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EARLY INTERVENTION ACCESS AND USE: THE IMPACT ON OUTCOMES

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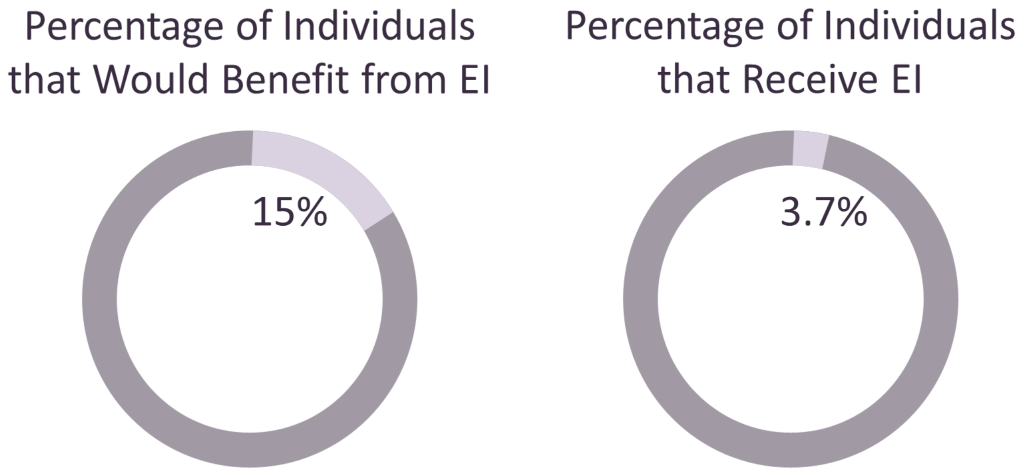
Chapter 1

EI Overview

In 2020, the United States provided early intervention (EI) services to 437,234 children; however, this is only 3.7% of children under age 3, when approximately 15% of children would benefit from obtaining services (Early Childhood Technical Assistance Center, 2021; World Health Organization & United Nations Children's Fund, 2012). This disparity is represented in Figure 1. When a child under 3 years old is at risk for a disability or delay, they may need additional support to reach developmental milestones through EI. These services are provided through Part C of the Individuals with Disabilities Education Improvement Act (Individuals with Disabilities Education Act, 2017). EI aims to improve target skills and future educational outcomes; this may include services provided by a speech-language pathologist (SLP), occupational therapist, physical therapist, or other health professional. Several populations benefit from receiving EI, including individuals with hearing loss, autism spectrum disorder (ASD), and intellectual or developmental disabilities.

Figure 1. Access to services



(Early Childhood Technical Assistance Center, 2021; World Health Organization & United Nations Children's Fund, 2012).

Exposure to speech and language is crucial to the development of reading, writing, speaking, and listening skills. EI with an SLP is a stimulus-rich environment that increases the child's interaction with speech and language to facilitate the growth of their skills. SLPs should strive to provide family-centered, developmentally supportive, comprehensive, and evidence-based services (Paul & Roth, 2011). There are various types of EI, and these services should be provided by the appropriate professional. One individual may see different professionals for different areas, as 11% of a sample of 457 children received services from three or more EI professionals (Khetani et al., 2018). Collaboration among professionals is crucial to providing the best possible outcomes for clients throughout the duration of services. Children spent an average of 17 months receiving EI services, and the average cost of these services was $16,000 per child (Hebbeler et al., 2009). With the cost of EI in mind, consideration of benefits for those that receive services is imperative.

Importance of EI

Benefits of EI

EI is an essential first step in ensuring short- and long-term competencies for children with disabilities or delays and is suggested to improve speech, language, and social skills. The oral language skills and alphabet knowledge of 136 preschoolers with language impairment were both statistically significant predictors of kindergarten reading competency (Murphy et al., 2016). Exposure to written language during preschool is crucial to both pre-literacy and later reading skill development. Receiving EI with an SLP positively impacts not only the targeted skills, but also can indirectly improve other abilities (Robertson & Weismer, 1999). The earlier intervention starts, the more progress can be made before children start school.

