needs or the severity of the family's situation (Allen et al., 2012).

Protecting Families' Confidentiality

Child welfare and EI providers expressed various perspectives regarding the role confidentiality plays in transferring knowledge between programs. Concerns of confidentiality varied amongst staff within each agency. One respondent strongly believed families' confidentiality had been infringed upon during the process of referring a child to EI. However, it was more common for EI providers to express that confidentiality concerns have been a barrier to receiving thorough and accurate information from child welfare agencies, which hinders their ability to make an accurate assessment of the child's needs and eligibility for EI services. Still, one respondent emphasized both EI and child welfare professionals should be cautious when sharing sensitive information about families (Allen et al., 2012).

The Availability and Importance of Resources

A lack of financial, technological, and human resources was reported to be a significant challenge for both child welfare and EI programs. Budget concerns were reported to have further decreased resources for both systems, which already had limited resources. Budget cuts have also led to layoffs, which in turn created higher caseloads. Higher caseloads have made it difficult to communicate with and see families regularly and financial limitations have decreased the availability of the resources and supports families need. Higher caseloads also typically mean staff are spending more time out in the field and less time in the office. This places additional limitations on the ability of staff members to coordinate services between agencies. Another consequence of financial strains is less support for professional development and a high rate of turnover, which lead to an overall less experienced workforce. This has an especially negative consequence for these vulnerable children and their families. The availability of technological resources is also impacted by funding and the availability of technology has a clear effect on knowledge transfer and workflow (Allen et al., 2012).

The Need for Increased Communication and Understanding

Workers in both agencies shared that a greater understanding of and communication between the two systems was a significant need. EI providers reported knowledge transfer from DCF was critical for working with the children and families connected with the child welfare system, especially as some of the families are hesitant to engage in services due partially to their mistrust of mandated service providers. Without specific information from child welfare workers, EI providers must rely on the caregiver’s report of the child’s biological and environmental risks. EI providers report it is often rare for caregivers to voluntarily share this information, especially regarding environmental risks. Without this information, EI providers believe they do not have all the information necessary to determine the child’s needs and eligibility for EI services (Allen et al., 2012).

Child welfare employees expressed frustration and confusion at times when children were determined to not be eligible for EI services, even when their circumstances may warrant them. Both EI and child welfare workers stated that helping vulnerable children and their families was one of the main priorities of their job (Allen et al., 2012). “However, differences and incompatibility in organizational culture, organizational structure, and fiscal, technological and human resources effectively created barriers to EI services for young children involved with the child welfare system” (Allen et al., 2012, p. 1056). Respondents suggested that interagency training may be a way to familiarize workers in each system with the standard operating procedures, goals, and requirements of the other system. Both agencies reported that their human resources were one of their greatest strengths and described collaboration through relationships as a key to successful collaboration between agencies. Individuals who link two or more organizations, sometimes referred to as boundary spanners, were also reported to be valuable for promoting interagency collaboration. Sometimes these boundary spanners were developed spontaneously, while some programs focused specifically on developing the role of a boundary spanner between their program and other programs (Allen et al., 2012).

Overcoming Barriers and Creating Successful Partnerships

While the disproportionate developmental delays of children who have been victims of abuse or neglect are highly documented, “a lack of systems thinking has prevented recognition of the role that knowledge transfer plays in the mandated referral policy created to address the needs of this population” (Allen et al., 2012, p. 1056). Differences in the organizational cultures and resources of each system have complicated the knowledge transfer process. Still, common ground exists between the agencies and a focus on and open discussion about the shared values and goals of each agency could help workers to overcome their existing differences (Allen et al., 2012).

One strategy suggested for increasing collaboration and alleviating confidentiality concerns was providing joint visits to families, with both EI and child welfare workers present. This strategy would give both agencies access to the same information about the family they are working with and would also build a stronger connection between the two systems. While high caseloads and busy schedules are a potential barrier to this option, it is a strategy worth considering due to the potential benefits. Another strategy which was strongly suggested by the interview participants and the authors was interagency training. This strategy can help increase communication between agencies, which in turn provides a greater understanding and stronger connection between them. This process could be a strong facilitator of the knowledge transfer between EI and child welfare agencies in order to benefit children and families working with each program (Allen et al., 2012).

Infant and Toddler Mental Health

One developmental area significantly impacted when a child experiences abuse or neglect is social-emotional (SE) development. A survey conducted by the National Center for Children in Poverty (NCCP) examined the Part C EI features, including policies, procedures, eligibility, services, and funding, of 50 states and the ability of these features to meet the SE and mental health needs of young children. Infant and toddler mental health refers to a child's SE development in their first 3 years of life. This includes their ability to form a secure attachment with their caregivers, express and experience a variety of emotions, learn to regulate their emotions, and safely and comfortably explore their environment. This survey identified significant gaps in the ability of the EI programs to meet the SE and mental health needs of infants and toddlers (Smith et al., 2020).

Recently, there has been an increased emphasis on providing support for the SE and mental health needs of young children. In response to the federally mandated State Systemic Improvement Plans (SSIPs), each state has identified an area for improvement. Thirty-one states have chosen the SE domain for their SSIP. Part C providers and coordinators are also participating in a variety of other initiatives which seek to improve the availability and quality of mental health services. These efforts are evidence of the recognition of the role mental health and SE needs play in a child's development (Smith et al., 2020).

Children's SE abilities influence their overall development. Children who have mental health needs are more likely to experience ongoing or worsening challenges if these needs are not supported. Children who have developmental delays or disabilities are also at a higher risk for mental health conditions. Coaching a child's caregiver to support their child's SE learning and mental health needs is a valuable EI practice. This practice gives caregivers the opportunity to learn to interact with their child in meaningful ways and build a caring and nurturing relationship with their child. This relationship is the foundation for supporting their child's overall development. Supporting the mental health needs and SE skills of infants and toddlers helps set them on the right path and gives them a greater chance to succeed in school and in life (Smith et al., 2020).

Using a SE Screening or Evaluation Tool to Identify Mental Health Needs

The use of a specialized SE screening tool increases the likelihood of identifying the SE delays or mental health needs of children. Most SE screening and evaluation tools are rating scales completed by a person who knows the child well. Very few states require the use of screening tools that specifically address SE skills. This study found that states were more likely to recommend the use of these tools than they were to require it. Similarly, the use of a specialized SE tool as a part of an evaluation provides a greater understanding of children's development in this domain. States were more likely to recommend a standardized SE evaluation or assessment tool than they were to require it and very few states required the use of one of these tools.

As documented in the studies above, childhood trauma, including abuse and neglect, and family risk factors, can have a significant and negative impact on children's development. For children who are involved in a substantiated case of abuse or neglect, nine states require, 24 states recommend, and 18 states neither recommend or require the use of a SE screening or evaluation tool. Some Part C coordinators stated in qualitative responses or follow-up conversations that the family interviews completed during the evaluation process address a child’s and family’s risk factors (Smith et al., 2020). While interviews may identify adverse circumstances and risk factors, the “use of a standardized tool . . . might ensure a more consistent assessment of important risk factors” (Smith et al., 2020, p. 6). Another factor known to increase the risk of developmental delays and SE challenges for a child is the presence of maternal depression. Even with this knowledge, many states (30) do not provide or make referrals for maternal depression screening, evaluation, or treatment (Smith et al., 2020).

The Inclusion of a Mental Health Expert on the Multidisciplinary Team

Federal legislation requires that Part C evaluations are conducted by a multidisciplinary team of qualified personnel in order to identify the unique strengths and needs of the child. Authors argue that the inclusion of a staff member who has expertise in infant and toddler mental health on the evaluation team is important due to the impact SE skills and mental health needs have on a child’s overall development. Despite this knowledge, three-quarters of states do not require this type of professional to be a member of the evaluation team. A few other states reported this type of professional is a required member of the evaluation team when it is believed, prior to beginning the evaluation, that the child has a SE delay or condition (Smith et al., 2020). “However, these states did not require social-emotional screening, reducing the chance that concerns about delays in this domain or a mental health condition would be identified prior to the evaluation” (Smith et al., 2020, p. 6).

Supporting the Needs of Children Who are Not Eligible for EI

Some, but not all, Part C programs have procedures in place to support the continued monitoring of the development of children who do not meet the eligibility requirements for EI services but are still at risk of a worsening delay or condition. Over half of the states (29) have written policies which state parents should contact the EI program if there are developmental concerns in the future, so that another SE screening or evaluation can be completed. Thirty-one states have policies which state the child, and their family, should be referred to other appropriate services, such as early childhood family education (ECFE) or parent education programs, mental health providers, or other community programs. Five states require the EI program to follow up with families within 3 to 6 months to offer another SE screening. Three states offer regular monitoring of the overall and SE development of children who were determined to be ineligible for EI services. Eleven states do not have any written policies regarding the supports or procedures for ineligible children (Smith et al., 2020).

Evidence-Based Support for Infant and Toddler Mental Health

The types of services which should be provided to children with SE or mental health needs are not specified in federal guidance. Dyadic treatment is a type of therapy which supports both the parent and child as they are both treated by a professional. The professional coaches the parent to engage in positive interactions with their child, which helps strengthen the relationship between the parent and child. Dyadic treatment is most often used when an impaired parent-child relationship is seen or when the interactions between parent and child appear to contribute to the child's SE or mental health needs. Some forms of dyadic treatment are designed specifically for young children who have experienced trauma. Approximately half of the states (24) report that their EI programs provide dyadic treatment. Of these states, six states require, and six states recommend, the use of evidence-based dyadic treatment models. Twelve states allow any dyadic treatment model to be used. Another valuable service is group parenting programs which focus on parenting strategies that build healthy parent-child relationships and support the SE development of children. Thirty-four states report that their EI programs offer group parenting programs. Of these states, 20 allow the use of any parenting program and 14 recommend or require that an evidence-based program is used (Smith et al., 2020).

Training Staff to Identify and Meet Infant and Toddler Mental Health Needs

Over half of the states (29) reported their EI programs use infant-early childhood mental health (IECMH) consultation to train their staff on strategies for identifying and treating the mental health needs of young children. Barriers to accessing these services, which support children's mental health and SE needs, that were reported include the location of qualified IECMH providers, lack of enough qualified providers, and inadequate reimbursement rates. States also shared information about other initiatives they are using to strengthen the supports and services for the mental health and SE needs of infants and toddlers and their families. These strategies include professional development which focuses on mental health, training on promoting positive parent-child interactions and identifying family needs, offering IECMH consultations via telehealth, and collaborating with other agencies about strategies for increasing the availability of and access to mental health supports for young children (Smith et al., 2020).

Infant and Toddler Mental Health Support in Minnesota

Overall, this study found significant variation in the ability of states to identify and meet the mental health and SE needs of infants and toddlers. Most states are working to strengthen their support of this area, but significant gaps still exist (Smith et al., 2020). As an ECSE/EI teacher in Minnesota (MN), I was especially interested in the data reported by EI programs in MN. MN was not one of the states that chose the SE domain as their SSIP focus. It is one of 30 states that recommend, but do not require, the use of an SE screening tool. MN does not recommend or require the use of a standardized SE evaluation or assessment tool during an evaluation, even for children who are involved in substantiated cases of abuse or neglect, and does not require a person with expertise in infant and toddler mental health be a part of an evaluation team (Smith et al., 2020).

Approximately half of the states, including MN, require when a child is determined to be ineligible for Part C services, the child and their family are referred to other appropriate services such as early childhood family education (ECFE) or parent education programs, and the parents are informed they should contact the program if developmental concerns arise in the future so another screening or evaluation can be completed. MN is one of 16 states that does not offer group parenting programs to support parent-child interactions for EI students and families with SE or mental health needs. It is one of the 30 states that does not provide or make referrals for maternal depression screening, evaluation, or treatment. MN is not one of the 29 states whose EI programs use infant-early childhood mental health consultation (IECMHC) to train their staff in strategies for identifying and treating the mental health needs of young children. While a few of the recommended infant and toddler SE and mental health supports are used in MN, it appears that MN does not have many of the discussed policies or recommendations in place (Smith et al., 2020).

Improving Mental Health Supports

The authors made several recommendations based on the results of this survey. The first recommendation is for EI coordinators and other stakeholders to gather information about the consistency of infant and toddler mental health supports, including mental health screening and services. It is valuable to gather information about the actual implementation of policies in place or recommended strategies to identify where gaps exist. By identifying these gaps, goals can be developed for strengthening the supports available to support the mental health needs of infants and toddlers. These conversations with EI providers may also identify valuable strategies already being used within some programs that could become a part of future policy or recommendations. Another recommendation is for states to require the use of practices and tools designed to identify and meet the unique SE and mental health needs of children who are victims of child abuse or neglect. It is recommended that professionals from a variety of organizations be involved in the planning and implementation of policies which strengthen the SE and mental health supports for infants and toddlers. EI programs should also evaluate and strengthen the ongoing support and professional development which focuses on IECMH. This may include training staff to promote positive parent-child interactions and to identify children in need of IECMH support (Smith et al., 2020).

Using Biomedical and Environmental Risk Factors for Eligibility Determination

As stated above, Part C of the IDEA requires states to provide EI services to children who have a measurable developmental delay in one or more areas or who have a diagnosed mental or physical condition with a high probability of resulting in a developmental delay. Additionally, states can determine eligibility and provide EI services based on the presence of risk factors which put children at risk for developmental delays (Johnson-Motoyama et al., 2016). Section 303.5 of Part C of the IDEA states the decision to use risk factors to determine eligibility for Part C services is at the State’s discretion. States may choose to use both biomedical and environmental factors. Environmental risk factors mentioned in section 303.5 include prenatal drug exposure and a history of abuse or neglect (IDEA, 2017). While this is a potential area of eligibility set in place by Part C of the IDEA, based on knowledge that the presence of environmental risk factors increases the likelihood of a developmental delay, very few states have opted to utilize this option (Barth et al., 2008). Therefore, the eligibility criteria of many states may fail to meet the unique needs of children with environmental risk factors, including children who are victims of abuse and neglect, and their families (Allen et al., 2012).

The Cycle of Abuse

Research has found many individuals who were victims of abuse or neglect as children, become perpetrators of abuse, both parental and marital, as adults. This suggests that there is an intergenerational transmission and cycle of abuse (Huefner et al., 2007). Quality EI services can build parents' capacity to provide more nurturing experiences and valuable learning opportunities for their children (Bricker et al., 2018). "Efforts to support and help educate parents must expand if we are to avoid successive generations of children who grow into adults who cannot, in turn, assist their children with healthy and positive development" (Bricker, et al., 2018, p. 132).

Remaining Objective in Early Intervention

EI providers are presented with the unique opportunity of working closely with families with a variety of backgrounds, beliefs, strengths, and needs. At times, this may include encounters that may be initially surprising, even shocking, to the EI provider (Casses & Paquette, 2016). "When presented with high-stress situations in early intervention, providers' subconscious minds can take a journey into judgments and preconceived notions about the nature of how parents, and a family *should* function" (Casses & Paquette, 2016, p. 129).

“Providing emotional supports to families in the context of home visiting requires the early intervention practitioner to be positive, responsive, and sensitive to the emotional needs of diverse families” (Brotherson, et al., 2010). It is essential that EI providers remain objective when faced with these situations. While child protective laws must be followed and suspected abuse or neglect must be reported, it is important that EI providers still seek to build upon a family’s current skills and work towards their potential abilities (Casses & Paquette, 2016). “The early interventionist has the capacity to set the stage for positive interactions with families based on mutual respect” (Casses & Paquette, 2016, p. 129). EI providers can establish a positive and trusting relationship with caregivers, build a caregiver’s capacity to utilize learning opportunities throughout the day, decrease their reliance on the EI provider over time, and encourage the development of the child (Casses & Paquette, 2016).

