2016

Effect of Cultural Values and Family Beliefs on Acceptance of Parent-Implemented Early Intervention For Toddlers With Down Syndrome: A Pilot Study

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EFFECT OF CULTURAL VALUES AND FAMILY BELIEFS ON ACCEPTANCE OF PARENT-IMPLEMENTED EARLY INTERVENTION FOR TODDLERS WITH DOWN SYNDROME: A PILOT STUDY

By

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A Thesis submitted to the
Department of Communication Science and Disorders
in partial fulfillment of the requirements for graduation with
Honors in the Major

Degree Awarded:
Summer, 2016
The members of the Defense Committee approve the thesis of Kylie Kraydich defended on July 26, 2016.

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Abstract

The quality of early intervention services varies between states, and even more incongruence exists between countries around the world (World Health Organization [WHO], 2012). Much of this is due to a lack of broadly accepted recommended and evidence based practices, as well as cultural beliefs about intellectual disability. For infants and toddlers with developmental delays or disabilities, the ability to access early intervention services greatly depends upon family beliefs, socioeconomic status, and geographic location. This research project aims to gather insight into European early intervention providers’ perceptions of current recommended practices for early intervention (EI) in the US. Specific parent-implemented early intervention techniques from Family-Guided Routine Based Intervention (FGRBI) were utilized in this study. Data were retrieved via survey responses from early intervention providers from Romania, the Czech Republic, and Portugal. These responses were analyzed to investigate acceptability of coaching parents of young children with Down syndrome, a common disability that often impacts intellectual, communicative and motor development in young children worldwide. Four providers have participated at the time of publication. Results do not show a decisive trend. This study will continue to add more participants to achieve significant results and provide a more detailed analysis of parent coaching acceptability.


**Introduction**

In the United States, Early Intervention (EI) is a program supported by the US Department of Education in which a variety of services and supports are provided to support the development of infants and toddlers with developmental delays or disabilities and their families (Center for Parent Information and Resources; National Dissemination Center for Children with Disabilities [CPIR], 2014). Areas of intervention include physical, cognitive, communication, social/emotional, and self-help skills. Intervention is provided by a variety of specialists, including educators, nurses, social workers, speech-language pathologists, occupational therapists and physical therapists. Ideally, intervention is embedded in the family’s everyday routines and settings, including their home and community early care and education programs. The organization and quality of services offered vary between states, and even more so between countries around the world (WHO, 2012). Programs such as those in Finland are available and fully funded for all children and families at birth or detection of need, while other countries such as South Africa have little to no service available. Early intervention, like many other community services, is largely shaped by governmental laws, resources and regional guidelines. This has resulted in a lack of consistency and accountability across states and nations (Guralnick, 2001).

The availability and coordination of EI services can be partially attributed to the cultural values and belief systems at work within a geographic location or people group. This project will explore the implementation of EI with specific attention to the EI provider’s perception of the acceptability of parent participation in implemented intervention. Study of this specific
component within the greater issue will predict if this type of EI can be accepted as a recommended practice in a given region.

The importance of this project lies in its design to evaluate providers’ opinions of early intervention techniques cross-culturally. The purpose of this type of analysis is to provide a more objective understanding of an effective approach in early intervention by examining what is likely to be accepted on a global scale, as compared to just one nation. By determining the impact of the acceptance of techniques proposed in the FGRBI project, the conclusions of this study will add to the knowledge and awareness of the connection between beliefs about family members’ capacity to support learning in their children and early intervention service delivery. Exposing early intervention professionals to a parent-implemented approach will add to their knowledge of alternative therapy practices and family-centered intervention techniques. By observing these techniques through the video clips presented, they may be inspired to adopt aspects of these techniques in their own practices. Increasing the knowledge of EI providers in this way will increase the potential for improvement in children with or at risk for disabilities and delays. The survey responses and resulting analysis serve to enrich the understanding of communication disorders, as well as culture and family relations. This pilot project also serves to identify the viability of conducting research using video with EI providers in other countries.