Short- and Long-Term Results of EI

Not only are there demonstrated benefits of EI while the child is in therapy, but these improvements also carry into the early school years, even when intervention does not continue. Children that receive EI with an SLP achieved average speech and language scores by age 5 (Girolametto et al., 2001). The value of EI is demonstrated through the increased success in the early school years; however, examining long-term outcomes may establish the importance of EI even more. Individuals that received EI had language, reading, and writing scores within the normal range at age 17, even though they discontinued intervention (Rescorla, 2009). It is apparent that EI plays a major role in later outcomes, but some individuals may not have access to these needed services.

Barriers to EI

EI can diminish risk factors and lead to short- and long-term skill improvement, but it is not always available to children that need it. Race, ethnicity, and socioeconomic status can be barriers to EI access. While this framework includes the separation of these factors, it is valuable to recognize the intersectionality of these components, as barriers often build upon one another.

Impact of Race and Ethnicity on EI Access

Access to EI is not consistent across populations, and it is important to understand which populations are underrepresented to improve their access. Race has come to be defined as shared experiences between people based on common ancestry, and this significantly affects the frequency of referral, access, and service use in EI (McManus et al., 2020; Sun, 1995). Not only does race play a role in access, but ethnicity has an impact as well. Ethnicity is complex and individualized, but it can be defined as a person's involvement and sense of belonging within a specific culture (Karlsen, 2003). Ethnic factors can lower the likelihood of disability diagnosis, intervention access, and confidence with the intervention provided (Gallegos et al., 2021; Zuckerman et al., 2017). When race and ethnicity are paired with socioeconomic status, disparities in EI access become more apparent in certain groups.

Impact of Socioeconomic Status on EI

Various factors make up socioeconomic status, but income and educational level are prevalent aspects that impact EI access. Children that come from low-income families were more likely to be diagnosed later in life and less likely to have access to services (Mandell et al., 2002; McManus et al., 2020). This delay/lack of access to services can be detrimental to outcomes, reinforcing the role of socioeconomic factors as barriers to EI. Educational level is another strong component of socioeconomic status that affects access to early intervention. Unfortunately, because EI takes place before age 3, some parents do not know what to look for or are unaware that their child would benefit from receiving services. Socioeconomic status, along with race and ethnicity, can be barriers to EI access and use.

Future research

Given the significant number of individuals that would benefit from receiving EI, more research needs to be done to ensure that all individuals receive necessary services as early as possible regardless of the factors that may restrict access. The impact on success throughout the lifespan has been explored to determine the importance of increasing EI. There are, however, some factors that may act as a barrier to EI services such as race, ethnicity, and socioeconomic status. With the various barriers in mind, overcoming these hindrances is crucial to ensure that all individuals receive proper intervention in a timely manner. In the current literature, there are a few proposed methods to reduce these risk factors such as parent education, programs for at-risk groups, and intervention adaptations for diverse groups. The purpose of this study is to complete more detailed research on programs and their effectiveness to ensure the best possible outcomes for individuals that may not have access to EI.

Research Questions

1. What are the short-term and long-term outcomes associated with receiving early intervention?
2. What are the major barriers to early intervention, and how can they be overcome?
3. How can different programs reduce the negative impacts of these barriers and increase access to EI?

Chapter 2

Short-Term Benefits

Short-term benefits of early intervention (EI) include improvements in the targeted skills, improved social skills, and increased parental understanding. The current literature explores these outcomes in detail.

Targeted Skills

Research has demonstrated that EI is effective when appropriate methods are used. Expressive/receptive language, articulation, and nonverbal communication are all skills that an SLP can target in EI. The early school years are critical in the development of foundational skills that will transfer to future coursework and occupations. When a child begins EI before kindergarten, they have time to improve on the targeted skills; this additional support makes the child less likely to fall behind in school. In a study examining the short-term effects of EI, Girolametto and colleagues (2001) found that most late talkers who received direct intervention from an SLP at age 2 had average speech and language test scores by age 5. EI was shown to significantly increase joint attention skills such as pointing or joint looking for children with autism spectrum disorder (ASD) (Gulsrud et al., 2014). Outcomes vary from person to person, but current research demonstrates improvement of targeted skills through EI services.