Maximizing Developmental Outcomes by Intervening Early

Children with a history of abuse or neglect have an increased risk of developmental delays and poorer academic and mental health outcomes (Romano et al., 2015). This is likely due to “(a) insufficient sensory experiences during sensitive periods of brain development (e.g., neglect) and (b) atypical activation of neurons caused by early life stress (e.g., physical abuse, sexual abuse)” (Romano et al., 2015, p. 431). Caregivers who abuse or neglect their children may struggle to provide their children with necessary emotional and developmental support. Negative caregiver-child interactions interfere with a child’s ability to form healthy attachments with others, regulate their emotions, and gain healthy independence at an appropriate rate. Without intervention, these children are more likely to experience lasting emotional, behavioral, and academic delays or difficulties (Romano et al., 2015). “Positive school experiences can help reduce the effects of a stressful home environment, increase children's sense of agency, and promote resilience among children with maltreatment histories" (Romano et al., 2015, p. 432).

EI providers can help families learn improved parenting skills which are responsive, intentional, and effective. They can help build a family's capacity to meet their child's emotional, physical, and academic needs through evidence-based and developmentally appropriate strategies (Barth, 2009). EI providers can provide parents with valuable information and ideas for using praise, rewards, and reasonable, safe, and appropriate consequences with their child, instead of harsh discipline or physical punishment (Letarte et al, 2010). Research has found clear mental health benefits, for both the parent and child, when parenting skills are improved. Parents can learn skills more effectively when they are given hands-on practice with the support of a professional (Barth, 2009).

The Prevalence of Developmental Delay in Late Talking Children

A second group of children who are at an increased risk for developmental delay and therefore more likely to need EI services are children who are late talkers. "Late talker" refers to toddlers who have expressive language delays but may have average receptive language skills. These children are at an increased risk for developmental delay, especially in communication. Some children who are late talkers eventually catch up to their typically developing (TD) peers in the area of language; others do not. It is estimated at age 2, approximately 15% of children begin to show signs of an expressive language delay. Some studies found male children are 3 times more likely to have a language delay than female children of the same age (Hawa & Spanoudis, 2014). While a majority of children who were late talkers score within the average range on standardized language measures once they are school age, many still have weaker language skills than their TD peers (Rice et al., 2008).

Components of Language Development

Language has many components and late language emergence (LLE) or specific language impairment (SLI) seem to have a greater impact on certain components (Rice et al., 2008). The following articles and studies discuss the impact of LLE and SLI on later language outcomes, including outcomes in the areas of syntax, morphology, semantics, morphosyntax, and nonverbal communication. Syntax refers to the ways words are put together to form phrases and sentences and morphology is the study of words. Morphosyntax is a combination of syntax and morphology, commonly referred to as grammar. Semantics refers to the meaning of language. Nonverbal communication is the communication of messages through nonverbal forms, such as facial expressions, gestures, eye contact, body language, and other social cues (Paul et al., 2018).

The Profile of Late Talker

"Late talkers are children 18–35 months old who acquire language at a slower rate than their typically developing peers" (Hawa & Spanoudis, 2014, p. 401). Children who are late talkers may have average receptive communication skills. While the expressive language skills of some children who were late talkers catch up to that of their peers with typical language acquisition, this is not true for all late talking (LT) children. Additionally, while children who were late talkers often score within the average range on standardized language measures once they are school age, many still have significantly weaker language skills than their peers whose language skills developed at a typical rate. With an estimate of approximately 15% of children showing early signs of an expressive language delay at age 2, examining the language outcomes of late talkers and providing EI to those in need is critical (Hawa & Spanoudis, 2014).

Parent report is often used to identify children who are late talkers. Many studies have used a score of at least two SD below the mean to establish an early language delay, while others use a parent’s report of the child’s use of less than 50 words at age 2 (Hawa & Spanoudis, 2014). One study used performance below the 15th percentile on the Language Development Survey (LDS) to determine that an 18-23 month-old child is a late talker. This converts to an expressive vocabulary of 20 or fewer words. On the MacArthur-Bates Communicative Development Inventory (CDI), a 2-year-old child is said to be a late talker if the size of their expressive vocabulary is at the 10th percentile or lower. The differences in identification procedures and diagnostic criteria used make the overall data somewhat unclear (Hawa & Spanoudis, 2014).

The lexical acquisition of late talker has been studied much less than it has been studied for TD children. Children with typical language acquisition produce their first word between 10 and 13 months of age. After this, their expressive vocabulary grows by approximately 10 words per month up to 18 months of age. Between 17 and 20 months of age, children’s vocabulary begins to expand rapidly, with new words being acquired almost every day, and TD children reach a vocabulary of 50 words during this time (Hawa & Spanoudis, 2014).

Research suggests children who have a vocabulary of less than 50 words at 24 months fall below the average range. One study found, on average, when compared to those with typical language acquisition, the lexical acquisition of late talkers is delayed by approximately 12 months. This study found the mean vocabulary size of late talkers at 24 months was 18 words, at 30 months mean vocabulary size was 89 words, and at 36 months it was 195 words. At 24 months, the late talker's average of an 18 word vocabulary is significantly lower than the average vocabulary size of 150-180 words for children of the same age with typical language acquisition. Studies have found the vocabulary of some late talkers grows to 150-180 words by 30 months of age, but more children who were LT have a vocabulary of less than 30 words at this age (Hawa & Spanoudis, 2014).

School-Age Language Outcomes for Late Talking Children

One study compared the language skills of 7-year-old children with a history of LLE at 24 months with those with normal language emergence (NLE) at that age. Another goal was to determine if there was variation in language outcomes based on the child's gender. The participants were randomly selected from the group that met inclusion criteria from a larger sample from the longitudinal Randomly Ascertained Sample of Children born in Australia's Largest State (RASCALS) study. For this study, inclusion criteria included living in an English-speaking home and the absence of any exclusionary conditions for SLI including deafness, autism spectrum disorder (ASD), Down syndrome, or an intellectual disability. The final participants of this study were 128 children with a history of LLE and 109 children with a history of NLE at 24 months old (Rice et al., 2008).

The 2-year-old children were initially determined to have LLE based on two criteria. The first criterion, the Expressive Language (ELANG) criterion, was based on the size of the child's vocabulary and their ability to combine words together in communication. Children met this criterion for LLE if their vocabulary was less than 70 words on the LDS or if they did not use any word combinations based on the Communication Scale of the Ages and Stages Questionnaire (ASQ). The second criterion, the ASQ criterion, was based on the six-item

Communication Scale of the ASQ, which included questions about children's ability to point to pictures named, use 2-3 word phrases, follow simple directions, name objects, point to named body parts, and use personal pronouns. Children who scored at least one SD below the mean met this criterion for LLE (Rice et al., 2008).

Over the course of three sessions, on average, these children were also assessed at age 7. Tools were selected that measured overall language ability as well as syntactic, semantic, morphosyntactic, and nonverbal communication skills. Additionally, a hearing screening was completed for all children and all children had average hearing levels. The speech tools used were the Goldman Fristoe Test of Articulation—Second Edition (GFTA–2) and the Phonological Probe from the Rice Wexler Test of Early Grammatical Impairment (TEGI). The Test of Language Development - Primary, Third Edition (TOLD–P:3), the TEGI, and the Peabody Picture Vocabulary Test—III (PPVT–III) were used to measure children's language abilities. The Systematic Analysis of Language Transcripts (SALT) program, which was used during free play, was used to determine the mean length of utterance (MLU) in morphemes (MLU-M). Finally, the Columbia Mental Maturity Scale (CMMS) was used to measure children's nonverbal intelligence (Rice et al., 2008).

The LLE and NLE groups each had a mean age of 7 years, 3 months. Both groups were similar in levels of maternal education, mental health, hours spent working, and income. They had similar socioeconomic status (SES) resources, family types, and parenting styles. The groups differed in gender composition as there were significantly more males than females in the LLE group and the NLE group was approximately half male and half female. This is consistent with the results of other studies. Children in the NLE group were also more likely to be only children than those who were in the LLE group (Rice et al., 2008).

While males were much more likely to demonstrate language delays than females at 24 months, this gender difference was no longer seen at age 7 as males and females were equally likely to demonstrate language delays at this age. Based on both the ELANG and ASQ criteria, the mean MLU-M of the LLE group (5.15 - 5.19) was slightly lower, but relatively close, to that of the NLE group (5.21 - 5.22). Children with a history of LLE scored below the cutoff score, 1 or more SD below the mean, much more frequently than children with NLE did. At age 7, children with a history of LLE made up 82% of those below the cutoff on the GFTA-2, 68% of those below the cutoff on the TOLD–P:3 Spoken Quotient, and 72% of those below the cutoff on the TOLD–P:3 Syntactic Quotient. Still, the percentage of all children who scored below the cutoff on the GFTA-2 was relatively small with 7% of the LLE group and 2% of the NLE group scoring in the low range. This suggests while children with a history of LLE are still more likely to demonstrate language delays at age 7 than are children with NLE, speech development is generally strong by age 7. It was also found that most of the children who had low language skills at age 7 had average non-verbal intelligence skills (Rice et al., 2008).

Overall, children with a history of LLE scored lower on the speech and language tools than children with a history of NLE. The areas of syntactic and morphosyntactic development were more likely to be impacted by a positive history of LLE, than the area of semantic development. At age 7, children with a positive history of LLE were approximately 3 times more likely to have immature speech as children with a history of NLE. This study found that a majority of children with LLE were able to compensate for their early language delay and narrow the gap between themselves and children with NLE. Still, some children are not able to compensate for this delay in language acquisition and continue to show language delays at age 7. Additionally, while children with a history of LLE often demonstrate average language skills by school age, the results suggest some dimensions of language are more impacted than others (Rice et al., 2008).

Use of Gestures in Late Talking versus Typically Developing Children

The use of gestures is one form of nonverbal communication. There are two main categories of gestures, which are based on their specific purpose. These categories are deictic gestures and symbolic gestures. Pointing is the gesture most associated with the deictic category. Examples of symbolic gestures included waving “goodbye” and nodding the head, which directly represent a specific action or object (Cochet & Vauclair, 2014). The use of gestures and the development of language are closely related. In TD children, deictic gestures begin to emerge at around 10 months, when children begin to comprehend language, and symbolic gestures typically emerge around 12 months of age, when children are beginning to use words (Hawa & Spanoudis, 2014). TD children often “show evidence of word comprehension when they start to use deictic gestures and gestural routines” at around 8 to 10 months of age (Hawa & Spanoudis, 2014, p. 402). LT children typically use communicative gestures in a similar way as TD children do. Some studies even suggest LT children use more gestures than TD children do. This is likely due to the fact that they are unable to use expressive language skills to communicate and therefore rely on the use of communicative gestures (Hawa & Spanoudis, 2014).

Social-Emotional Implications of a Language Delay

Since communication is a social behavior, it is valuable to examine the possible impact of communication delays on a child's SE development. Studies have shown children with expressive language delays are at a greater risk for both externalizing and internalizing challenges. These children are more likely to show signs of depression, act more serious, and show less interest, and are less likely to ask for help than their TD peers are. They are also more likely to have behavioral problems (Hawa & Spanoudis, 2014). However, Whitehouse et al. (2011) state that an "expressive vocabulary delay at age two years is not in itself a risk factor for later behavioral and emotional disturbances in childhood and adolescence (Whitehouse et al., 2011, p. 328). Instead, they suggest while LT children exhibit higher levels of both internalizing and externalizing problems when they are 2 years old, this does not remain true in later childhood, adolescence, or adulthood. It is believed the social-emotional behavior of children who were LT typically improves as their language skills improve (Whitehouse et al., 2011).

Late talking can also have negative impacts on children's socialization, behavioral regulation, and school-readiness skills. Adults who have a history of a language delay have reported feeling misunderstood and self-conscious as children. They shared they did not feel they were able to properly advocate for themselves. These childhood experiences continued to impact their verbal interactions as adults, including interactions with other adults and with their children. The impact of a language delay can be lifelong (Singleton, 2018).

Genetic and Environmental Factors of a Language Delay

Hawa and Spanoudis (2014) also examined the "intrinsic and extrinsic factors that appear to contribute to the delayed onset and progression of children's expressive language" (p. 401).

The role of genetics in late talking is an area of significant current discussion. Evidence suggests children with a family history of language impairments are more likely to have language delays themselves, with some studies suggesting these children are twice as likely to be late talkers as children who do not have a family history of language impairment. Furthermore, genetic research has found lasting language impairments are more likely to be genetic in origin (Hawa & Spanoudis, 2014).

The role a child's environment plays in their language development has been examined through the observation and analysis of the interactions and communication between parents and their children. Several key differences have been identified between the language behaviors of parents of TD toddlers and of parents of children with language delays. These differences are generally only seen in the quality of the interactions, as the quantity of interactions is similar in both groups. Parents of children who have a language delay are more likely to initiate a conversation than they are to respond to what their child says. It is believed that this habit may be the parent's attempt to get their child to talk more (Hawa & Spanoudis, 2014). Studies have also found that the "parents of late talkers do not provide an environment that is conducive to child engagement and the establishment of routines that serve as a context for communicative acts" (Hawa & Spanoudis, 2014, p. 403). Parents of late talkers are less likely to verbalize their thoughts as they interact with their child than parents of TD children are. Overall, the results suggest that parents of children with language delays often change their communication to match their child's communication skills, creating an ineffective cycle of feedback between parent and child. This creates a less than ideal environment for the child's language acquisition and can even worsen their language difficulties (Hawa & Spanoudis, 2014).

Both genetic and environmental factors influence the language development of children. One environmental factor that appears to play a significant role in children's language development is the type of interactions used by their parents. Due to the large influence that parent interaction has on language development, the use of parent training programs to help parents learn how to effectively encourage their child's communication skills can be valuable. Data suggest that by helping parents expand their use of effective communicative behaviors, parent training programs can have a positive impact on their child's communication outcomes. Effective communicative behaviors taught as a part of parent training programs often include using self-talk, turn-taking, and following a child's lead and expanding upon what they say. Another technique that may be taught is the Observe, Wait, Listen (OWL) strategy. This strategy assumes that when children can lead conversations about topics they are interested in, they are better able to learn language (Hawa & Spanoudis, 2014).

When considering risk factors for long term language delay for LT children, a combination of genetic, environmental, and social factors should be considered as these are all documented to have an impact on a child's language outcomes. The weight of the impact each of these factors have on a particular child depends on their individual profile. It can, however, be generally assumed that when more risk factors are present, there is an increased risk of long-term language delays. Therefore, EI for the LT children with multiple risk factors is critical (Hawa & Spanoudis, 2014).

The Impact of Language Delay on Parental Stress

Some studies have found a correlation between increased parental stress and their child's expressive language delay. Levels of parental stress for parents of LT children were found to be

2 to 3 times higher than the parental stress levels of the parents of children with average language skills (Hawa & Spanoudis, 2014). Parents of a child with a developmental delay or disability experience “added stressors, such as the fear and acceptance of disability and influx of services coming into the home” which “further compound the task of parenthood” (Casses & Paquette, 2016, p. 124). Many parents of LT children state that their relationship with their child is very stressful. When parental stress is high, parents are less likely to be available to support their child. Because of this, children of parents with high levels of parental stress are more likely to have expressive language delays. This can become a continuous, negative, and self-defeating cycle (Hawa & Spanoudis, 2014).

The Relationship Between Socio-Economic Status and Language Delay

Studies have shown that children with lower-SES levels and lower levels of parental education are more likely to have expressive language delays (Hawa & Spanoudis, 2014). This does not necessarily mean that the low-SES level of the family directly impacts their child’s language development, but rather this information suggests that the “mechanisms and conditions that define this level affect the process of language development to an extent” (Hawa & Spanoudis, 2014, p. 404). Mothers with higher levels of education are more likely to speak in longer phrases or sentences and use a more rich vocabulary than mothers with lower levels of education. Therefore, the vocabulary size of children with a higher SES status is developed more than that of children with a lower SES status. This information indicates that maternal education, family SES status, parenting styles, and parental mental health needs influence the chance of a child being a late talker. Another factor associated with early language delay is birth order, as children with siblings are more likely to be late talkers than are only children. This is likely partially due to the fact that parents have more opportunities to communicate with their firstborn child when they are an only child than they have to communicate with each child when they have multiple children (Hawa & Spanoudis, 2014).