**Previous Literature**

**Evolution of EI in the United States and Europe**

The foundation of Early Intervention can be traced back to 17-18th century European philosophy. Comenius (1592-1670) proposed the idea that mothers are the most appropriate source of education during the first six years of a child’s life. He also promoted learning through spontaneous play. These concepts are part of his “School of the Mother” approach to development and are core ideas within early education practices today. Locke, another
influential philosopher, popularized the “tabula rasa” theory. This theory states that children are born with minds like blank slates and are highly influenced by the experiences of their first years. This theory challenged the previously held belief that behavior is genetic and predetermined. Early education during this time period was heavily influenced by strict religious principles and enforced rigid rules and punishment to correct the “sinful nature” of children. During the 1800s, the first kindergarten programs were established in Germany and soon inspired similar programs in the United States (McLean, Sandall, & Smith, 2016).

As support for early education grew in the US, differing opinions about educational priorities and curricula began to compete for approval. As early intervention evolved through the 19th and 20th centuries, stronger support for a laissez-faire approach to child development was advocated by philosophers such as Rousseau, Tolstoy, and A.S. Neill. The laissez-faire method is characterized by adjusting a child’s early education based upon the natural interests and activities of the child. Opposing stances on early education continue to battle for acceptance in the educational programs of today. The main divide in modern philosophy centers around early academic performance versus noncompetitive social and emotional growth.

The behavior towards children with intellectual disabilities in the context of education’s evolution is of important focus for this study. Beginning in ancient times, children with disabilities were often killed, imprisoned, left to be street beggars, or otherwise institutionalized. During the early 1800s, institutions for people with intellectual disabilities were established throughout the world and soon spread to the United States. During this time, the US adopted the philosophy of Edouard Seguin for special education programs. Seguin advocated the prioritization of a child’s individual strengths and weaknesses within a design of sensorimotor activities to be practiced for improvement in specific disabilities. Seguin also emphasized the
importance of early education, especially for the intellectual advancement of disabled children. Today, Seguin is considered one of the first early interventionists and a pioneer in the field of special education.

In the early twentieth century, the philosophy of American special education services shifted from a focus on integration into community life, to careful supervision and isolation of disabled people. This time was characterized by discrimination and exclusion based upon harsh psychological doctrines, which caused a regression from the previously positive outlook on special education services. After World War II, American public opinion shifted again to value the importance of special education services. This was partially due to testing of military personnel that revealed many of them to have physical, mental, and behavioral challenges. This soon prompted legislative changes that allowed greater access to special education services during the 1950s (McLean, Sandall, & Smith, 2016). In the 1970s, an “Identify and Help” attitude emerged in the US and still continues today. This approach focuses on screening for delays and disabilities in early childhood and prescribing programs to lead children to reach their full potential as soon as possible (Shonkoff & Meisels, n.d.).

Central Theories in Early Intervention

**Nature vs. Nurture.** Widely popular across the field of psychology, the debate of nature vs. nurture is a core element of early intervention (Shonkoff & Meisels, n.d.). The maturationist viewpoint, promoted by the work of pediatrician and psychologist Arnold Gesell, supports the belief that behavior is biologically predetermined. Gesell believed human development could be reliably predicted based upon early childhood milestones. Early intervention opposes this viewpoint, instead advocating for the positive effects of therapy in early childhood. Aligning with the principles of behaviorism, early intervention arises from the belief that, excluding significant brain damage, child development is largely determined by experiences during this
critical period of life. The debate of biological determination against conditioning and environmental manipulation continues to be disputed in the study of child development today. However, evidence suggests that development cannot be wholly attributed to either biology or environment. Rather, the ability of a child is determined by a combination of natural and social factors (Guralnick, 1997).

**Importance of Early Relationships.** Studies show that depriving a child of human interaction in early life leads to adverse cognitive and socioemotional consequences (Sameroff & Chandler, 1975). Evidence shows that any child, regardless of natural biological ability, will be stunted in many areas of development if early relationships are not developed. However, the effects of such isolation have been shown to decrease upon being placed in a responsive and stimulating environment. Early intervention is designed to support this concept by promoting the involvement of disabled children in community integration and positive social settings. The degree to which biological risk factors are reduced has been found to be highly related to the presence of caring and constructive early relationships.