Social Skills

Early social skills promote the creation of peer relationships, which are vital throughout the school years. Social skills may be directly targeted in EI, but improvements are often observed even if they are not the direct focus of intervention. Robertson and Weismer (1999) completed a pretest-posttest control group study to determine the immediate effects of EI and examine the skills impacted. They noted that children who received intervention from an SLP had improved social skills, speech intelligibility, and expressive and receptive language. This increase in targeted skills gives the child more confidence and ease when communicating with others, which translates to an improvement in social skills. By 3 years old, children that received EI had fewer behavior problems, and more advanced vocabularies, receptive language, and reasoning skills when compared to a control group (Ramey & Ramey, 2007). In a single-blinded randomized control trial, Hwang et al. (2013) found that children who were at risk for developmental delay got higher scores on goal attainment skills and made faster social skill progress through routines-based EI (RBEI). This type of intervention provides opportunities for caregivers to enhance the environment of their child and increase their early exposure to language (Terrell & Watson, 2018). Additional exposure to speech and language increases the progress a child can make in these areas. The most consistent exposure in a child's life is their caregiver; thus, the role of parents is key in the short-term gains made during EI.

Caregiver Confidence

Caregivers play an important role in a child's life, so it is crucial to examine the effect that EI has on parent behaviors. Kagitcibasi and colleagues (2001) found that parent training produced significant changes in parent behavior with their children. They reported increased caregiver confidence, which creates a positive home environment for further skill development. Attending EI with a competent SLP educates parents on their child's disability and reinforces their role in the intervention process. Bailey and colleagues (2005) found that talking with an SLP about intervention plans made parents feel more confident about their own interactions with their children, and 82% of these parents felt that EI significantly improved their child's life. Some parents reported that they viewed EI as only for their child; however, the most impactful services are family-centered (Auert et al., 2012). Involving the family in the decision-making process and updating them throughout intervention leads to increased commitment and cohesion outside of the therapy room and in the long term. Not only does EI have established short-term benefits, but long-term positive outcomes were also observed in the current literature.

Long-Term Benefits

While the immediate, short-term results of EI are important, long-term benefits exemplify the importance of initiating EI as soon as possible. Not only do children retain the targeted skills, but they also have improved educational and career outcomes compared to those who do not receive EI.

Targeted Skills

Examining the long-term efficacy of treatment demonstrates the high need for EI services as soon as possible. Resclora (2009) examined the long-term effects of EI by following a group of late talkers and matched peers from age 2 to 17. They found that at age 17, there was not a significant difference in language, reading, or writing ability between the late talker group and the matched-peer group. The late talkers exhibited speech and language skills that were comparable to their typically developing peers, indicating that targeted skills do not regress after intervention stops. Additionally, in another study, reading and math achievement were significantly higher for children that attended a general EI preschool program when tested yearly from age 8 to age 21 compared to a group of children who did not attend this program (Ramey & Ramey, 2007). Overall, EI can lead to long-term improvements in the targeted skills. The apparent long-term positive effects of EI manifest in not only the targeted skills but also in the individuals' later outcomes.