Predicting Long-Term Developmental Outcomes

While there is plenty of research on the impact of late talking on later language outcomes, it is still difficult to determine or describe the characteristics of the late talkers who are more likely to have ongoing language delays. Some studies have found that the receptive language skills of a late talker are predictive of their future expressive language abilities (Hawa & Spanoudis, 2014). There is much evidence available which suggests that between 70-80% of children with an isolated expressive language delay make progress and demonstrate age-appropriate skills at age 4 or 5 (Whitehouse et al., 2011). Some children who were late talkers have vocabulary sizes in the average range by age 3 and their language skills continue to develop and show great improvement by school age. Still some LT children continue to demonstrate language delays at school age and even into adulthood. These individuals are often identified as having a SLI (Hawa & Spanoudis, 2014).

Data suggest that, while they still score within the average range, teenagers who were identified as late talkers as toddlers demonstrate significantly lower skills in the areas of grammar, vocabulary, and verbal memory than children with a history of typical language acquisition (Rescorla, 2009). Children who were late talkers are also more likely to demonstrate weaknesses in reading and spelling at school age (Hawa & Spanoudis, 2014). Some studies have even found that LT children have lower levels of activation in some areas of the brain when listening to or reading words. This suggests the “residual effects of being a late talker are found not only in behavioural tests of oral and written language, but also in distributed cortical-subcortical neural circuits underlying speech and print processing" (Preston et al., 2010, p. 2185).

Language impairments in young children can appear independently or in combination with another developmental diagnosis, such as hearing loss, ASD, or an intellectual impairment. When language impairments present independently, it is considered to be SLI. Not including children with other developmental diagnoses, some studies have found that approximately 7% of children have SLI at age 5, when they first enter school. These children have language skills that are at least one SD below the mean for their age and are generally at or below the 15th percentile for their age. Children with SLI are also at an increased risk of reading impairments, lower academic achievement, and delays in SE development during their school years, which suggest that the child's language abilities are not the only area impacted by SLI (Rice, 2012).

A longitudinal study examining the acquisition of speech and language skills in children between 2 and 20 years of age was conducted. The inclusionary/exclusionary criteria for the SLI participants included that they all had hearing levels in normal range, no known developmental disorders, and non-verbal intelligence skills within the average range (standard score of 85 and above). The children in the SLI group had language skills that were at least one SD below the mean (standard score of 85 or below). The control group also met the same inclusionary/exclusionary criteria as the SLI group, but their language standard scores fell between 86 and 120. This study used assessments which measure overall language, grammar, and semantics. For children younger than age 9, the assessments were administered every 6 months. For children age 9 or older, they were administered annually (Rice, 2012).

The Peabody Picture Vocabulary Test (PPVT) was used to measure language emergence and vocabulary in children younger than age 8. These results indicated, at the onset of the study, children in the control group demonstrated an advantage of approximately 2 years when compared to the SLI children and they maintained this advantage throughout the study. The study found once vocabulary comprehension begins developing in the SLI children, their growth trajectory is similar to that of the control group. However, they are generally not able to close the gap between themselves and the children in the control group as the skills of the control group develop at a similar rate and continue to maintain the 2 year advantage seen at onset. The study also found a similar advantage of approximately 2 years for the control group in MLU at onset as children in the control group have an MLU of 3.5 at age 3, but the SLI group do not reach that MLU until they are approximately 5 years old. While the control group demonstrates an advantage over the SLI group early on, the SLI group is eventually able to close the gap in MLU over the course of several years (Rice, 2012).

This study found that children with SLI demonstrate greater difficulties with the grammatical property of finiteness markers. Examples of finiteness markers in declaratives are underlined in the following sentences: The man is sad. The girl is playing. The woman walked away. Examples of finiteness in markers in questions are underlined in these questions: Is he sad? Where is he going? Does he need help? It was found that the children in the SLI group demonstrate significant and lasting delays in this area. While the age of onset differs between the control and SLI groups, the growth trajectory is similar (Rice, 2012). This suggests that “the children with SLI are prepared to employ the same growth mechanisms as the control children once the system starts” (Rice, 2012, p. 6). The study found that minimal growth occurs between the ages of 8 and 16 for children with SLI in judgments of finiteness markers in questions as they appear to plateau at around the 0.75 accuracy level. This is significantly lower than the adult-like abilities of the children in the control group who are at around the 0.90 accuracy level for judgment of finiteness markers in questions (Rice, 2012).

These results suggest that if children with SLI do not close the gap between themselves and their TD peers by middle childhood, they have a significant risk of having grammar delays that last into adolescence and adulthood. Overall, as found in the previously discussed studies, while children with SLI may catch up to their TD peers in some areas, they may not be able to close the gap in all areas of language. Children with SLI appear to develop language skills in similar ways as children with typical language development once this development begins. However, the late onset of these skills in children with SLI is the start to the gap, which is often lasting, between their skills and that of their TD peers (Rice, 2012).

The Role of Verbal Processing

Another study aimed to identify the impact children's individual differences in verbal processing has on their future vocabulary growth for both LT and TD children. Children were classified as LT if they scored below the 20th percentile at 18 months of age. They were classified as TD if they scored above the 20th percentile at this age (Fernald & Marchman, 2012). It was found that the accuracy and speed of language understanding at age two predicts not only the rate of vocabulary growth over the next year of life, but also the cognitive and language outcomes of children at 8 years of age. Adults with higher language proficiency scores show different brain response patterns involved in lexical access and syntactic processing than adults with lower language proficiency scores. One could interpret this to mean that individuals have fixed cognitive capacities that impact their performance on language processing tasks. Another belief, which is supported by growing amounts of evidence, is that rather than individuals having fixed capacity limits, the differences in comprehension skills are influenced by experience-based factors (Fernald & Marchman, 2012).

Maternal education, birth order, prematurity, gender, and family history of language delays have all been identified as factors that may influence the language development of young children. Still, these factors only account for some of the variation amongst the language outcomes of children. Another factor that may have a significant impact on the language outcomes of children is their early language environment. A child's early language environment is likely influenced by a variety of familial factors including parental literacy levels, mental health, parenting practice, and knowledge of child development. Some studies of LT children have excluded children who also have receptive language delays. Other studies have shown, however, that LT children who also have receptive language delays are more likely to have poorer language outcomes than the LT children with average receptive language abilities (Fernald & Marchman, 2012).

Fernald & Marchman (2012) conducted a study of 46 TD and 36 LT children. The group was approximately half male and half female. Through birth records, families who had infants between 15 and 17 months of age were identified. Firstborn children made up approximately 60% of the group. Most of the children's parents were upper to middle class and college educated. Thirteen of the children had a family history of SLI (Fernald & Marchman, 2012).

To measure children's vocabulary, the participants' parents completed MacArthur-Bates CDI: Words and Sentences when their child was 18 months old and again when they were 21, 24, and 30 months old. To measure the children's language understanding, this study also used the looking-while-listening (LWL) procedure to assess the children's recognition of spoken words. Using the LWL procedure, the children were shown two pictures of familiar objects as they heard speech which named one of the pictures. The goal was to determine both the accuracy and reaction time (RT) of the child's gaze (Fernald & Marchman, 2012).

Based on the results of the MB-CDI completed by the parents, approximately 60% of the children who were determined to be LT at 18 months scored within the average range for vocabulary at 30 months. Still, as seen in previous studies, this was not the case for all of the LT children as 39% of children that were in the LT group at 18 months remained in this group at 30 months. Over 91% of children who were in the TD group at 18 months remained in this group at 30 months. Overall, the LT children scored significantly lower on the MB-CDI measure of vocabulary than the TD children at 18 months as well as all future time points (21, 24, and 30 months). On average, children in the LT group were less accurate and significantly slower to respond to the LWL measure of language understanding than the children in the TD group (Fernald & Marchman, 2012).

Growth curve analysis (GCA) was also used in order to take advantage of the longitudinal nature of this study's data and explore the growth trajectories of vocabulary within individuals in both the LT and TD group. GCA revealed that, on average, the vocabulary growth trajectories of LT children were lower than the trajectories of the TD children, with delays lasting through 30 months of age or later. Still, many of these children demonstrated rapid vocabulary gains between 18 and 30 months, as many, but not all, of the LT children had a vocabulary within the average range at the end of this period. Overall, the GCA found that the children with more efficient language processing skills at 18 months, regardless of their language level at that time, demonstrated more rapid vocabulary growth over the following year than the children with less efficient language processing skills at 18 months (Fernald & Marchman, 2012).

Authors pointed out that LWL performance was a greater predictor of later language outcomes than vocabulary size alone. This suggests that knowledge of a child's speech processing skills at 18 months can help differentiate between the children who will continue to show delays and the children who will move into the average range of development. It is important to note that the LWL measure may draw on other cognitive abilities than speech processing alone, including selective attention, blending of visual and auditory information, and picture-word association. Therefore, the predictive value of LWL tasks, which appear to assess language processing skills at 18 months, may be influenced by other cognitive abilities and not language abilities alone. Still, these underlying cognitive abilities which influence children's success on LWL tasks are relevant to children's real-word language processing. Therefore, the cognitive processing skills necessary to complete LWL tasks are essential to children's comprehension of daily interactions (Fernald & Marchman, 2012).

Early advantages in vocabulary and processing speed can have long-term benefits. Vocabulary size and processing speed are two of the greatest predictors of an adult's intelligence quotient (IQ). Studies have found that adults who have faster reaction times are able to free additional cognitive resources. This is a possible explanation for how the language processing skills of young children facilitate later development (Fernald & Marchman, 2012). "These factors may operate synergistically: If faster lexical access enables more efficient learning of new lexical forms, this could lead to further gains in processing efficiency as well as improvements in working memory, with long-term benefits for language and cognition” (Fernald & Marchman, 2012, p. 218).

Patterns of Parental Speech and Associated Language Outcomes

As stated above, the SES of a family can be a strong predictor of many developmental outcomes for children. Children from higher SES families generally grow their vocabulary faster than children from low SES families (Hoff, 2003). Children’s developmental outcomes are influenced by their family’s resources. Children are more likely to have favorable developmental outcomes when they are given appropriate environmental support. Family resources are impacted by their SES level. This suggests children in low SES families, who have fewer resources, are less likely to reach their full potential than children in high SES families, who have more resources (Fernald & Marchman, 2012).

Hoff (2003) found that the quantity and quality of maternal speech was a greater predictor of children’s vocabulary outcomes than SES level. “The opportunity for engagement with rich and varied language from an attentive caretaker provides the infant with models for language learning and also with valuable practice in interpreting language in real time” (Fernald & Marchman, 2012, p. 219). Hurtado et al. (2008) found significant variation in the diversity and amount of child directed speech used by individual families within the primarily low SES group. They found that infants whose mothers talked to them more at 18 months had a greater vocabulary and faster lexical access at 24 months than children whose mothers talked to them less at 18 months (Hurtado et al., 2008).

The Wait-and-See Approach

Parents who have concerns about their child's language development, are often given the suggestion to "wait and see" by family, friends, doctors, or the internet (Lowry, 2016). The wait-and-see approach can encourage an unnecessary delay in accessing the EI services that can have a significant impact on a child's development (Hanen Early Language Program, 2015). The wait-and-see approach is based on the understanding that all children develop at their own pace and misconceptions about typical early language development (Lowry, 2016). While it is true, to a certain extent, that children develop at their own pace, there are still predictable ways in which children typically develop skills (HMG, n.d.a). Some children who do not reach these predictable milestones of typical development later catch up on their own, but some do not. Since it can be difficult to predict which children will catch up and which will not, it is recommended that parents pursue screening or evaluation to determine if their child is in need of EI services instead of adopting the wait-and-see approach. More importantly, even though children who were late talkers may later perform in the average range, their skills are likely to be lower than that of their TD peers, as stated in the previous studies (Lowry, 2016).

Singleton (2018) states that the wait-and-see approach is outdated. She shares that the origins of this approach include fears of anxiety with testing, extra time commitments, and increased effort which may come with identifying a delay in a child's development (Singleton, 2018). However, "caregiver stress can already be ongoing from anxiety that their child is not talking when expected . . . The parent–child relationship is negatively affected by late talking. Mothers report stress associated with late talking" (Singleton, 2018, p. 17). Another belief that encourages the wait-and-see approach is the belief that late talking is a self-correcting delay.

There are several problems with this belief. Two of these problems are the facts that, even when they make progress and perform within the average range, LT children often have weaker skills than their TD peers and late talking is a risk factor for SLI (Singleton, 2018).

Maximizing the Developmental Outcomes of Late Talkers by Intervening Early

EI services can help improve long-term language outcomes and, in turn, can positively impact other areas of development which rely on language. LT children who are eligible for EI services have a greater opportunity to develop their skills than LT children who do not receive EI services. Children who are late talkers are often less socially competent and more withdrawn than their TD peers. These children are therefore more dependent on their parents for responding to and initiating conversations. Parent-implemented interventions, which are a primary strategy used in EI, revolve around social interaction. This type of intervention has been shown to have one of the greatest impacts on expressive vocabulary growth. By coaching parents to implement language interventions during their everyday interactions with their child, the carry-over of evidence-based practices is maximized (Singleton, 2018). “Enriched social interactions with supportive caregivers are epigenetic mechanisms that can be lifelong and have cross-generational effects” (Singleton, 2018, p. 23).

The Centers for Disease Control and Prevention (CDC) encourages families to pursue an EI screening or evaluation if they have concerns for their child’s development. They state that parents know their children best and should not wait if they are concerned. Intervention has a greater benefit when provided early in a child’s life (CDC, 2021). In order to minimize the impact of language deficits on a child’s later development, it is important to provide them “with language-focused interventions as early as possible” (Rakap & Rakap, 2014, p. 36).

Resources and Supports for Children Ineligible for EI

Children who have a measurable developmental delay in one or more areas or who have a diagnosed mental or physical condition with a high probability of resulting in a developmental delay are eligible to receive EI services (Johnson-Motoyama et al., 2016). In some states, risk factors can be used to determine eligibility for EI services, but this option is not utilized by most states (Barth et al., 2008). In cases where a child is not eligible for EI, it is valuable to connect their family with the resources or community services necessary to help meet their child’s developmental needs (Smith et al., 2020). The following options may be valuable for these families.

Parent and Family Education Programs

Parent and family education programs are designed to help families understand child development and recognize the significant role they play in their child’s life and development. These programs encourage families to be actively involved in their child’s life and learning. Families also learn to use reasonable expectations, positive parent behaviors, and developmentally appropriate strategies to encourage their child’s development (Minnesota Association for Family and Early Education [MNAFEE], 2011). These programs can also help families grow their support network by building connections with other families (HMG, n.d.d).

Through parent and family education programs, families can learn strategies, which promote positive interactions, develop a secure parent-child attachment, and create a safe, supportive, responsive, respectful, and nurturing environment for their children. Families also learn strategies for encouraging their child’s ability to move around, explore, communicate, problem solve, express and regulate their emotions, and gain independence. Finally, these programs can help families develop a healthy work/life balance and find resources, including local/community and online resources (MNAFEE, 2011). Early Childhood Family Education (ECFE) programs are offered through school districts in Minnesota (HMG, n.d.d). Parent and family education programs can be a valuable resource for the families of children who are not eligible to receive EI services, as well as an additional support for families who are also receiving EI services (Smith et al., 2020).

Early Head Start

Early Head Start is a program that is available to support eligible children and families. Families may be eligible for Early Head Start if they meet one or more of the following criteria: eligible for public assistance, experiencing homelessness, income is below the federal poverty guideline, or their child is in foster care. These services are often provided through home visits but may be offered in an early learning center. Early Head Start staff can help connect families with local early education opportunities and other community services and provide ideas, which support family well-being and the development of the child. Family involvement is a key component of this program (MDE, n.d.b.).