**Current Early Intervention Practices**

To understand the current design and purpose of early intervention services in a country, a basic background knowledge of its people and customs is necessary. Many of the previously described early childhood theories and approaches to early intervention have been developed by leaders from different countries with divergent philosophies and governmental influences, resulting in varying acceptance of the approach. The following sections illustrate a few of the key features of current early intervention practices found in the countries invited to participate in this study.
Early Intervention in the United States. Early intervention services for young children identified with disabilities in the US are provided in accordance with a law referred to as “Part C”; a section of the broader Individuals with Disabilities Education act (IDEA) (U.S. Department of Education, 2004). This law was created with the understanding that disabilities do not reduce the rights of a person or lessen their value in society and that improvement in the education of children with disabilities is a national responsibility. Part C guarantees that EI services are made available to all children in every state and territory of the US and broadly defines the requirements necessary for a child to qualify for EI services (U.S. Department of Education, 2004). Within these broad definitions, each state establishes its own criteria for who receives EI (CPIR, 2014). Although great advancements have been made in recent decades, the effectiveness of this law is still hindered by low expectations for disabled children and a lack of focus on evidence-based learning techniques. Currently, the growing population of limited English proficient children in the US poses a challenge to EI programs as there are often discrepancies in the referral and provision of services for this group in particular. Increased numbers of minority children have led to possible misdiagnosis of disability within this demographic (Aaron & Loprest, 2012). This misdiagnosis is often due the lack of standardized tests that can accurately reflect the abilities of limited English speakers or speakers of non-standard dialects. This may cause those that need additional services to not receive them, as well as cause those that do not need special education to be placed in these settings (Rosenberg, Zhang, & Robinson, 2008; U.S. Department of Health and Human Services, 2001). Overall, the availability and quality of EI services also varies depending on individual state and local policies (CPIR, 2014). Current recommended practices in US early intervention include the use of family-centered and capacity building practices based upon the belief that the family is the
child’s first and most important source of nurturance and teaching (Dunst, Bruder, & Espe-Sherwindt, 2014). Building the family’s capacity to support their child’s learning within everyday routines and activities as they occur will result in the development of the child’s functional skills while increasing participation with the family and lessen the need for specialized services directed at the child’s deficits (McWilliam, 2014). The role of early intervention service providers in the US has increasingly become to serve as a coach to the parents and other caregivers, supporting their ability to engage the child’s learning across the day in the family’s typical activities and natural environment, rather than in child-directed therapies in clinical settings (Shelden & Rush, 2001). This approach is advocated for and has an emerging evidence base for all types and severities of disabilities and family constellations (Dunst, & Trivette, 2008; Mahoney, Kemp, & Turnbull, 2014; Perales, Wiggers, & Herman, 2006).

**Early Intervention in Spain.** Since the introduction of early intervention, Spain has gradually implemented a psychodynamic approach. This approach assumes that all behavior is determined (has a cause) and is greatly shaped by unconscious motives and childhood experiences (McLeod, 2007). In this system, the professional is considered an expert who serves to guide parents in the pursuit of intervention goals. Current evolution of the field is characterized by growing support of a family-focused approach in lieu of the child-centered model (Gine, Vilaseca, Gracia, & Garcia-Die, 2004). Though the family-focused approach is present in Spain, its principles have not yet been adopted by the country in total. The spread of family-focused therapy is expected to be a slow shift as it travels through the various social, economic, and political realms of the country (Robles-Bello & Sánchez-Teruel, 2013).

Interventionists are expected to provide parents with education and training to counteract adverse results of the child’s disorder, as well as to provide support in the therapy process.
Children who have intellectual delays or disorders in Spain can be met with resistance when gaining access to quality intervention services due to lack of coordination between local and national governments. Because of this disorganization, the geographic area in which a family resides often determines the type and quality of available therapy (Robles-Bello & Sánchez-Teruel, 2013).