Educational Outcomes and Outlooks

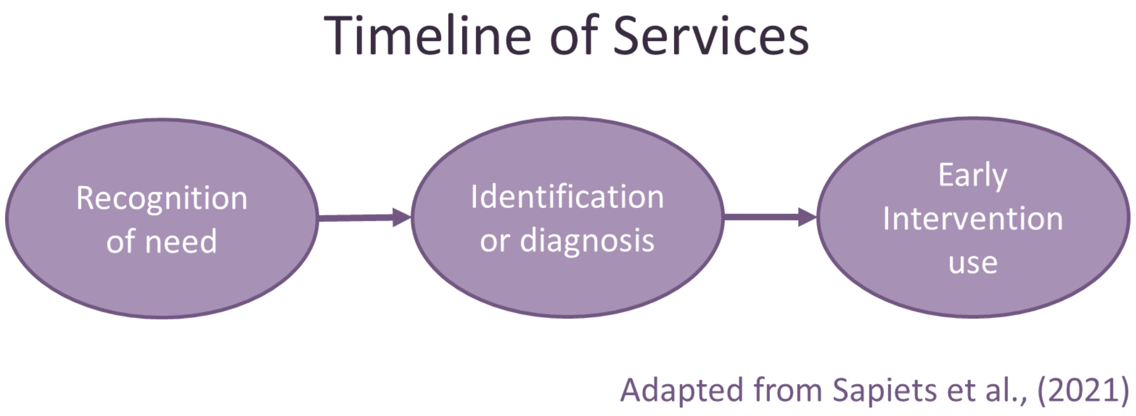
Success throughout the school years can be measured using school grades, involvement in extracurriculars, and attitudes towards school. Kagicibasiet and colleagues (2001) investigated the long-term effect of parent training on the academic achievement of children with EI needs. The treatment group included 90 mothers that underwent parent training when their child was 3 to 5 years old, while the 165 mothers in the control group did not receive any training. 10 years after the program had ended, children in the treatment group had significantly higher school grades, increased vocabulary scores, and were less likely to have failed a year of school when compared to children in the control group. Parent training also impacted children's perceived academic achievement. Children in the treatment group reported higher levels of parents' satisfaction with their success and increased confidence in their academic abilities related to peers (Kagicibasiet et al., 2001). In an additional study by Ramey and Ramey (2007), the long-term effects of an early intervention preschool class were observed. They found that 70% of individuals who attended the program were enrolled in higher education or held skilled jobs compared to only 40% of individuals who were not involved in the program. Additionally, individuals from the intervention group were three times more likely to attend a 4-year university than the control group. These improved academic and career outcomes demonstrate the role of EI in improving higher-level skills later in life. The role of EI programs in short- and long-term academic achievement and perceived success are apparent; however, a considerable number of individuals do not have access to these necessary services. A clear goal of SLPs should be improving EI access and use for individuals that would benefit from services; this becomes possible when the barriers to EI are examined.

Chapter 3

Barriers to Early Intervention

The barriers to EI should be examined at various time points. Figure 2 depicts the process that children go through to receive EI services. Existing barriers may influence the recognition of need, access to a diagnosis, and/or the use of EI services. The varying degrees that race, ethnicity, and socioeconomic status (SES) may hinder each of these three stages should be considered.

Figure 2. Timeline of services



Race and Ethnicity

When examining the availability of EI services, race and ethnicity are key components in understanding the disparities that exist. As earlier defined, race and ethnicity are two separate aspects of an individual's life; however, these factors may influence each other. Racial inequalities are still present in the United States today because of a history of oppression and racism. These inequalities affect access to EI in various ways. Due to a history of mistrust of professionals and lack of access to healthcare services, Black families go to the doctor less frequently than white families (Magnusson et al., 2015). This leaves black children with fewer opportunities for early diagnosis of disabilities or delays. When this group does go to the doctor, providers often attribute parent-reported delays to a cultural difference rather than a clinical need for services (McManus et al., 2020). Invalidation of parents' concerns by healthcare providers may cause a delayed start of EI or may prevent a child from receiving services altogether. Race is a considerable factor that can impact EI access, but ethnicity plays a role as well.

Cultural factors may also influence the likelihood of EI access and use because of different beliefs about disabilities, language barriers, and lack of culturally-competent services. The influence of culture on EI use is reflected in a study done by Woolfenden and colleagues (2015). They found that in some cultures, disability is stigmatized and parents feel guilty or shameful if their child has a disability. Even though parents may suspect that their child would benefit from EI, they may not seek out a diagnosis to avoid societal judgment. This view leads to patterns of underdiagnosis and a reluctance to obtain intervention. The child's needs may not be identified until later which can have long-term negative effects. Cultural and linguistic diversity both affect EI access in a variety of ways. Latino families with limited English proficiency had more unmet therapy needs and were more likely to distrust providers due to language barriers (Zuckerman et al., 2017). Similarly, Gallegos and colleagues (2021) found that children whose primary language was not English were less likely to be diagnosed with developmental disabilities (DD), and of those diagnosed, Black and Hispanic children were less likely to obtain intervention. According to a parent report, lack of appropriate translation was a prevalent issue that affected their opinion on EI (Woolfenden et al., 2015). Parents with a limited understanding of English felt less involved in the referral and treatment processes and were less likely to start or continue services. Those that had access to a translator often felt intimidated or unheard by the professional their child was working with. Cultural differences also influenced the effectiveness of service type and delivery for Latino families. To be effective, programs need to be adjusted to the needs of the individual and their families. However, this has been shown to be a major barrier to EI. Professionals who lack cultural competency do not modify their practice for individuals from diverse backgrounds, making intervention ineffective for these clients (Woofdenden et al., 2015). While race and ethnicity play a central role in the availability of EI services for families, SES also can be a limiting factor.