Outpatient Therapy

Infants or toddlers, who do not meet a state’s eligibility requirements and therefore are not eligible to receive EI services, may still benefit from services which support their development. It is possible that these children may still demonstrate skills that are below average for their age or a unique need, such as an asymmetric range of motion. In these cases, outpatient therapy services may be beneficial. Children who are not eligible for EI may be referred, often by their parent or primary care provider, to a local outpatient therapy clinic for examination or evaluation. A variety of outpatient therapies may be available including physical, occupational, speech, and feeding therapy. The criteria for outpatient therapy may be different than the state's EI criteria and children who are not eligible for EI may, therefore, still be eligible for outpatient services (Academy of Pediatric Physical Therapy, 2018).

Chapter 3: Summary/Conclusions

Intervention has a greater benefit when provided early in a child's life due to the adaptability of young children's brains (CDC, 2021). EI services can encourage the development of infants and toddlers, minimize their risks of developmental delay, and equip families with the strategies needed to help their children (Dragoo, 2019). While it is estimated that one in six children have a developmental delay in at least one area, only a fraction of these children receive services to support their developmental needs (Vitrikas et al., 2017). In order to provide EI services to the children who need them most, we must identify the unique characteristics and needs of the children who are at an increased risk of having developmental delays. This review of literature focused on the characteristics, risk factors, and unique needs of two groups of children who are at an increased risk of developmental delays, children who are victims of abuse or neglect and children who are late talkers.

Child Maltreatment and Developmental Delay

Children who are victims of abuse or neglect are at an increased risk for developmental delays and behavioral problems (Allen et al, 2012). For this reason, child welfare professionals are required by Federal legislation to refer children who are potentially eligible to EI programs (Child Welfare Information Gateway & Children's Bureau, 2018). While the presence of an IFSP is higher for children who were involved in a CWS investigation than for the general population, it still does not match the high level of need seen in this group of children (Casanueva et al., 2008). While an EI referral is only mandated when there is a substantiated case of abuse or neglect, research has found children involved in unsubstantiated cases have also demonstrated needs that are equal to, and sometimes greater than, children involved in substantiated cases. The developmental delays of many children involved in unsubstantiated cases are likely being missed (Casanueva et al., 2008).

States are required to provide EI services to children who have a measurable developmental delay in one or more areas or who have a diagnosed mental or physical condition with a high probability of resulting in a developmental delay. States also have the ability to determine eligibility and provide EI services based on the presence of risk factors, which put children at risk for developmental delays (Johnson-Motoyama et al., 2016). Very few states utilize this option. For this reason, the eligibility criteria of many states may fail to meet the unique needs of children with environmental risk factors, including children who are victims of abuse and neglect (Allen et al., 2012).

Without intervention, these children are more likely to experience lasting emotional, behavioral, and academic delays (Romano et al., 2015). EI providers have the opportunity to help families learn improved parenting skills that are responsive and effective. They can help build a family's capacity to meet their child's emotional, physical, and academic needs through evidence-based and developmentally appropriate strategies (Barth, 2009).

Developmental Delays in Late Talking Children

Children who are late talkers are also at an increased risk for developmental delay and therefore more likely to need EI services. While some late talking children are later able to close the gap between themselves and their peers with a history of typical language acquisition, others are not able to compensate for their delay in language acquisition and continue to show language delays at school age and even into adolescence or adulthood (Rice et al., 2008). Children with specific language impairments (SLI) appear to develop language skills in similar ways as children with typical language development once this development begins. However, the late onset of these skills is the start of the gap, which is often lasting, between their skills and that of their TD peers (Rice, 2012). The impact of a language delay can be lifelong (Singleton, 2018).

Late language emergence (LLE) seems to have a greater impact on certain components of language (Rice et al., 2008). Late talking can also have negative impacts on children's socialization, behavioral regulation, and school-readiness skills (Singleton, 2018). Children with language impairments are at an increased risk of reading impairments, weaknesses in spelling, lower academic achievement, and delays in SE development during their school years, which suggests that the child's language abilities are not the only area impacted by SLI (Rice, 2012).

Both genetic and environmental factors influence the language development of children. Parental education, family SES status, parenting styles, parental mental health needs, birth order, and family history of language delay all influence the chance of a child being a late talker. Research has found parents of children with language delays often change their communication to match their child's communication skills, creating an ineffective cycle of feedback between parent and child. This creates a less than ideal environment for the child's language acquisition and can even worsen their language difficulties (Hawa & Spanoudis, 2014).

Since it can be difficult to predict which children will catch up and which will not, it is recommended that parents pursue screening or evaluation to determine if their child is in need of EI services instead of adopting a wait-and-see approach (Lowry, 2016). EI services can help improve long-term language outcomes and, in turn, can positively impact other areas of development that rely on language. Parent interaction has a significant influence on language development. EI providers can use coaching to help parents learn how to effectively encourage their child's communication skills (Hawa & Spanoudis, 2014).

Implications for Practice

As a Part C ECSE/EI teacher, I have multiple roles and responsibilities. I complete developmental screenings and evaluations, determine Part C ECSE eligibility, and provide EI services to eligible infants and toddlers and their parents or other primary caregivers. I receive referrals from a variety of primary referral sources, including children's parents, medical providers, and child protection staff. I conducted this review of literature in order to gain a better understanding of the characteristics of the children who are at an increased risk for developmental delay. Another purpose of this review was to identify some of the barriers to successful partnerships with primary referral sources and identify strategies for overcoming these barriers in order to increase EI access for those who need it most.

Children who are victims of abuse or neglect are at an increased risk for developmental delays and behavioral problems, but research suggests that many of these children do not receive the services necessary to support their development. While the policies in place offer a promising option for supporting the developmental needs of young children, it appears that additional work is needed in order to meet the goals of the IDEA and CAPTA (Johnson-Motoyama et al., 2016). Barriers to collaboration between agencies include differences in procedures and goals, limited resources, timelines, and confidentiality concerns (Johnson-Motoyama et al., 2016). Differences in procedures, goals, and requirements are often an underlying factor for the misunderstandings or conflicts between child welfare and EI agencies. Common ground exists between these agencies and a focus on the shared values and goals of each agency could help workers to overcome their differences (Allen et al., 2012).

As a result of my research, I intend to connect with local child welfare agencies within the school district I work in. There is a need for more awareness, understanding, and appreciation of the unique purposes of both agencies. It is essential that the social workers and other child welfare staff who work with children and families are aware of the high occurrence of developmental delay in children who are victims of abuse or neglect, regardless of the substantiation status. It is also important that they can recognize the need for an EI referral and know how to make that referral. I believe that increased collaboration is necessary in order to meet the unique needs of this group of children and families.

Children who are late talkers are also at an increased risk for developmental delay, especially in the area of communication (Hawa & Spanoudis, 2014). Parents who have concerns about their child's language development, are often given the suggestion to "wait and see" by family, friends, doctors, or the internet (Lowry, 2016). The wait-and-see approach can encourage an unnecessary delay in providing the EI services that can have a significant impact on a child's development (Hanen Early Language Program, 2015). The CDC (2021) encourages families to pursue an EI screening or evaluation if they have concerns for their child's development. In order to minimize the impact of language deficits on a child's later development, it is important to provide interventions as soon as possible (Rakap & Rakap, 2014). EI services can help improve long-term language outcomes and, in turn, can positively impact other areas of development that rely on language (Hawa & Spanoudis, 2014).

As an ECSE/EI teacher, many families have told me that they had concerns about their child's language development long before an EI referral was made. Oftentimes, these concerns started when their child was between 15-20 months old. Families have shared that others, often including their child's medical provider, encouraged them to wait and see what happens over the following 6 to 12 months. When an EI referral is finally made, often when the child is between 24-30 months old, families express that they wish they would have connected with EI sooner instead of waiting. As a result of my research, I intend to connect with primary referral sources, including medical providers, within the school district that I work in. It is important that professionals who work with families understand typical development and see the risk of the wait-and-see approach. There is a clear need for an increased understanding of the value of providing interventions early when young children's brains are the most adaptable. I believe that this increased understanding is necessary to minimize the impact of a child's language delay on their later developmental outcomes.

Recommendations for the Future

The decision to use the presence of biomedical or environmental risk factors, which put children at risk for developmental delays, is at each state's discretion (IDEA, 2017). While this is a potential area of eligibility set in place by Part C of the IDEA, very few states utilize this option. The eligibility criteria of many states may, therefore, fail to meet the unique needs of children with environmental risk factors, including children who are victims of abuse and neglect (Allen et al., 2012). EI services have the potential to lower the risk of future abuse or neglect by enhancing the parent-child relationship and can also have a positive impact on later educational performance by addressing developmental delays early (Johnson-Motoyama et al., 2016). I believe that states should strongly consider including the presence of environmental risk factors as an option for eligibility determination, to minimize the impact these risk factors have on a child’s developmental outcomes.

A child’s social-emotional (SE) development can be significantly impacted when risk factors, including the history of abuse or neglect, are present. Research indicates there is significant variation in the ability of states to identify and meet the mental health and SE needs of young children. While a few of the recommended infant and toddler SE and mental health supports are used in MN, it appears that MN does not have many of the discussed policies or recommendations in place. Practices which support the SE development of young children include using specialized SE screening or evaluation tools to identify mental health needs and training staff to meet the SE needs of children and promote positive parent-child interactions (Smith et al., 2020). I believe that states should strongly consider recommending, even requiring, the use of these practices, especially for children who are victims of abuse or neglect, in order to meet the SE needs and maximize the developmental outcomes of children.

Finally, I believe that professionals who work with children and families should increase their awareness of typical development and the importance of the first years of a child’s life. They should exercise extreme caution in, and generally avoid, recommending a wait-and-see approach when developmental concerns are present. EI providers can help increase the awareness of other professionals by providing information about these concepts, as well as suggestions for discussing developmental concerns with families

Summary

“Without solid early learning children do not have the experiential or neural building blocks from which to evolve more complex understanding or knowledge of their physical and social world” (Johnson et al., 2015, p. 11). Intervention has a greater benefit when provided early in a child’s life due to the adaptability of young children’s brains (CDC, 2021). EI services can encourage the development of infants and toddlers, minimize their risks of developmental delay, and equip families with the strategies needed to help their children (Dragoo, 2019).

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Early Intervention:

Maximizing Developmental Outcomes Through Family-Centered Practices

by

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Chapter 1: Introduction

Children's brains are the most adaptable in their first 3 years of life. Over time, the neural circuits in a child's brain become more difficult to change. Therefore, when interventions are provided early in a child's life, they have a greater benefit (Centers for Disease Control and Prevention [CDC], 2021). Part C of the Individuals with Disabilities Education Act (IDEA) is based on the understanding of the need to encourage the development of infants and toddlers, minimize their risks of developmental delay, and equip families with the strategies needed to help their children with developmental delays or disabilities (Dragoo, 2019).

Early intervention (EI) services support the development of infants and toddlers who have, or are at a high-risk for, developmental delays. EI services vary based on the unique needs of each child and their family. The EI service providers who work with a child and their family may include an early childhood special education (ECSE) teacher, occupational therapist (OT), physical therapist (PT), speech language pathologist (SLP), or a variety of other service providers. Children's ability to learn new skills, overcome challenges, and succeed in school and life can be significantly impacted by EI services (CDC, 2019). EI services should be provided in a child's natural environment to the maximum extent possible. For infants and toddlers, this natural environment is typically their home or childcare (Dragoo, 2019). In highly-effective and evidence-based models of EI, the child's family plays a significant role in planning for and implementing EI services. Using these models, the child's outcomes, or goals, are developed based on the needs of the child and the wishes and priorities of their family (Help Me Grow [HMG], n.d.).

Historical and Traditional Methods of Early Intervention

Many traditional approaches to EI minimize the role caregivers play in their child's development. Using traditional approaches, the EI provider works directly with the child towards specific provider-chosen goals (Swanson et al., 2011). "In traditional services, the interventionist plans activities that provide a context in which the child can learn or practice targeted skills and works directly with the child to provide learning opportunities" (Campbell & Sawyer, 2007, pp. 287-288). Providers using these methods typically bring toys or other materials into families' homes and use these to target a child's IFSP outcomes during their EI session (Williams & Ostrosky, 2020). The caregiver is generally a passive observer of this type of intervention. Despite the fact that caregivers are given minimal direct support and little to no practice to do so, they are often expected to be able to implement the demonstrated strategies several times a day, with fidelity, with their child at home (Swanson et al. 2011).

Importance of the Topic

As a Part C, birth - age 2, ECSE/EI teacher, I have the opportunity to work with eligible infants and toddlers and their parents or other primary caregivers. My goal as an ECSE teacher is to respectfully ask questions, provide ideas, and model strategies that encourage families to play an active role in their child's learning. I strive to support families as they build their capacity to promote their child's development by implementing strategies into their daily routines. I want the families I work with to feel confident implementing and expanding upon strategies and feel empowered knowing they are their child's first and most important teacher.

As a result of this paper, I hope to gain a better understanding of highly-effective and evidence-based practices for EI services. I also hope to find clear recommendations of the most effective ways to put these strategies into practice. Finally, I hope to intentionally reflect upon my current practices as an EI provider and create a plan for continuous improvement.

Research Question

The following question guides this review of literature:

1. What evidence-based and highly effective practices can early intervention providers use to maximize the benefit of early intervention services for infants and toddlers and their families?

Definitions

Key terms are defined in this section.

Activity-based intervention (ABI) Interventions which are embedded into family-identified activities in order to increase opportunities for encouraging a child’s development within a child’s everyday activities (Johnson et al., 2015).

Autism spectrum disorder (ASD) A neurodevelopmental disability characterized by differences in socialization, communication, patterns of thought, or repetitive actions (Putt, 2021).

Early childhood (EC) Refers to the first years of a child’s life, oftentimes referring to infants, toddlers, and preschoolers (Minnesota Department of Education [MDE], n.d.).

Early childhood special education (ECSE) The supports and services which are provided to infants, toddlers, and preschoolers with disabilities and their families (MDE, n.d.a.).

Early intervention (EI) Another term for the services provided to infants and toddlers who have developmental delays and their families. EI services may include a variety of providers, such as speech, occupational, or physical therapy, and can have a significant impact on a child’s development (CDC, 2021).

Enhanced milieu teaching (EMT) A naturalistic model of language intervention guided by the knowledge of a child’s interests, intentional arrangement of the environment, and the reinforcement of and intentional response to a child’s attempts to communicate (Kaiser & Roberts, 2013).

Individualized Family Service Plan (IFSP) The service plan used in special education/EI for children from birth to age 2, which focuses both on the developmental needs of a child and the priorities and concerns of their family (PACER Center Inc., 2011).

Routines-based intervention (RBI) Interventions embedded into family-identified routines, which build upon the existing routines to increase opportunities for encouraging a child’s development (Brown & Woods, 2015).

The Individuals with Disabilities Education Act (IDEA) A law which makes a free and appropriate public education available and ensures special education and related services to eligible children in the United States (IDEA, n.d.).

Typically developing (TD) Refers to an individual who develops and maintains skills following the predictable or expected course in which most individuals acquire and refine behavior, knowledge, and skills (Wadhera & Kakkar, 2020).

Chapter 2: Review of Literature

It is essential that EI providers understand and use recommended EI practices. This review of literature focuses on two evidence-based and highly effective strategies, the use of coaching and the use of routines or activities-based interventions. The use of these strategies can maximize the benefit of interventions, both for children with developmental delays and their family.

The Role of a Parent/Caregiver

Parents play a significant role in their child’s development and are often acknowledged as being their child’s first teacher, due to the multifaceted nature of the interactions and relationship between parent and child (Roberts & Kaiser, 2011). Parents have the opportunity to build a caring and nurturing relationship with their child through meaningful interactions. This parent-child relationship serves as a foundation for supporting the child’s overall development. The strengthened foundation gives the child a greater chance of succeeding both in school and in life (Smith et al., 2020).