Families do not have the option to choose which EI center or program their child attends because legislators assume an equal experience will be had at any EI establishment. This is due to EI centers’ lack of specialization in particular disorders, in favor of a general approach to EI. It is also characteristic of EI providers in Spain to focus on building a relationship with caregivers in order to obtain any information relevant to the child’s intervention, as opposed to using questionnaires and standard protocol. Because this process is not systematic, the potential to disregard helpful information about family interactions is high compared to programs which practice standardized methods. Spain has created legislation to regulate EI. However, these laws are recent and have not completely solved the issue of service coordination. As a nation, Spain continues to research EI methods and develop more effective regulations.

**Early Intervention in Portugal.** EI first began in Portugal with the creation of a group consisting of members from the Ministries of Education, Solidarity and Social Security, and Health in 1994. This group developed the EI model for the first legislation specifically devoted to EI for children ages 0 to 6 years with disabilities or at risk for severe developmental delay, and their families. This legislation was unique in European EI and was an important turning point in the establishment of Portuguese EI services. The legislation included aspects from the Developmental Systems Model proposed by Guralnick. This model is designed to guide the
implementation of EI programs for vulnerable children and their families. It focuses on emphasizing family interaction through consistent integration and inclusion (Guralnick, 2001).

EI services in Portugal are impeded by a lack of uniform approach in strategy. Even though it is a small country, it is characterized by much asymmetry between its regions. This has resulted in disorganization, as well as a lack of reliability (Pinto, et al., 2012). No valid, universal measurements for diagnosis and therapy exist in Portugal which means EI services vary depending on the geographic location of participants (Pinto, et al., 2012). However, work with US researchers and practitioners is increasing the adoption of EI services similar to those seen within the IDEA Part C system (Boavida, Aguiar, & McWilliam, 2016).

**Early Intervention in Ukraine.** Ukrainian culture has been greatly influenced by the period of USSR rule. Ukraine operated under brutal conditions enforced by the USSR for several decades until gaining independence in 1991. However, democracy and growth have not been attained due to a continued tradition of state control. Recent protest attempts have been violently repressed and armed conflict between the Ukrainian government and separatists supported by Russia continues to cause turmoil within the country. The nation also suffers from a high infant mortality rate and abandonment or institutionalization of children due to family poverty and other hardships (Central Intelligence Agency, 2016).

Under Soviet rule, people with disabilities were often institutionalized with few to no rights. Today, Ukraine has improved laws regarding the treatment of people with disabilities, resulting in a higher quality of life as compared to the Soviet era. Specifically, the country is working to enhance early intervention, education, and community involvement for disabled children. This effort is still in its early stages, leaving many children inadequately cared for and instead placed in orphanages. Institutionalization continues to be practiced due in great part to
the fact that very few families have access to government funding and those that do are insufficiently funded. This continued practice towards children with intellectual disabilities is also due to limited parent knowledge about benefits and options for raising children at home instead of placing them in institutions. Despite a continued reliance on orphanages, early intervention centers have been established in the hopes of changing the Ukrainian approach to children with disabilities (Justice, 2007.)

Parenting in the Eastern European region has been greatly shaped by the Soviet Union. Under Soviet rule, the government emphasized state responsibility of child-rearing (Nesteruk & Marks, 2011). This traditional reliance on government education has resulted in many of today’s families placing low value on parenting skills or having little interest in enriching this area. In this region, it is generally found that early education programs have low coverage and are administered by the public sector with therapist and educators seen as the experts and parents as observers of intervention services (Janson, Emily Vargas-Barón et al, 2008).

**Early Intervention in Romania.** Similar to Ukraine and the larger Eastern European region, Romania still retains elements left behind by the USSR. Under the dictatorship of Nicolae Ceausescu, the Romanian government was deemed the “father of all the nation’s children” (Leon, 2011). During this time, birth control and abortion were outlawed, which forced parents to place children in state care. After an economic collapse, the orphanages were unable to care for their children. After the dictatorship was removed, “tens of thousands” of Romanian children were discovered to be living in inferior, poor-quality orphanages. In response to international pressure, the Romanian government introduced new child protection legislation, but many institutions are still operating today (Leon, 2011). Several projects have recently studied children who are institutionalized in Romania. One such project observed
positive central nervous system growth in Romanian children who were previously institutionalized and then adopted into foster homes, compared to those who remained in institutions (Marshall et al., 2008). Traditionally, Romania has relied on public care for children. However, movement towards “family reunification” is gaining support in the country (Leon, 2011).