Socioeconomic Status

Two central aspects of SES are income and educational levels, which each have various subcomponents. Individuals from low-income families are more likely to be diagnosed with a disability later in life (Mandell et al., 2002). Pediatricians are a leading source of referral for EI; however, low-income families may lack the economic resources to take their children to regular doctor appointments (McManus et al., 2020). Less interaction with healthcare providers lowers a child's chance of disability recognition and EI service referral. Educational level is another central aspect of SES that may or may not be related to income level. Moh and Magiati (2012) found that both average monthly income and educational level were significant predictors of EI referral age. Lower income and educational levels were associated with delayed recognition of need. Parents with a lower education level are less likely to recognize their child's need for services, whereas those with a higher education level have a higher capacity to advocate for their child's needs (McManus et al., 2020). Moreover, Magnusson and colleagues (2015) determined that children were significantly more likely to have an unrecognized need for services if their parents had 12 or fewer years of education. Income and educational level both impact referral to EI services, but they also impact the use of services.

After being referred, additional barriers exist for low SES families. Obtaining services can become a substantial financial burden depending on a family's available sources of funding. Insurance type depends on employment and financial status, which leads to disparities for families without adequate resources. In a sample of 457 children, those with public insurance were less likely to use services than privately insured peers (Khetani et al., 2018). Aside from the cost, parents who do not understand the benefits may choose to stop EI services. If the process and timeline for skill development are not clearly explained to parents, they may choose to discontinue services (Chauhan et al., 2017). Although EI is shown to improve outcomes, Zijlstra and colleagues (2021) found that it did not significantly improve the outcomes for all children from low SES immigrant families. This indicates that not only is access to intervention a prevalent issue, but access to culturally-competent EI services is also a notable disparity that connects all three barrier types previously discussed.

Barrier Change Over Time

The number of articles investigating EI access on the basis of race, ethnicity, or SES has increased considerably over the last 10 years. The increase in research indicates additional attention to the issue and a desire to remediate the barriers to EI. While examining articles written over 15 years ago, it is clear that little was known about disparities in EI access. Factors such as race, ethnicity, and SES were not mentioned in these older articles because professionals were not considering their impact on intervention use and efficacy. The current literature, however, includes several variations of these themes. An increasing focus on equity throughout the lifespan has created a need for this research. Each factor of a person's identity affects their likelihood of having access to services, and this will continue to be explored to determine ways to mitigate the barriers. Currently, there are several proposed methods to reduce the barriers to EI and increase access to culturally-competent services, including parent education, the creation of programs, and professional training to address the barriers that exist. These methods should be examined to determine their efficacy for diverse populations.

Chapter 4

Methods that Increase Access

The short- and long-term benefits of EI exemplify the need for increased access to services; however, it is clear that several barriers to these services exist. In the current literature, there are various proposed methods to overcome the barriers to EI including parent education and programs for at-risk groups. Additionally, two practicing speech-language pathologists were interviewed about their experience with EI access and use. The first interviewee (SLP-1) worked in a preschool EI setting with a caseload consisting of individuals with recognized EI needs as well as individuals who were at risk for speech and/or language delays. The second interviewee (SLP-2) is a speech-language pathologist with EI experience in various settings. In addition to her professional experience, SLP-2 is a mother of two children that began receiving EI at 18 months old. Both interviews will be used to identify the barriers to EI and examine the methods of overcoming these barriers.