Maximizing Developmental Outcomes Through Caregiver Coaching

Coaching a child’s caregiver to support their child’s development is a highly-effective and evidence-based EI practice (Smith et al., 2020). “For most children eligible for Part C, occasional or inconsistent practice will not result in optimal progress” (Woods et al., 2011, p. 382). A caregiver's involvement in intervention is valuable, because they are consistently involved in their child’s everyday life. Daily interaction is key for encouraging a child’s development. Furthermore, by involving caregivers directly in the intervention, they are more likely to be able to help their child generalize the skills (Rakap & Rakap, 2014). Parent-implemented interventions have been shown to have one of the greatest impacts on children's development. By coaching parents to implement interventions during their everyday interactions with their child, the carryover of evidence-based practices is maximized (Singleton, 2018). "Enriched social interactions with supportive caregivers are epigenetic mechanisms that can be lifelong and have cross-generational effects" (Singleton, 2018, p. 23). One of the reasons caregiver-implemented interventions have such strong impacts on children's development is that parents have multiple opportunities to embed intervention strategies into their daily routines. This allows them to provide more repetition and opportunities for practice, which is key for children's learning (Windsor et al., 2019).

Coaching is an ongoing process in which EI providers model a desired behavior, allow opportunities for the learner (the caregiver) to practice the desired behavior, and offer evaluative feedback that helps scaffold the caregiver's learning (Branson, 2015). "Coaching . . . practices are situated within adult learning theories - recognizing that adults are self-directed, learn best when actively engaged in authentic contexts, and have opportunities for problem solving and reflection" (Brown & Woods, 2016, p. 116). Key elements of effective coaching include working towards caregiver identified goals, coaching and practicing in relevant contexts, and allowing time for both feedback and self-reflection (Branson, 2015). Family coaching "fosters the achievement of family-identified goals through a relationship between the family and a professional coach" (Duncan & Goddard, 2017, p. 7).

General and Specific Coaching Strategies

A variety of general and specific coaching strategies can be used to maximize a caregiver's understanding and their child's developmental outcomes. Sharing information, asking questions, and answering questions are examples of general coaching strategies. These general coaching strategies are used to enhance the relationship and support the caregiver's understanding of their role. Specific coaching strategies are used to engage the caregiver, build their confidence, and increase their ability to practice the intervention between EI sessions. Specific coaching strategies include direct teaching, demonstration with narration, guided practice, feedback, problem-solving, and reflection. Caregivers need to have enough opportunities to learn a strategy, just as the child needs many opportunities to learn a skill (Woods, 2020).

The Effects of Caregiver Teaching

Roberts et al. (2014) examined the impact of the Teach-Model-Coach-Review caregiver teaching instructional approach on caregivers' use of language support strategies and the impact that the use of these strategies had on their child's expressive language development (Roberts et al., 2014). The participants of this study were four children, ages 24-42 months, who had a language impairment and their caregivers. It is worth noting that children were excluded from this study if they had a primary diagnosis other than a language impairment (autism, Down syndrome, etc.), spoke a language other than English at home, or demonstrated signs of autism spectrum disorder. Each parent/child dyad had both a child interventionist and a caregiver educator. The session took place in a clinic room and used materials that were provided by the interventionists (Roberts et al., 2014).

During baseline, caregivers were asked to play with their child as they normally would and no coaching was provided during this stage. Next, caregivers were taught a language support strategy in an hour-long workshop (Roberts et al., 2014). "Following the workshop, caregivers practiced the language support strategy during two 40-minute intervention sessions each week at the clinic" (Roberts et al., 2014, p. 1855). These practice sessions started by the caregiver educator reviewing the strategy with the caregiver, role-playing the strategy, and discussing ways to use it. Then, the child interventionist modeled the strategy, while the caregiver educator and the caregiver watched through a one-way mirror and discussed the strategy being used as they watched. Next, the caregiver played with their child, while the caregiver educator provided both praise and constructive feedback. Finally, the caregiver educator reviewed the session and allowed the caregiver to reflect upon the session and ask questions (Roberts et al., 2014).

Home generalization observations were conducted before baseline, immediately after the last session, 3 months after the intervention, and 6 months after the intervention. All caregivers used the strategies more frequently after the intervention than they did during baseline, but generalization varied by caregiver and strategies were used much more frequently in play than during other routines (Roberts et al., 2014). "A functional relationship between caregiver use of strategies and child use of communication targets was observed for three of the four children" (Roberts et al., 2014, p. 1865). The fourth child showed minimal increases in use of communication targets both during and after the intervention. All children made gains in standardized communication measures, but this should be interpreted with caution as there was no control group (Roberts et al., 2014). The results of this study indicated that the Teach-Model-Coach-Review approach may be an effective way to teach caregivers to use strategies, but "teaching across routines and over time is necessary in order to achieve optimal outcomes" (Roberts et al., 2014, p. 1867). Additionally, teaching within the family's natural environment and using the materials they are most familiar with would be of greater value than teaching strategies within the clinical setting with unfamiliar materials (Roberts et al., 2014).

Developmental Delay and Parental Stress

Studies have found a correlation between increased parental stress and their child's developmental delay. Levels of parental stress are often higher for parents of children with developmental delays or disabilities. Higher levels of parental stress generally make the parent less available to support their child's developmental needs. Less parental support can lead to less optimal developmental outcomes for the child. The relationship between developmental delay, parental stress, and parental support of their child's development can become a continuous, negative, and self-defeating cycle (Hawa & Spanoudis, 2014).

Estes et al. (2014) studied the impact that parent-delivered interventions had on the sense of competence and parenting-related stress for parents of children with autism. "Parents of children with autism spectrum disorder (ASD) are consistently found to have elevated levels of parenting-related stress and psychological distress, even when compared with parents of children with non-ASD developmental disabilities" (Estes et al., 2014, p. 353). The participants of this study were 98 children with autism and their primary caregiver, who were enrolled and randomly split into two groups. The first group was encouraged to independently find intervention services in the community (Estes et al., 2014). The second group was taught strategies "such as gaining child attention, principles of behavior change, encouraging child vocalization and gesture use, and using strategies within the daily routines, activities, and familiar home interaction patterns" (Estes et al., 2014, p. 356). During the center-based sessions, the caregivers received step-by-step instructions on how to embed each theme into their daily routines. The therapist identified learning objectives, broke them down into teaching steps, and helped the parent identify the materials and activities that would be the most appropriate for using these strategies. The therapist then modeled the technique while the parent observed. Finally, the parents practiced the strategy while the therapist coached them. The session ended with conversations about how to embed the strategies into their routines at home (Estes et al., 2014).

This study found while the children in the community group received almost twice as many hours per week in services as the intervention group, parenting stress scores were much lower in the intervention group than in the community group (Estes et al., 2014). Caregivers in the intervention group “reported no increase in parenting stress, whereas caregivers who obtained community intervention experienced increased levels of parenting stress over the same time period” (Estes et al., 2014, p. 361). While this study was conducted in a clinical setting and the goals, routines, and materials were largely chosen by the interventionist, coaching families in their homes and working towards family-identified goals may help parents feel more competent and successful in their abilities to help their child learn (Estes et al., 2014).

Parent Coaching versus Parent Training

The terms *coaching* and *training* are sometimes used interchangeably. However, capacity-building models, like coaching, have clear differences from parent training models. Using parent training, interventionists share knowledge and demonstrate the use of strategies based on their plan for the session (Brown & Woods, 2016). “Parent training often entails the interventionist to provide information, model strategies while the parent watches, and provide specific instructions to the parents on what and how to use strategies within play activities” (Brown & Woods, 2015, p. 46). Coaching is a capacity building model that aims to increase the skills, abilities, and confidence of parents. Through this model, parents are involved in the decision making process, with the goal of embedding interventions into daily routines and activities. With the family-guided coaching approach, the parents are key decision makers in determining where, when, and how interventions are implemented with their child (Brown & Woods, 2015). “Parent-implemented interventions are triadic in that the interventionist, parent, and child have intersecting roles with reciprocal relationships” (Brown & Woods, 2016, p. 115). The family-guided teaching approach is built upon the understanding of this triadic relationship (Brown & Woods, 2015).

Family Coaching Through the KidTalk–TaCTICS Project (KTTP)

Enhanced Milieu Teaching (EMT) “is a naturalistic model of early language intervention in which child interest and initiations are used as opportunities to model and prompt language use in everyday contexts” (Kaiser & Roberts, 2013, p. 296). Key principles of EMT intervention programs include maximizing the chance of the child’s communication through intentional arrangement of their environment, choosing language targets that match the child’s skill level, using prompts to expand language in response to the child’s interactions, and reinforcing the child’s attempts to communicate (Kaiser & Roberts, 2013). Family-Guided Routines-Based Intervention (FGRBI) focuses on using strategies, which support a child's functional communication skills, within family-identified routines and activities. FGRBI builds upon the family’s existing routines to give the child increased opportunities for communication. One project, which merges the concepts of EMT and FGRBI, is the KTTP. Through KTTP, family-guided coaching is used to help parents learn how to use communication intervention strategies within their daily routines and activities (Brown & Woods, 2015).

Brown and Woods (2015) studied the impact that participation in KTTP had on parents' use of targeted language interventions and the impact their participation in KTTP had on their child's use of targeted language outcomes. The participants of this study were nine parent-child dyads, with children between 12 and 28 months of age. The children were eligible for EI services and had communication needs. Their parents identified communication as their primary concern and expressed interest in participating in parent-implemented intervention. For all families, the mother was the primary participant, but several fathers also participated along with the mother (Brown & Woods, 2015).

Prior to the beginning of the project, KTTP staff met with the families who were interested to explain the project, obtain informed consent, and have a conversation about the family's concerns and priorities for their child and their daily routines and activities. To measure the parent-child interactions at baseline, between five and nine baseline sessions took place for each child and their family. During baseline, no attempt was made to influence the interactions between the parent and child. To characterize each child's development at baseline, the Mullen Scales of Early Learning (MSEL), the Preschool Language Scale–Fourth Edition (PLS-4), and the MacArthur Communication Development Index (MCDI) were used. Together, these tools measured the cognitive function, auditory comprehension, expressive communication, and parent-reported communication skills of each child. To measure the communication skills of the participants throughout the study, the Infant Growth and Development Indicator–Early Communication Indicator (IGDI- ECI) was administered at five different time points (Brown & Woods, 2015).

The triadic intervention sessions, which were 60-75 minutes long, took place in the child's home or at another community location typically visited by the child's family, such as a park or grocery store. A total of 24 intervention sessions took place, with one session occurring per week. Each intervention session took place across a minimum of three different routines that were identified by the child's family. Intervention strategies were taught within the contexts of these routines, using the location, materials, and time of day in which it would naturally occur. The family and the interventionist worked together to develop session plans. Parents identified the specific targets and strategies to use at the beginning of each session. Then the interventionist engaged in collaborative problem solving with the child's parents to either expand or refine the strategies used, identify additional routines in which the strategies could be implemented, or identify additional strategies to use (Brown & Woods, 2015).

During the coaching sessions, "interventionists intentionally provided information on the rationale behind potential interventions to expand parents' implementation beyond the routines practiced during the session" (Brown & Woods, 2015, p. 53). Interventionists individualized the introduction of new strategies for each child and family based on their individual ability levels, needs, priorities, and routines (Brown & Woods, 2015). "Interventionists used a mixture of information sharing, observation, joint interaction, conversation, direct teaching/demonstration, caregiver practice with feedback, guided practice with feedback, and problem-solving/reflection coaching strategies to teach the parents within a triadic coaching model" (Brown & Woods, 2015, p. 53). The interventionist also engaged in collaborative planning with the families at the end of each session to create a plan for what would occur at home in between sessions. After the completion of the 24 intervention sessions, maintenance sessions were video recorded to measure the parents’ continued use of target intervention strategies and the child’s use of targeted communication outcomes (Brown & Woods, 2015).

The communication strategies used by parents were grouped into the following categories: responsive interactions, modeling, and prompting or milieu teaching. During the intervention phase, all nine mothers increased their use of targeted modeling and responsive strategies. Three mothers showed a slight decrease in use of targeted strategies during the maintenance phase, but their averages still remained above their baseline averages. The communication acts used by the children were coded for vocalizations, gestures, single and multiple signed words, and single and multiple verbal words. All nine children showed increases towards one or more targeted communication outcomes, between the baseline and intervention phases, and maintained at least one targeted communication outcome into the maintenance phases (Brown & Woods, 2015).

The results of this study support the use and demonstrate the success of parent-implemented communication interventions. This aligns with the recommended practice of using parent-identified routines and activities to build their capacity to support their child’s development (Brown & Woods, 2015). Furthermore, the parents' continued use of the strategies during the maintenance phase suggests “that not only are these strategies effective but are also attainable and functional for parents to maintain, which supports the notion of family capacity-building in natural environments” (Brown & Woods, 2015, p. 61). Finally, the findings of this study confirm that language interventions can be provided within natural locations and contexts, by parents or other familiar caregivers, and using materials that the child is familiar with (Brown & Woods, 2015).

In order to meet the ever changing needs of their child, parents must be able to understand their child's areas of strength and need, embed intervention strategies into their everyday life, and adapt their use of strategies to fit the situation and meet their child's needs (Brown & Woods, 2016). The goal of caregiver coaching is "to build capacity in parents to have the competence and confidence to independently implement strategies and supports when the interventionist is not present" (Brown & Woods, 2016, p. 116). When caregivers understand their child's development, they are better able to make decisions and use strategies that support their child's learning or acquisition of skills (Woods et al., 2011).

Triadic Models of Early Intervention

Brown and Woods (2016) examined the triadic relationship of parent-implemented interventions. The goal of the triadic model of intervention is to positively impact children's developmental outcomes through their parents' use of the intervention strategies taught to them by their interventionist. This study examined the frequencies in which coaching is used by early interventionists, which strategies are most likely to support parents' use of intervention strategies, and which strategies are most likely to support children's targeted language outcomes (Brown & Woods, 2016).

Brown and Woods (2016) analyzed the video-recorded intervention sessions from the previously discussed study by Brown and Woods (2015). The videos were coded for the following variables: routine context, child communication, parent-implemented interventions, and caregiver coaching by the interventionist. They found the interventions took place during a variety of family-guided routines. Specifically, 41% of interventions occurred during play, 26% occurred during caregiving tasks, 17% through early literacy activities, 5% during the completion of household chores, 9% in no routine, and 2% during transitions. They found interventionists used a variety of coaching strategies with the children's parents, using specific coaching strategies 52.61% of the time and general coaching strategies 44.89% of the time. Specific coaching strategies included caregiver practice with feedback, problem solving and reflection, guided practice with feedback, and direct teaching or demonstration. General coaching strategies included observation, information sharing, conversation, modeling, and joint interaction (Brown & Woods, 2016).

The results of the sequential analyses conducted found that when interventionists used guided practice with feedback or caregiver practice with feedback coaching strategies, the parents were more likely to use the intervention strategies. Sequential analyses also revealed that interventionists' use of other coaching strategies did not generally increase the probability the parent would use intervention strategies (Brown & Woods, 2016). "Conditional probabilities demonstrated positive relationships between parents' use of intervention strategies and children's communication production . . . Responsive strategies had the highest effect sizes" (Brown & Woods, 2016, p. 120). This study found when the interventionist took a step back to observe the parent-child interactions and provided feedback or guidance, parents' use of intervention strategies increased. Through active coaching, interventionists can help build a family's capacity to implement interventions that encourage their child's development.

Caregiver-Implemented Interventions within Multiple Domains

Many of the studies on the effectiveness of caregiver-implemented interventions focus on the area of communication. There is much less data available regarding the impact of caregiver-implemented interventions on children's motor outcomes (Windsor et al., 2019). Windsor et al.