**Significance of the Problem**

The use of family centered capacity building strategies has been investigated in the US and several systematic reviews have shown that parents can effectively use communication strategies and supports with positive effects on their children’s communication outcomes (e.g., Kaiser & Roberts, 2013; Kashinath, Woods, & Goldstein, 2006; Roberts & Kaiser, 2012). The interventions examined in these studies were based on the belief that parents have an instrumental role in their children’s language development and that by teaching parents to use specific communication interaction and support strategies, children learn to use their communication functionally within their natural environments. Roberts and Kaiser (2011) conducted a meta-analysis of 18 parent-implemented communication intervention studies. The children in the studies ranged from 15 to 77 months and were diagnosed with primary language impairments (11 studies) and secondary language impairments (7 studies), including autism spectrum disorder (ASD), Down syndrome (DS), and developmental delays (DD). Children receiving parent-implemented interventions had positive, significant effects for expressive language when compared with nontreatment groups ($g = 0.82, p < .01$). When parent-implemented and therapist-implemented interventions were compared, child language outcomes were similar or slightly higher for children receiving parent-implemented interventions. Intervention strategies common across effective studies included (a) responsiveness to child
communication, (b) expanding child communication, (c) enhancing the type of language input, and (d) balancing parent and child communication to establish reciprocal supportive communication exchanges (Roberts & Kaiser, 2011).

As noted previously, Part C stipulates that early intervention services and supports are designed to build the families’ capacity to support their children’s development and are to be provided in their natural environments, including both physical locations (i.e., setting) and the family’s routines and activities. This approach necessitates a dramatic shift from the teacher or therapist directly interacting with the child and designing systematic instruction on prescribed goals and objectives. While parents are thought of as a child’s first and primary teachers, many parents do not have knowledge or skills of how to best teach their child, especially when the child has a significant disability such as Down syndrome (McWilliam, 2014). A family-guided routine-based intervention (FGRBI) parent coaching approach includes parents as integral decision makers and collaborators in how, where, and when the intervention is implemented (Kashinath et al., 2006; Woods, Kashinath, & Goldstein, 2004). Interventions using a parent coaching approach focus on the triadic interaction of the interventionist supporting the bidirectional parent–child interactions. FGRBI is an approach to parent-implemented intervention designed to explore and demonstrate implementation of evidence-based communication intervention within the framework of community-based systems. FGRBI was a model demonstration project that was designed to provide a systematic approach to both the content being taught to the parents (i.e., the intervention itself) and the process in which the parents were taught to use the intervention. Specifically, parents were coached to use communication intervention strategies embedded in their everyday activities. The central tenets of FGRBI include arranging the environment to promote communication, responding
contingently to a child’s communication, imitating the child’s actions, giving the child specific and targeted language input, and using a prompting procedure to elicit specific child targets. FGRBI focuses on the use of responsive communication strategies within family identified and preferred everyday routines and activities to promote functional communication (Kashinath et al., 2006; Brown & Woods, 2015; Woods et al., 2004). FGRBI builds on the natural sequence and rhythm of everyday home and classroom routines to offer the child frequent opportunities to communicate and to generalize new skills throughout the day in the child’s everyday learning environments. A systematic approach to coaching the caregiver has been developed to guide the early intervention provider in the use of adult learning and relationship based practices (Friedman, Woods, & Salisbury, 2012). FGRBI and the coaching framework that supports it have been investigated in a series of single case designs, quasi-experimental designs, and most recently, a randomized control trial and found to be effective at supporting caregivers to teach children communication skills at home and in child care. The purpose of this study was to examine the acceptability of the approach for early intervention programs from other countries. The current investigation proposed to answer the following research questions:

Research Question 1: Do EI providers observing videos of young children with Down syndrome and their mothers participating in FGRBI with a triadic parent coaching model believe the intervention/support from the parent is appropriate and sufficient to teach the child new communication and participation skills?