Parent Education and Involvement

A major barrier to EI relates to parents' understanding of the purpose and benefits of services; this can be addressed through education on available resources, inclusion in the decision-making process, and instruction on strategy use at home. If parents do not have knowledge of disabilities or delays, they may not know that their child would benefit from EI services. If she were not an SLP, SLP-2 believes that her children may not have received services as quickly as they did. Her knowledge of developmental milestones for speech and language increased her ability to advocate for her childrens' EI needs. A parent with less knowledge on milestones or EI may not know to ask a healthcare professional about having their child evaluated. Parent education reduces the frequency of underdiagnosis and gives parents a more complete understanding of the resources available to their families. By learning what EI professionals do, parents may be more inclined to attend sessions and learn strategies. According to SLP-2, the receptivity of parents has a large effect on the efficacy of services because parents play such a central role in EI. For skills to generalize, techniques need to be used in a variety of settings. As parents are more familiar with and invested in the EI process, they can have a bigger role in the decision-making process. Parents can advocate for their child's specific circumstances and give SLPs additional insight. Educating and empowering parents can motivate them to have a more active role in their child's intervention both with an SLP and at home. Parents who spend a considerable amount of time with their children may be good candidates for at-home implementation of strategies. Increasing the exposure of the child to facilitation strategies can improve their overall progress and generalization of skills. Sugden and colleagues (2020) found that parents could accurately implement at-home interventions after attending multiple training sessions with an SLP. Additionally, parents who received instruction from an SLP felt more confident when interacting with their children (Smith & Dillenbeck 2006). Overall, parent education can improve the identification of needs, access to services, and use of these resources. While parent education is impactful, some groups are at a higher risk to have unmet EI needs, and this can be addressed through programs for these populations.

Programs for At-Risk Groups

Race, ethnicity, and SES are three factors that may negatively affect EI access and use, but there are programs designed specifically for these at-risk groups such as Early Head Start, and the Learn the Signs, Act Early programs. Early Head Start programs connect low-income families with the resources their child may need. These programs give additional support to children who may be at risk for speech or language disorders and support around a million families each year (Office of Head Start, 2017). The additional support provided by Early Head Start programs can improve a child's later educational outcomes and give them the necessary support. SLP-1 worked with at-risk children at the preschool level and noted that these programs provided at-risk children with a safe environment for learning and socialization that they may not have had without the program. Learn the Signs, Act Early similarly focuses on the engagement and education of Latinx fathers on developmental milestones (Taylor et al., 2022). This program gives parents the tools to be an advocate for their child's needs. As more programs are developed, more families will have access to quality EI services regardless of their background. Healthcare professionals, like SLPs, also play a role in increasing access and use of EI.

Role of SLPs

Disparity Awareness

Professional development opportunities are key to understanding the barriers to EI and increasing access to comprehensive services. Professionals with more knowledge of risk factors and different backgrounds can more appropriately refer individuals for EI. With these populations, SLPs should be conscientious of adaptations for diverse groups to better serve these typically underserved populations. SLPs that have an awareness of population differences are able to provide more culturally competent services to diverse groups of people. When asked about training, both SLP-1 and SLP-2 were not explicitly taught about risk factors that lead to the underuse of EI services. They both felt that they had to educate themselves on equity and access issues. This exemplifies the importance of training, as an hour of direct teaching on the barriers can increase professionals' competence. Understanding the differences among populations allows professionals to meet families where they are and support them where they can. Latinx families in particular benefit from intervention more if it is adapted to fit their cultural differences (Cycyk et al. 2021; Guiberson & Ferris, 2019). Both SLP-1 and SLP-2 believe that professionals should be very concerned with improving EI access for all individuals. SLPs have a crucial role in ensuring that all individuals have access to the services that they need and supporting families throughout the EI process. Professionals should take these factors into account when completing assessments and providing treatment. Cultural differences impact the behavior and efficacy of certain intervention types, so these need to be considered.

Communication with Families

The way professionals interact with families can impact their responsiveness to intervention. Supportive and competent professionals can ease the worries of families that have a child with a new diagnosis. If their concerns are addressed and validated they may be more likely to continue services. SLP-2 reported that clear communication with EI professionals had a large impact on her perception of the services provided. Keeping families informed allows them to use strategies at home and leads to further generalization. SLPs can also connect caregivers to support groups with other families with similar experiences. Peer relationships can be more comforting and less intimidating than talking to a professional. Research has demonstrated that improving family engagement can minimize the gaps in EI for underrepresented populations (McManus et al., 2020). Communication with families is important as it can significantly improve a child’s outcomes and their family’s perceptions. SLPs have a central role in ensuring that individuals receive competent and family-centered services regardless of race, ethnicity, SES, or any other barrier to EI.