(2019) examined the impacts caregiver-implemented interventions had on both communication and motor outcomes. The participants of this study were three caregiver/child dyads. The children were between 15-23 months old, eligible for EI services, and received at least weekly home-based EI services. The sessions took place in the family's home and used both materials provided by the interventionist and the family's materials. The family and the interventionist jointly identified one motor target and one communication target, as well as a play routine and a caregiving routine in which the intervention would be implemented. Planning and problem solving occurred during each visit. During each session, the caregiver shared updates about what they were already doing within the chosen routines, the provider observed the routines and offered feedback, and the caregiver and provider agreed on strategies to practice (Windsor et al., 2019).

This study found that following the use of caregiver-implemented interventions, improvements in both motor and communication outcomes were identified. The caregiver's participation in the decision making process, opportunity to evaluate their use of strategies, and opportunity to implement interventions within meaningful contexts may have influenced the immediate increase observed in the caregiver's use of EMT strategies. While improvements were seen in both domains, greater progress was made towards communication goals than towards motor goals. This may be due to the fact that more strategies were used to target communication skills than motor skills. Due to the fact that only two routines were chosen for this study, it is possible the selected routines did not provide enough opportunities to practice the targeted motor interventions (Windsor et al., 2019). The authors suggested that in order "to increase opportunities for motor practice, more systematic planning may be needed to increase repetition within routines, or an increased number of routines or opportunities throughout the day may need to be identified" (Windsor et al., 2019, p. 84). Overall, the caregivers reported that they found this approach to be feasible, useful, and effective. These results suggest this approach has the potential to increase caregivers' competence and confidence to implement interventions into their daily routines and activities (Windsor et al., 2019).

Traditional versus Coaching Models of Motor Intervention

A study by Dirks et al. (2011) examined the difference between the COPing with and CAring for infants with special needs (COPCA) program and traditional infant physical therapy (TIP) models. Both the COPCA and TIP approaches address abilities and limitations in a child's motor skills. Generally, the TIP approach emphasizes the importance of direct, or hands-on, therapy, while the COPCA program aims to promote the participation of a child's family in addressing the child's motor delays (Dirks et al., 2011).

Using the TIP model, the therapist works directly with the child while providing information and suggestions to families to encourage their child's motor skills. The TIP model uses an instructor-learner style of interaction. The therapists pay close attention to atypical motor behavior, including muscle tone, and treat the infant in order to reduce the atypical functions. The therapist informs the child's caregivers about the purpose of the treatment strategies and provides instruction on how to integrate the strategies at home with their child (Dirks et al., 2011).

Family responsibility, family autonomy, and family-specific parenting are key elements of the COPCA approach. Through this model, coaching is used in order to develop an equal partnership and build a family's capacity to solve problems and encourage their child's development. A professional using the COPCA model is considered to be a coach rather than a therapist, as they are not directly treating the infant, but rather coaching the family and building their capacity to implement strategies which build upon their child’s motor ability. The COPCA model pays more attention to the functionality of motor skills than the quality of the motor performance, due to the belief that hands-on techniques may interfere with a child’s own process of motor learning (Dirks et al., 2011).

This study found varying levels and types of caregiver involvement between the two models. During TIP sessions, the therapists often interrupted, corrected, or facilitated the infant's activities. Coaching occurred frequently in the COPCA sessions, but not in the TIP sessions. Communication between the therapists and caregivers still took place within TIP sessions, but most communication was the therapist explaining handling techniques, symmetry and asymmetry, and typical movement patterns. In COPCA sessions, the coaches explained the value of the infant’s self-produced motor behavior and the trial and error process. Direct handling of the infant was used frequently by therapists in the TIP sessions and was almost never used by the coaches in the COPCA sessions. Overall, this study found significant variation between the contents of COPCA and TIP sessions, including variation in the role of the caregiver, role of the professional (therapist or coach), approach to families, and activities used to stimulate the infant’s motor development (Dirks et al., 2011).

Capacity-Building Models of Motor Intervention

The goal of the COPCA model is “to encourage the family's own capacities to stimulate the infant's motor development during daily care in naturally occurring parenting situations” (Akhbari Ziegler et al., 2020, p. 29). COPCA is based on the belief that caregivers have the capacity to learn, grow, and develop the skills needed to improve their situation. COPCA aims to maintain and promote families' independence and quality of life, enhance their well-being, and increase their participation in their child's interventions. COPCA is non-directive, performance-driven, and solution-focused. The COPCA coach observes and describes an infant's motor activities, asks questions which encourage reflection, engages in open dialogue, provides ideas for challenging the child, and gives positive feedback to families (Akhbari Ziegler et al., 2020).

Early studies indicate that COPCA is associated with more favorable developmental outcomes (Blauw-Hospers et al., 2011). Akhbari Ziegler et al. (2020) examined caregivers' experiences with COPCA in order to identify which aspects are most valuable to families and determine if COPCA is aligned with families' needs. Information was gathered after 6 months of intervention via a questionnaire with open-ended questions regarding families' experiences with COPCA. Overall, parents described COPCA as a beneficial and satisfying experience and no parent expressed negative experiences. Positive remarks included appreciation of the collaborative and adaptable nature of the home-based program. Many felt that the COPCA program had clear application to their everyday life, led to positive developmental outcomes for their child, and had a positive impact on their entire family (Akhbari Ziegler et al., 2020).

Several parents commented that the COPCA model was empowering to them and noted that they gained the skills needed to support their child at home between sessions. Their ability to promote their child's development, create a supportive environment, and adjust the challenge of activities was increased through the COPCA program. Families valued the positive reinforcement and reassurance from the coaches (Akhbari Ziegler et al., 2020). Families also valued the integration of interventions into daily routines and activities as “it felt less like therapy but much more like everyday life” (Akhbari Ziegler et al., 2020, p. 32).

Respondents shared that it was beneficial for them to engage in observation of their child as it helped them to further understand infant development and identify the abilities of their child. Several respondents also noted their understanding of and ability to be responsive towards their child increased as a result of the program. Overall, results showed that the program was aligned with and met the families’ needs (Akhbari Ziegler et al., 2020).

Virtual Early Intervention Services

One study examined the feasibility of using virtual home visits (VHV) in EI services. The success of telepractice within medicine suggests it may be applicable to early childhood programs as well. VHVs may be a potential solution to challenges programs may face, including provider shortages and travel time. One benefit of VHVs is that they still occur in a child’s natural environment and with their primary caregivers. VHVs strongly rely on caregiver-implemented interventions and the coaching model as the interventionist is not in the same physical location as the child and caregiver (Olsen et al., 2012).

The Virtual Home Visit Project served 36 families and took place over 2 years. The project increased children’s EI service through the use of VHVs, while still continuing with the home-based services established by each child’s IFSP. Families and providers completed surveys throughout the project, which asked about their comfort and satisfaction with the technological requirements of the VHVs. The majority of caregivers and providers indicated they were comfortable with the technical skills required to participate in the sessions and the technical requirements did not seem to interfere with their participation in the VHVs. Parents and providers were also asked to rate their satisfaction with service delivery throughout the project. During the first year, most parents rated their satisfaction with VHVs and face-to-face sessions equally. During the second year, there was more variability over the course of the year, but parents rated the VHVs more positively as the year progressed. During the first year, 79% of providers indicated they were somewhat or very satisfied with service delivery. During the second year, 90% of providers indicated partial or significant satisfaction with the experience. Technology was the factor most cited for dissatisfaction with the VHV service delivery model (Olsen et al., 2012).

This study found coaching occurred significantly more often during VHVs than during face-to-face sessions. No statistically significant differences were found between VHV and face-to-face sessions in the interactions between the caregivers and others in the home, interactions of the EI provider with others, or the interactions between the interventionist and the child while the parent engaged in an interaction with the child (Olsen et al., 2012). It was noted that teaching and modeling occurred more frequently during face-to-face sessions and “while teaching and modeling might show the parent how to engage in a strategy, teaching and modeling might actually supercede the parent’s opportunity to implement a strategy during a visit” (Olsen et al., 2012, p. 277). Parents discussed strategies more with providers during virtual visits than during face-to-face visits (Olsen et al., 2012).

Virtual and Face-to-Face Coaching Differences

A study by McDuffie et al. (2013) compared the use of targeted parent-implemented strategies during distance coaching and on-site coaching sessions. The participants were eight children, between 2 and 6 years old, with ASD. The study used a combination of face-to-face and distance intervention sessions. One face-to-face session took place, followed by three virtual sessions. This cycle was repeated several times. During the face-to-face sessions, the clinician and caregiver jointly identified a plan for the session. The interventionist observed the parent and child and provided suggestions, praise, and verbal models of what the parent might say to the child. The face-to-face sessions ended with a conversation about how and when the targeted strategies could be used at home. Distance sessions followed the same format and used the same interventionist as the face-to-face sessions (McDuffie et al., 2013).

The first strategy introduced was responding to the child's focus of attention with verbal language input, which was referred to as follow-in commenting. Parents' use of follow-in commenting increased immediately after the first session. As children with ASD generally communicate less frequently than TD children, there are limited opportunities for parents to respond to their child's communicative acts. Based on the awareness of this characteristic of children with ASD, the second strategy introduced was using time delay and environmental arrangement to prompt both verbal and nonverbal communication from the child and giving the child increased opportunities to make choices. This study found that while the parents' use of prompting increased, the impact of their increased prompts on their child's communication acts was not as strong. Authors state this difference may be due to the indirect nature of the prompts used (McDuffie et al., 2013).

Finally, the parents were taught how to expand upon their child's verbal communication acts and identify and interpret their child's use of non-verbal communication acts. As expected, the frequency of the children's production of communication acts corresponded with their parents' use of the interpretation and expansion strategies. In some parent-child dyads, the parents were more proficient in using prompting strategies than they were interpreting and expanding upon their child's verbal and nonverbal communication (McDuffie et al., 2013). This suggests parents may benefit from more "practice in recognizing and responding to their child's communication, especially with regard to responding to nonverbal communication acts that may be quite subtle and more difficult for parents to recognize" (McDuffie et al., 2013, p. 183).

This study did not find any significant differences in the parents' use of the targeted strategies between the face-to-face and virtual sessions. The majority of parents continued to use the strategies introduced during face-to-face sessions during distance sessions. This study did find the impact of the intervention was stronger for increasing parent prompting than it was for increasing child communication acts. Still, a positive impact on child communication acts was noted (McDuffie et al., 2013).

The Impact of the COVID-19 Pandemic on EI Services

The COVID-19 pandemic resulted in noticeable changes in EI service delivery due to the mandates, procedural changes, and safety precautions put in place. Most EI programs switched from an in-person model to a virtual model. Some EI providers found that the virtual services allowed caregivers to become more actively involved in the observation of their child and implementation of intervention strategies (Caporali et al., 2021). Still, Vilaseca et al. (2021) emphasized that while virtual services can encourage the use of the recommended, family-centered, practices, it does not guarantee a change in the approach used by EI providers.

A survey of 385 EI providers in Illinois found that the "identified benefits of telehealth included increased accessibility and caregiver involvement, whereas limitations included perceived lack of caregiver buy-in" (Roberts et al., 2022, p. 974). The majority of EI providers

(77%) reported primarily using caregiver-focused practices in virtual sessions during the COVID-19 pandemic, while only 8% of providers reported this as their primary focus during in-person sessions prior to the pandemic (Roberts et al., 2022). While there were some disadvantages to virtual services, many providers valued this “as a unique opportunity to engage caregivers in their child’s services” (Roberts et al., 2022, p. 979).

Capacity Building Models of Early Intervention

The majority of EC parent involvement programs are based on the belief that a parent’s capacity to promote their child’s development can be influenced by interventions targeting parent participation (Swanson et al., 2011). Swanson et al. (2011) examined the effects of capacity-building approaches to intervention on caregivers’ confidence and ability to provide their child with opportunities for developmental growth. Increased use of behaviors and an interaction style that promotes child development was used to assess competence. Parents’ perception of their ability, or efficacy, to encourage their child’s development within everyday parenting tasks was used to assess confidence (Swanson et al., 2011). “The relationship between skills and efficacy is conceptualized as bidirectional and transactional. Self-efficacy influences an intent to affect a behavioral consequence, where the skills acquired strengthen a sense of efficacy” (Swanson et al., 2011, p. 68). The likelihood of a person taking the appropriate actions to achieve an outcome is influenced by their perceived ability to do so (Bandura, 1997).

Previous research has found varied levels of self-efficacy in parents following the receipt of EI services for their child. Some parents felt very competent in their abilities to help their child learn new skills, while other parents felt less competent in their ability. This variation in perceived ability seems to be influenced by the ways in which EI providers interact with the caregivers and their family and the way interventions are implemented. This particular intervention supported caregivers' abilities to identify their child's interests and the routines or activities that provide the greatest opportunity for learning opportunities based on these interests. The goal was to strengthen the caregivers' ability to increase their child's participation in those routines or activities and use responsive strategies to reinforce their child's current skills and encourage the development of new skills (Swanson et al., 2011).

The participants of this study were one grandmother and three mothers of four children. The children were between 17 and 46 months of age and had developmental delays. All participants were involved in an EI program providing home-based services. The participants were told they would be active participants in the study, by helping identify, provide, and support learning opportunities based on their child's interests during their daily activities (Swanson et al., 2011).

The study investigator used checklists which describe ways that EI providers can build a caregiver's capacity to support their child's needs to guide their efforts. At the beginning of the study, a Child Interest Checklist and an Everyday Learning Activity Checklist were used to gather information from the caregivers about their child's interests and their daily routines and activities. The information from these two checklists was used to guide the participants in the identification of the routines and activities that would give their child the most interest-based learning opportunities (Swanson et al., 2011).

An Increasing Everyday Child Learning Opportunities Checklist was used to facilitate participants' identification of the activities in which interest-based interventions would be implemented. Each caregiver identified between eight and 10 family or community activities.

Family activities included reading, playing, bath time, and household chores. Community activities included grocery shopping, outdoor walks, and eating at a restaurant. The caregivers also created a plan to remind themselves to provide their child with multiple learning opportunities throughout their week (Swanson et al., 2011).

All phases of the assessment and intervention were based on adult learning theories, which promote the active involvement of caregivers throughout the entire process. In person and video modeling were used to demonstrate the use of responsive teaching strategies, which reinforce and expand upon children's skills, to the caregivers. Next, the caregivers were asked to use the responsive teaching strategies while the EI provider observed and provided feedback to support the caregiver. The provider visited the caregiver every one to two weeks to review progress, describe the caregivers' behavior that encouraged their child's development, offer guidance, and engage in collaborative evaluation of the benefits for both the child and the caregiver (Swanson et al., 2011). Caregiver reports of child interactions and enjoyment were used to measure the impact of the intervention on the child's participation in the interest-based learning opportunities (Swanson et al., 2011).

The caregivers' capacity to encourage their child's development was measured through the use of a Parent Behavior Rating Scale and the Parenting Confidence and Efficacy Scale. The Parent Behavior Rating Scale measures the caregiver's "sensitivity to a child's interests, caregiver warmth toward the child, contingent responsiveness to a child's behavior, attempts to promote elaboration in a child's behavior, and parenting enjoyment" (Swanson et al., 2011, p. 72). The Parenting Confidence and Efficacy Scale was used to measure types of parenting behaviors used and the caregivers' effort, emotional investment, and satisfaction in the completion of daily parenting tasks, including playing with the child, keeping them safe, comforting them, and providing learning opportunities (Swanson et al., 2011).

All four participants increased their ability to provide their child with natural learning opportunities after the introduction of the caregiver capacity-building and child interest-based strategies. All four caregivers' confidence, or self-efficacy, were also positively influenced by the interventions. Caregivers reported the intervention was beneficial in helping them identify their child's strengths and interests, view their child's strengths and needs in a more positive manner, support their child's participation in daily routines and activities, and support their child's development of new skills. The participants found it particularly helpful that the EI provider explained the strategies and encouraged the caregivers to ask questions and request more information about the strategies used. Other practices that were indicated by caregivers to be especially helpful were the modeling of strategies with active observation by the caregiver, caregiver opportunities to practice and be guided in their use of the strategies, and the provider's assistance in decision making (Swanson et al., 2011).

Naturalistic Interventions

Many historical models of EI are based on the theory of Skinner (1957), "who believed all behaviors are learned" and need "to be directly shaped and reinforced" (Rakap & Rakap, 2014, p. 36). While highly-structured interventions based on this theory can have initial positive effects on a child's development, children are often unable to generalize the skills into new contexts and maintain the skills over time due to the highly-structured nature of the intervention itself. Naturalistic interventions take a different approach by using child-led contexts, learning targets based on the skills a particular child needs, and following the child's lead throughout the intervention. Naturalistic interventions are provided by a child's familiar caregivers (Rakap & Rakap, 2014).

Rakap and Rakap (2014) conducted a review of literature which focuses on naturalistic parent-implemented language interventions for children who were 5 years (60 months) or younger and had a disability. They examined the specific intervention approaches, participant characteristics, study characteristics and quality, and the child and caregiver outcomes of each study. All of the studies were focused on training a child's parent to implement naturalistic language interventions and provided information about both the parent and child outcomes. If a study took place in a clinical setting, but used parent-implemented language interventions within an activity that was naturalistic and appropriate for their child's development rather than contrived, it was included in this review. The final group of 15 articles, which met inclusion criteria, were published between 1992 and 2010. Disability categories represented in these studies included, but were not limited to, ASD, Down syndrome, and language impairment (Rakap & Rakap, 2014).

Across these studies, six different naturalistic approaches to language intervention were used to train parents. Five studies used milieu teaching (MT), three used pivotal response training (PRT), two used EMT, two used functional communication training (FCT), two used blended communication and behavior support intervention (BCBS), and one used naturalistic language paradigm (NLP) (Rakap & Rakap, 2014). MT "is a naturalistic model of early language intervention in which child interest and initiations are used as opportunities to model and prompt language use in everyday contexts" (Kaiser & Roberts, 2013, p. 296). Key principles of MT intervention programs include maximizing the chance of the child's communication through intentional arrangement of their environment, creating routines that are enjoyable for the child, using prompts to expand language in response to the child's interactions, and reinforcing the child's attempts to communicate. EMT combines the principles of responsive interaction and MT (Rakap & Rakap, 2014). PVT is an approach that aims to teach a child to respond to social interactions and learning opportunities occurring in their natural environment, decrease the need for constant supervision by the intervention provider, and minimize the services that take place outside of the child's natural environment. PVT focuses on several outcomes, including child response to multiple cues, motivation, self-management skills, and self-initiated interactions (Koegel et al., 1999).

BCBS combines the principles of positive behavior support (PBS) and EMT. Key components of BCBS include giving the child sufficient time to respond, increased adult response to the child's communicative attempts, using clear, concise, and limited instructions, and the adult's decrease in negative responses and increase of positive reinforcement to the child. FCT involves the use of a functional behavior assessment (FBA) to assess the function, or purpose, of a child's challenging behavior. After the function is determined, a communicative response which serves the same purpose can be taught. NLP is a child-initiated approach. The goals of the NLP are to increase children's motivation and response and encourage the generalization of skills through the use of environmental arrangement, turn taking, a variety of tasks and multiple examples, and reinforcement of children's verbal attempts through preferred objects or activities and praise (Rakap & Rakap, 2014).

Authors state that the methodological quality of the intervention studies were good to strong, with PRT, EMT, MCBS, and MT being strong and LP and FCT being good. Across all

15 studies, a total of 70 children and 74 parents participated. Parents demonstrated the ability to learn and implement language interventions with their child and their implementation of these interventions positively impacted their child’s language skills in all 15 studies. Despite these positive findings, some limitations were identified which may be areas that are valuable for future research. While the procedures used to train parents were described in detail in all studies, limited information was provided about the frequency, length, and duration of the parent training sessions. The absence of this information makes it difficult, if not impossible, to determine the total number of hours of parent training needed for parents to learn and implement the language interventions with fidelity. Parent training and implementation sessions took place in a room at a clinic in nearly half of the studies. Authors state that one possible benefit of the clinical setting is the distractions of daily life are removed and parents can focus on learning and implementing the strategies. This distraction-free environment is not, however, the reality of most families of children with disabilities and therefore the generalization of the interventions in real-life contexts becomes more difficult (Rakap & Rakap, 2014).

Barton and Fettig (2013) also conducted a literature review of studies that used parent-implemented interventions to target specific developmental outcomes for young children with disabilities. The goal of this literature review was to analyze the fidelity features of each study. A total of 24 studies, published between 1972 and 2012, were reviewed. In total, 241 children, between the ages of 24 months and 8 years, and 277 parents participated. Of the studies, 14 took place in the child’s home, seven took place in a clinic, and two took place both in the clinical setting and the child’s home. One study did not report the setting where the interventions took place. Throughout these studies, sixteen unique approaches to language intervention were used.

The two approaches used most often were EMT and functional behavior (FB) intervention. Child outcomes, including improving language, play, social, adaptive, or other skills and reducing challenging behaviors, were measured across the 24 studies (Barton & Fettig, 2013).

The number of intervention sessions, which ranged between four and 78, was reported for 16 of the 24 studies. One study reported the duration in months, but not the number of sessions that took place during that time. Researchers used a combination of collaborative progress monitoring, in person or video modeling, role-play, problem solving conversations, and a variety of other strategies to train parents across the studies (Barton & Fettig, 2013).

Although a parent’s ability to generalize and maintain the use of intervention strategies is vital in order for an intervention to be sustainable, less than half (46%) of the studies measured parents’ generalization of the procedures of the intervention. All 24 studies found the use of parent-implemented interventions had positive impacts on children’s developmental outcomes. When fidelity was measured, the majority of parents implemented the interventions with high fidelity. Intervention fidelity was reported for 79% of the studies reviewed (Barton & Fettig, 2013). Much fewer studies (29%) reported implementation fidelity, which is “the measurement of the specific practices used to train parents across parent training sessions” (Barton & Fettig, 2013, p. 211). The use of intervention practices as intended is imperative to positive outcomes for both parents and children (Barton & Fettig, 2013). Therefore, “fidelity assessment is not just a nicety of experimental endeavors; it has a direct bearing on how well the components should be used in practice when specific outcomes are desired” (Wolery, 2011, p. 156).

A Bagless Approach to Early Intervention

Using traditional models of EI, providers often bring toys or other materials into families' homes and use these to target a child's IFSP outcomes during their EI session. An evidence-based alternative to this approach is bagless intervention. Using bagless intervention, providers refrain from bringing their own toys and materials into a home and instead use the materials available in the child's home and the family's naturally occurring routines and activities to target the child's outcomes. Interventions should take place within natural contexts and a provider's toys are not a part of a family's daily routine and should therefore not be used as the foundation of EI sessions. By bringing a bag of toys into homes, providers minimize the role of the caregiver and reduce the chance that they will develop the skills needed to support their child's development as a result of the EI session (Williams & Ostrosky, 2020). "Family members should not have to rely on a provider's bag of toys to be the agent of change for their child, but should instead be provided with the tools and skills they need to promote their child's development" (Williams & Ostrosky, 2020, p. 76).

EI providers may have valid reasons for wanting to bring toys with them to sessions, including intentional planning for a session through the selection of toys which target specific skills and the ability to catch a child's attention and encouraging exploration with novel toys. However, this approach can leave a child's parents unsure of how to gain their child's attention and implement the strategies between sessions without the materials the provider used. By bringing toys to an EI session, providers may give parents the impression that the provider's hands-on work is more valuable than the family's efforts with the child. Parents may develop the belief that the toys used by the provider are the key to success and worry that the materials in their home are not enough to meet their child's needs. This places the focus on the toy, instead of the skill being targeted (Williams & Ostrosky, 2020). By using bagless intervention, providers have the opportunity to shift the focus away from their own materials and instead place it on "authentic activities based on the interests, strengths, and priorities of children and their families . . . When bags are removed from sessions, providers must rely on family routines, activities and materials as a context for intervention" (Williams & Ostrosky, 2020, p. 78).

Planning for a Bagless Session

While planning for a bagless session may look different from the preparation EI providers are familiar with, the planning step is still essential to the success of the session (Williams & Ostrosky, 2020). Instead of planning for which toys to bring, providers must consider "what questions they might ask families, how they can help families embed goals into routines, and what kind of information they can share with families to promote learning" (Williams & Ostrosky, 2020, p. 80). Providers should also carefully consider the timing of their session, so that interventions can be embedded when the targeted routine naturally occurs, such as during breakfast, bath, or dinner time (Williams & Ostrosky, 2020).

Helping Families Understand Bagless Intervention

Some families may have a difficult time understanding or supporting a bagless approach to EI, especially if they are used to providers bringing toy bags to sessions. They may worry that they do not have enough toys, or the "right" toys, to use during the session to support their child's development. EI providers should prepare their current families for the transition to bagless intervention by explaining the purpose behind this approach. They may also consider gradually decreasing the number of items they bring into the home for each session in order to ease families into this change (Williams & Ostrosky, 2020). Providers should also explain that many materials can be used to support the child’s learning, not just toys, and emphasize “that the materials being used are not the agent of change, but that rather caregiver–child interaction is what promotes the acquisition of new skills” (Williams & Ostrosky, 2020, p. 83).

Traditional versus Participation-Based Services

Campbell and Sawyer (2007) examined videos from 50 EI providers from a variety of disciplines to determine if traditional or participation-based models of intervention were used. Sessions which focused on the provider-child interactions more than the caregiver-child interactions were considered to be traditional sessions. In these sessions, the provider generally designed an intervention and worked directly with the child, while the caregiver was either not present or passively observing the session. Sessions in which the caregiver worked directly with the child, while the EI provider supported through coaching, were considered to be participation-based. These sessions utilized the family’s naturally occurring routines and activities as opportunities for learning (Campbell & Sawyer, 2007).

The EI providers all completed a professional development workshop, which focused on providing interventions within natural environments. They were then asked to record and submit a video of a typical intervention activity with a child. Videos were evaluated based on several criteria, including the role of the caregiver, role of the EI provider, purpose of the activity, and the likelihood that the materials used during the session would be naturally available in the environment in which it took place (Campbell & Sawyer, 2007).

This study found that 70% of the EI sessions used traditional methods and only 30% were participation-based. Most sessions, both traditional and participation-based, used materials that were natural to the environment. Children in traditional sessions were generally less engaged than children in participation-based sessions. Triadic interactions between the EI provider, caregiver, and child occurred in both groups, but there were *more* provider-child only and *less* caregiver-child only interactions in the traditional sessions than in the participation-based sessions. In the traditional sessions, the caregivers often watched the EI provider interact with the child and were not involved in the interaction. In the participation-based sessions, the caregiver spent a majority of the time interacting with the child (Campbell & Sawyer, 2007).

Authors state that previous literature suggests EI sessions are "provided most frequently through a traditional model where an interventionist-directed activity is used to provide opportunities for a child to learn or practice new skills" (Campbell & Sawyer, 2007, p. 300). Overall, this study found similar results, which indicate that a majority of EI sessions use traditional models of intervention, which seem to directly contradict the recommended, family-centered, practices. Despite many years of research and emphasis on the importance of family-centered approaches, many EI providers are still not putting this into practice (Campbell & Sawyer, 2007).

Reported Versus Actual Use of Coaching Strategies

While Part C policy dictates EI services should focus on building a family's capacity to meet their child's developmental needs, there is a notable disconnect between the recommendations or mandates and what occurs in actual practice (Brown & Woods, 2016). "Studies consistently indicate that there is a gap between research and practice, resulting in the conclusion that implementing family-centered practices may be easier said than done" (Woods et al., 2011, p. 381). There is significant variation in the processes used by interventionists for teaching a parent to implement interventions. Some interventionists provide the parents with instruction or information in a one-directional manner. Others develop a relationship with the child's parent, support the parent's role as a key decision maker, and engage in collaborative planning with them (Brown & Woods, 2016).

Research has found "that, despite policy, programmatic expectations, and professional development, . . . home visits tend to be predominantly child focused rather than supporting interaction between the parent and child" (Woods et al., 2011, p. 381). Much of the home visit time is spent in provider-child interactions, instead of caregiver-child focused interactions. Many providers believe they are using family-centered practices even when they are not (Salisbury et al., 2012). Salisbury et al. (2012) aimed to discover the relationship between providers' reported and actual use of coaching strategies. They found the providers in their case study used coaching strategies more than what was previously reported, but still found less than anticipated agreement between actual and reported use of coaching strategies (Salisbury et al., 2012). The authors acknowledged that "the shift from a child-focused intervention approach to the use of caregiver coaching strategies is difficult for providers to do and may require more intensive or different types of supports over a prolonged period of time" (Salisbury et al., 2012, p. 95).

Supporting Learning Through Everyday Experiences

When interventions are highly-structured and unnaturalistic, parents and children are much less likely to be able to generalize the strategies used and skills learned and maintain them over time. Naturalistic interventions use child-led contexts, choose learning targets based on the individual child's strengths and needs, and follow the child's lead throughout the intervention (Rakap & Rakap, 2014). Part C guidelines require EI services be designed to build a family's capacity to meet their child's needs and support their development (Brown & Woods, 2015). Guidelines also state services should be provided in a child's natural environment, to the maximum extent possible (IDEA, 2017). This includes both the physical location where the service is provided and the provision of services during the child's and family's naturally occurring routines and activities (Brown & Woods, 2015).

"Routines have built in repetition that supports practice, promotes learning, and develops independence" (Family Guided Routines Based Intervention [FGRBI], 2018, p. 2). Routines occur regularly, have a predictable sequence, and have an expected response or outcome. Some families follow their routines exactly, without any changes, and others follow a generally predictable, but flexible, pattern. Routines are impacted by each family's culture and values, areas of strength and need, mental and physical health, and personalities as well as the number of people in the household, environmental arrangements, and other logistics, such as their school or work schedules (FGRBI, 2020).

Brown and Woods (2015) found that parents have the ability to effectively learn how to use intervention strategies in the context of their naturally occurring routines and activities. When the routines, activities, strengths, needs, and priorities of a family are considered when planning for and implementing interventions, "the intervention will be more compatible with their lives and become more meaningful to them. This, in turn, will help caregivers to use intervention approaches more often and maintain them over time" (Rakap & Rakap, 2014, p. 36).

A child's everyday experiences have a greater chance of enhancing their development when they are engaging and interest-based and provide the child with opportunities to use and build upon their existing abilities and knowledge (Swanson et al., 2011). Interest-based learning has been associated with less negative and more positive child behavior (Woods et al., 2011). Interventions that take place within a child's natural environment and within everyday routines give the child the opportunity "to build developmental skills within the activities in which those skills are needed, support parents to embed strategies and supports within the activities in which they typically participate, and promote generalization of both child and parent skills" (Brown & Woods, 2016, p. 115).

Daily routines and activities, including hand washing, playing with toys, and eating a meal, as well as spontaneous events, such as a knock at the door or seeing an airplane in the sky, all offer opportunities for a child to engage in joint attention, make comments, ask questions or make requests. EI providers play an important role in helping a child's caregivers understand that each of these moments are opportunities for learning (Woods et al., 2011). "Focusing on outcomes that expand children's participation within their everyday environments is both efficient and effective for children and their caregivers" (Woods et al., 2011, p. 382).