Chapter 5

Reviewing the Benefits of EI

The first 5 years of a child's life are a critical time for brain development, as children are acquiring new skills every day; thus, EI can aid the development of these skills for children who have or are at risk for a disability/delay. Access to EI with an SLP, PT, OT, or other health professional is critical for children with disorders or delays. Foundational skills develop quickly between ages 0 to 3, so identifying their needs and providing intervention is of great importance. It has been demonstrated that starting intervention early in a child's life improves the targeted and untargeted skills later on. Children who receive EI have better speech, language, and social skills than before starting intervention. These improved skills are present after discontinuation of treatment and translate to long-term outcomes such as educational and career-related outcomes. Examining the proven short- and long-term positive impacts of EI exemplifies the need for services as soon as possible.

Barriers to EI

There are several factors that may impact a person's access to and use of EI services. While race, ethnicity, and SES play a considerable role in the access and use of EI services, the various aspects of a person's identity should be considered. To reduce the negative impacts of these barriers, they need to be examined. Race can impact parents' relationship with healthcare providers, as black families are more likely to mistrust doctors. This can lead to less interaction between parents and their child's doctor or a lack of confidence in the services provided. Ethnicity includes a person's culture and language as well as other aspects of their identity. Beliefs about disabilities are different in some cultures, and some cultures view disability in a negative light. These parents may feel guilt or shame, and they are less likely to seek help for their child. A person's first language also can affect their relationship with healthcare providers. The language barrier can lead to misunderstandings of a diagnosis or a lack of support for the parents. Culture involves many aspects of a person's identity; all of which can have a positive or negative influence on their likelihood to receive services. In addition to identity factors like race and ethnicity, social factors--SES--also play a role in access to services. Children from low-income families are more likely to have unmet EI needs due to the financial burden of services. Education level can also be used to predict a child's use of EI services. Children whose parents have a higher level of education are more likely to access and use needed services, while families with lower education levels are less likely to recognize their child's EI needs. When considering EI access and use, these factors interact with each other. Understanding the ways various aspects of a person's identity affect EI access allows for a deeper analysis of ways to mitigate these barriers.

Ways to Increase Access

Several methods to increase access to EI are being implemented, such as parent education and programs for at-risk groups. Parents play a key role in their child's life, so increasing parent education is a cost and time-effective strategy for identifying EI needs. When parents are taught developmental milestones, they will know what to expect from their children. If their child's skills are not progressing at the rate they would expect, they can seek out a professional opinion. Intervention strategies should also be explained to parents to increase their investment in the services provided to their child. Increasing parent education can lead to earlier detection of delays or disorders, increase the efficacy of intervention, and improve parental involvement.

In addition to parent education, several programs have been developed to address barriers to EI such as *Head Start* and the *Learn the Signs, Act Early* program. These programs are designed for children with risk factors for unmet needs and provide them with services they may otherwise lack access to. The *Head Start* program connects low-income families to programs to aid their child's development. *Learn the Signs, Act Early* takes a different approach to increasing access to EI. This program teaches Latinx fathers about developmental milestones to help them recognize their child's needs. Both programs have demonstrated the positive impact of this type of intervention and exemplify the need for support for at-risk children.

Conclusion

With the barriers to EI and methods to reduce their negative impacts in mind, the role of healthcare professionals should be considered. SLPs should continue learning about barriers to intervention and attempt to remove these barriers if possible. Professionals who understand their client's background can better adapt to their unique needs and provide culturally-competent services. Communication with families is another important area for professionals to consider. SLPs should strive to provide family-centered services and involve the family in the decision-making process. This increases the likelihood that a family will continue to seek services for their child and it can increase the caregiver's confidence in working with their child. Healthcare professionals have an important role in increasing access to quality EI services.

Future research should explore ways to increase diagnosis, access, and use of EI. By investigating the factors that reduce a child's likelihood of receiving necessary services, more attention can be given to these at-risk groups. This research could spark the creation of new programs that can improve outcomes for these groups. Future research should examine the state of current programs and propose improvements. This type of research would prevent at-risk children from going without needed services. SLPs should strive to make services more accessible, and advocate for underserved populations in order to provide the utmost care for those in need.

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