When a caregiver is directly involved with making decisions about the logistics of an intervention, including its location, the people present and materials used, and the frequency at which it will occur, they are more likely to follow through with the plan as it reflects their beliefs and priorities. Naturalistic interventions promote the generalization of learning targets. Strategies that have been successfully implemented with fidelity by caregivers include using environmental arrangement to maximize the opportunities for communication, following a child's lead and interest, offering opportunities for choice making, using wait time, and using natural reinforcers. Through intentional planning, these strategies can be embedded into multiple activities and routines. By actively involving caregivers in this planning and decision making process, their ability to generalize the strategies grows. When caregivers are able to embed intervention strategies into a variety of activities and routines and apply the strategies to other learning outcomes, the learning opportunities for the child are increased (Woods et al., 2011).

Embedding Interventions into Everyday Routines and Activities

Family guided routines based interventions (FGRBI) target functional outcomes. The goal of FGRBI is to support the learning and increase the confidence of caregivers and give them strategies which can be used and expanded upon to encourage their child's development. As discussed above, interventions are most beneficial when they are embedded, or inserted, into a naturally occurring routine or activity in order to target a specific skill. Interventions embedded into daily routines and activities become functional and provide more opportunities for practice. Strategies should feel comfortable for the caregiver and natural for the routine or activity it is embedded within. The intervention strategies should not interfere with or drastically change the routine or activity. The goal is to use the existing routine as a comfortable foundation and only change it as much as needed. EI providers should not take over the routine or activity and should remember that what occurs in a families' day to day life is what is most important, not just what happens during their visit (Woods, 2020).

Embedding Interventions into a Variety of Routines and Activities

It is valuable to coach within multiple family-identified routines and activities, both in play and non-play routines. Children have increased opportunities for practice when their parents are able to use strategies within multiple routines (Brown & Woods, 2016). While play is essential for children's learning, it is not the only activity that regularly occurs in a family's day. Interventions should be embedded into a variety of routines and activities, which occur throughout the day. Household chores, such as doing the laundry, taking out the trash, and feeding family pets, are all valuable opportunities for learning. Almost any routine, including hand washing, preparing meals, and bath time, can be used as an opportunity for positive and intentional parent-child interactions (Woods, 2020).

Writing Routines-Based Individualized Family Service Plans

A child's IFSP serves as a guide for their EI services. This document provides direction for the child's family and EI providers on how to help the child work towards and meet the identified goals (Jung, 2007). "Unfortunately, researchers have found that many of the strategies presented on IFSP documents are inconsistent with family routines, are written using professional jargon, and sometimes do not relate to the identified outcome or a family-defined priority" (Jung, 2007, p. 3).

The intervention strategies suggested by EI providers should be aligned with the outcomes in a child's IFSP. Writing IFSP outcomes that are routines-based, indicating specifically what will be done within daily routines to support the desired outcome, can facilitate this alignment. It is essential that everyone on the child's team clearly understands the purpose and steps of the intervention strategies that will be used with the child. EI providers are often familiar with words or acronyms that are not well understood by people who are not in the field. Providers should avoid using these words or acronyms that are not used by the general public as the use of these words can be confusing, even intimidating, to a child's caregivers and even to providers from other disciplines. Overall, it is suggested that the outcomes on a child's IFSP be understandable, routines-based, outcome-driven, non judgmental, evidence-based, and implemented by the child's caregivers (Jung, 2007).

Adult Learning Theories and Caregiver-Implemented Interventions

Family-centered practices are individualized, reflect both the culture and values of the family, and build upon existing strengths (Smith et al., 2017). In order to effectively use a caregiver-focused model of EI, providers must not only be knowledgeable about evidence-based strategies and interventions, but must also be proficient in their ability to engage in collaborative consultation with a child's caregiver. This focus requires the EI provider to assume multiple roles, including clinician, coach, facilitator, and consultant (Woods et al. 2011).

In order to successfully implement the evidence-based and family-centered practices discussed in this review of literature, EI providers must expand their knowledge of strategies which build caregivers' confidence and ability to use developmentally responsive interactions with their child. Unfortunately, while there is substantial information available about the effectiveness of caregiver-implemented interventions, there is much less information available to assist EI providers in learning specific strategies for teaching caregivers. Adult learning theories are one possible guide to this process. Many of the principles and strategies of adult learning theories are relevant for EI practice (Woods et al., 2011). One principle that is especially relevant for EI is that "adults learn best with clear, relevant, and jointly established expectations. A mismatch in expectations can reduce the caregiver's attention to the goal-setting process, add frustration for both parties, and delay the initiation of quality intervention for the child" (Woods et al., 2011, p. 385). Each caregiver has unique backgrounds, strengths, goals, and beliefs (Campbell & Palm, 2018). Since each adult learner is unique, the process used by EI providers should be individualized to consider the preferences and meet the goals of each adult (Woods et al., 2011).

Facilitating Caregiver-Implemented Interventions

As stated above, there is much more information available about the effectiveness of caregiver-implemented interventions than there is about specific strategies for EI providers to use to facilitate these interventions. Woods et al. (2011) offered some recommendations for EI providers. They recommend EI providers first observe the caregiver’s interactions with the child before suggesting interventions. This process helps identify the areas of strength and need within the parent-child interactions. The identified areas of strength can serve as a foundation for the interventions. This initial observation also provides valuable information about the child’s participation in the routine. This information helps facilitate the EI provider’s collaborative conversation with the caregiver regarding the logistics (what, where, how, etc.) of the intervention (Woods et al., 2011). This initial observation also “sets the stage for the caregiver as the child’s primary communication partner and actively engages the caregiver immediately in the routine, thus inhibiting any reluctance to participate” (Woods et al., 2011, pp. 385-386).

After observing the caregiver-child interaction, the EI provider can join the activity or routine and either explain or demonstrate a strategy. When introducing a new strategy, it is important to also explain its purpose and value. The adult learner’s understanding of the goal and reasoning behind a strategy is key for increasing the chance of its successful implementation (Woods et al., 2011). Direct teaching of this information “is not *un*family centered or inappropriate for EI when it is offered within a responsive and respectful relationship with the caregiver” (Woods et al., 2011, p. 386). It is important to note that direct teaching is not giving the caregiver a list of ideas at the end of the session. Instead, direct teaching and demonstration of strategies are integrated into the routine or activity, with the caregiver as an active participant. Information shared during this step of the cycle should be clear and concise (Woods et al., 2011).

The next step, implementation, is vital for the success of the caregiver-implemented intervention. Increased practice leads to mastery, which in turn leads to better results. During the implementation/practice phase, EI providers guide the caregiver through the use of a strategy. The EI provider can give feedback on what to continue doing, as well as what to consider changing. They are also able to give feedback about the child's response to the strategy (Woods et al., 2011). By observing the caregiver and child during the implementation phase, the EI provider gathers additional information about "the quality of the match between the strategies, the child's participation, and the level of support provided by the caregiver in the routine" (Woods et al., 2011, p. 387). This process also builds the caregiver's confidence to implement the strategies with their child (Woods et al., 2011).

Towards the end of or after the implementation phase, the caregiver and the EI provider should jointly evaluate the success of the intervention strategies and create further plans for implementation. This problem solving phase supports the caregiver in generalizing and becoming more confident and autonomous in the use of the strategy. This phase also helps the caregiver take ownership of the interaction, which facilitates self-reflection. EI providers can use open-ended questions to scaffold the conversation (Woods et al., 2011). "Scaffolding is a generic term that refers to the strategies used to help learners, both adults and children, to extend their reach within their current knowledge and skill use" (Woods et al., 2011, p. 387). The use of scaffolding is intended to reduce frustration, while allowing the learner to operate as independently as possible. This also allows the learner (the caregiver) to engage in self-reflection, build their confidence, and increase their independence (Woods et al., 2011).

Young children learn best from familiar caregivers and within their real-life routines and activities. A lack of family participation in EI sessions reduces the effectiveness of the treatment. Effective coaching models utilize joint planning, observation, practice, reflection, and feedback. This model is consistent with other models of adult learning as it starts with what the adult/caregiver already knows or does, builds upon their existing skills or knowledge, encourages application of the strategies into meaningful contexts, and evaluates the effectiveness of the actions used (Rush et al., 2008).

Chapter 3: Summary/Conclusions

Children’s brains are the most adaptable in their first 3 years of life. When interventions are provided early in a child’s life, they have a greater benefit (CDC, 2021). Children’s ability to learn new skills, overcome challenges, and succeed in school and life can be positively impacted by EI services (CDC, 2019). This review of literature focused on two evidence-based and highly effective strategies, the use of coaching and the use of routines or activities based interventions. The use of these strategies can maximize the benefit of interventions for children with developmental delays and their families (Singleton, 2018).

Conclusions

Parents play a significant role in their child’s development and are often acknowledged as being their child’s first teacher, due to the multifaceted nature of the interactions and relationship between parent and child (Roberts & Kaiser, 2011). Many traditional approaches to EI minimize the fundamental role caregivers play in their child’s development. Using traditional approaches, the EI provider works directly with the child towards provider-chosen goals. The caregiver is generally a passive observer of this type of intervention (Swanson et al., 2011).

In highly-effective and evidence-based models of EI, the child’s family plays a significant role in planning for and implementing interventions. The child’s outcomes, or goals, are developed based on the needs of the child and the wishes and priorities of their family (HMG, n.d.). A caregiver's involvement in intervention is valuable, because they are consistently involved in their child’s everyday life (Rakap & Rakap, 2014).

Coaching is a capacity building model that aims to increase the skills, abilities, and confidence of parents. With the family-guided coaching approach, parents are key decision makers in determining where, when, and how interventions are implemented with their child. During coaching sessions, EI providers share information about the rationale behind the strategies discussed in order to build the caregiver’s capacity to implement the strategies between sessions and in other contexts (Brown & Woods, 2015). Parents must be able to understand their child’s areas of strength and need, embed intervention strategies into their everyday life, and adapt their use of strategies to fit the situation in order to meet the ever changing needs of their child (Brown & Woods, 2016). It is valuable to coach within multiple family-identified routines and activities, both in play and non-play routines (Brown & Woods, 2016). When caregivers are able to embed intervention strategies into a variety of activities and routines and apply the strategies to other learning outcomes, the learning opportunities for the child are increased (Woods et al., 2011).

When interventions are highly-structured and unnaturalistic, parents and children are much less likely to be able to generalize the strategies used and skills learned and maintain them over time. Naturalistic interventions use child-led contexts, choose learning targets based on the child’s strengths and needs, and follow the child’s lead throughout the intervention (Rakap & Rakap, 2014). A family’s typical routines and activities, including bath time and eating a meal, as well as spontaneous events, such as a dog barking or seeing an airplane, all offer opportunities for a child to engage in joint attention, make comments, ask questions or make requests. EI providers play an important role in helping a child’s caregivers understand that each of these moments are an opportunity for learning (Woods et al., 2011).

When the routines, activities, strengths, needs, and priorities of a family are considered when planning for and implementing interventions, it becomes more meaningful. This increases the chance that families will maintain the use of the strategies over time (Rakap & Rakap, 2014). Interventions are most beneficial when they are embedded, or inserted, into a naturally occurring routine or activity in order to target a specific skill. EI providers should not take over the routine or activity and should remember that what occurs in a family's day to day life is what is most important, not just what happens during the EI session (Woods, 2020).

In order to effectively use a family-centered model of EI, providers must be able to engage in collaborative consultation with a child's caregiver. While there is much information available about the effectiveness of caregiver-implemented interventions, there is much less information available to assist EI providers in learning specific strategies for teaching caregivers. Adult learning theories are one possible guide to the coaching process (Woods et al., 2011). One principle of adult learning theories, which is especially relevant for EI, is that "adults learn best with clear, relevant, and jointly established expectations" (Woods et al., 2011, p. 385).

While Part C policy dictates EI services should focus on building a family's capacity to meet their child's developmental needs, there is a notable disconnect between the recommendations or mandates and what occurs in actual practice (Woods et al., 2011). It seems that a majority of EI sessions use traditional models of intervention, which seem to directly contradict the recommended, family-centered, practices (Campbell & Sawyer, 2007). "Studies consistently indicate that there is a gap between research and practice, resulting in the conclusion that implementing family-centered practices may be easier said than done" (Woods et al., 2011, p. 381). Many providers believe they are using family-centered practices even when they are not (Salisbury et al., 2012).

Implications for Practice

As an ECSE/EI teacher, I have the opportunity to work with eligible infants and toddlers and their parents or other primary caregivers. I strive to ask questions, provide ideas, and model strategies that encourage families to play an active role in their child's learning. My goal is to build each family's capacity to promote their child's development by implementing strategies into their daily routines. I want the families I work with to feel confident in their ability to implement and expand upon strategies and feel empowered knowing they are their child's first and most important teacher.

I conducted this review of literature in order to gain a better understanding of highly effective and evidence-based practices for EI services. More specifically, I hoped to find clear recommendations of the most effective ways to put these strategies into practice. I found a significant amount of information regarding the effectiveness of coaching within a family's naturally occurring routines and activities. I did not, however, find nearly as much specific information on how to implement this or how to transition from traditional models to capacity-building models of EI. Woods et al. (2011) suggest that adult learning theories can be used as a possible guide to the coaching process. Based on this information, I intend to further research and expand my knowledge of adult learning theories. I also intend to expand my knowledge of the key principles of parent education. I believe this knowledge will increase my confidence in my ability to effectively coach caregivers.

My research gave me an opportunity to intentionally reflect upon my current practices as an EI provider and create a plan for continuous improvement. I discovered that while my goal is to use practices that are family-centered and capacity-building, progress is still necessary in order to fully meet that goal. One family-centered approach that I consistently use is the consideration of the wishes and priorities of families when planning for interventions. I also believe that I provide thorough explanations of the rationale behind strategies and bring attention to opportunities for learning.

In the future, I intend to more regularly provide interventions within the context of family-identified routines and activities. I find that a majority of the interventions used or discussed during my EI sessions are play-based. Brown and Woods (2016) state that it is valuable to coach within multiple family-identified routines and activities. While play is essential for children’s learning, it is not the only activity that regularly occurs in a family’s day. Almost any routine, including hand washing, preparing meals, and bath time, can be used as an opportunity for positive and intentional parent-child interactions (Woods, 2020). I hope to help caregivers recognize these valuable opportunities for learning that occur throughout their day.

Recommendations for the Future

As stated above, there is much information available about the effectiveness of caregiver-implemented interventions. There is, however, much less information available to assist EI providers in learning specific strategies for teaching caregivers (Woods et al., 2011). I believe that more research and specific information is needed in order to build EI providers’ capacity to use family-centered practices.

I also believe that staff development or training is necessary to increase EI providers’ awareness of and ability to use effective coaching strategies. School districts and other EI programs should strongly consider providing their EI staff with these learning opportunities. This could be offered directly through a school district, local special education cooperatives, virtual learning opportunities, or EI conferences. In order for staff to put family-centered strategies into practice, they must first have a solid understanding of and belief in their ability to do so.

During the COVID-19 pandemic, many EI providers, including myself, made a sudden shift from in-person to virtual sessions. While this change was uncomfortable and difficult at times, it provided a unique opportunity to carefully evaluate and make adjustments to the approaches used during EI sessions. I found that the virtual service model strongly encouraged the use of family-centered practices, as it nearly required the use of coaching strategies due to the fact that the provider is in a different physical location than the child and family. As providers return to in-person sessions, they should be careful not to abandon the family-centered and capacity-building practices they had the opportunity to use during virtual sessions.

Summary

Evidence indicates a person's perception of their ability to produce a desired outcome influences the likelihood of them taking the appropriate actions to achieve that outcome (Bandura, 1997). When EI providers use coaching and allow the child’s caregiver to be an active participant in the planning, implementation, and reflection process, the caregiver’s confidence in their ability to help their child learn grows (Swanson et al., 2011). Caregivers have the opportunity to interact with their children across multiple routines and spend much more time with their child than the EI provider does (Brown & Woods, 2016). Parent-implemented interventions have been shown to have one of the greatest impacts on children’s development. By coaching parents to implement interventions during their everyday interactions with their child, the impact of intervention is maximized (Singleton, 2018).

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