Research Question 2: Do EI providers observing videos of young children with Down syndrome and their mothers participating in FGRBI with a triadic parent coaching model believe the amount of coaching provided by the early interventionist is sufficient for teaching intervention strategies to the parent?
Research Question 3: Which naturalistic communication intervention strategies used by the parent to support the child’s communication initiations and responses during play and everyday routines do EI providers observing videos of young children with Down syndrome and their mothers participating in FGRBI with a triadic parent coaching model identify the most?

Method

Participants

Eight early intervention professionals from the Ukraine, Portugal, Spain, Romania, Czech Republic, Belarus, and Brazil who were familiar with the faculty advisor were invited to participate in the study and to recommend other early intervention professionals who could meet the inclusion criteria of having the ability to read written English and understand spoken English and were active providers of early intervention services with children and families in their country. Fourteen providers expressed interest and submitted their email credentials to FSU for enrollment in the project. They indicated their consent through the Blackboard website before completing the study. At this time, four have completed the study. Details of their demographics are included in Table 1.
Table 1

**Participant Demographics**

<table>
<thead>
<tr>
<th></th>
<th>Participant 1</th>
<th>Participant 2</th>
<th>Participant 3</th>
<th>Participant 4</th>
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<td>Portuguese</td>
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<td>Sessions</td>
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<td></td>
<td></td>
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<tr>
<td></td>
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<td>University</td>
<td>Association for Early Intervention</td>
<td>NPO</td>
</tr>
<tr>
<td>Length of Employment at Current Position</td>
<td>2 months</td>
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<td>3 years</td>
<td>-</td>
</tr>
<tr>
<td>Total Time Worked in EI</td>
<td>10 years</td>
<td>20 years</td>
<td>3 years</td>
<td>10 years</td>
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<tr>
<td>Average Hours Per Week Working in EI</td>
<td>7</td>
<td>6</td>
<td>40</td>
<td>8</td>
</tr>
</tbody>
</table>

**Setting and Stimuli**

Videos and surveys were presented to participants via the Florida State University Blackboard system (BB). A specific BB course site was created for this project. The Kaltura video player was used to access video clips and the survey function was used to formulate corresponding surveys for each video. The observations and related surveys were expected to take no more than two hours. Once enrolled in BB, no problems were reported utilizing the video or surveys.

**Videos**
Participants observed 12 clips, each 3-6 minutes in length. The videos showed segments of parent-implemented early intervention sessions in which an EI, caregiver, and child with Down syndrome were present with the caregiver taking the lead in the intervention process and the EI as a coach. Each participant rated the intelligibility of each video to ensure that the responses were not related to the EI provider’s use of English.

Surveys

After observing each clip, the participant was prompted to complete a survey relating to the video. Each of the 12 surveys included 8 multiple choice questions. The surveys included 7 opinion scale questions that asked the viewer to agree or disagree with a set of statements to provide information to answer Research Questions 1 and 2 and 1 multiple answer question that asked participants to select which naturalistic teaching strategies they observed, if any, to answer Research Question 3. After completing the 12 video surveys, participants were instructed to complete an additional demographics survey that asked participants about their cultural identity, education, experience with early intervention, clientele demographics, and predictions about acceptability of parent-implemented early intervention within their caseload.

Data Collection and Analysis

Raw frequencies for each question type specific to each video were extracted from the survey grading feature. Data analysis included data reduction of the participants’ responses to each closed response question (i.e., multiple choice or rating scale questions) to provide summary statistics. Responses were summarized with frequencies, percentages, and means. While it was planned that mean differences of ratings across children would be examined with paired samples t-tests, the small sample prohibited statistical analysis.

Expected Outcome
It was expected that professionals within each country would have a generally positive opinion in support of parent-implemented early intervention. Though each country faces challenges in the journey towards establishing sufficient education for children with disabilities, there are growing trends of improvement for EI in all countries analyzed in this study. The general attitude towards children in need of special education and the role of the family is greatly varied and was expected to directly affect their acceptance of the presented naturalistic teaching strategies.

Based on cultural similarities of Spain and Portugal with the US, it was predicted that these countries would be the most receptive and have a greater potential for feasibility of the presented techniques. Because of the likeness in democratic government and western values, it was assumed that the increased commonalities between these countries and the US would allow for a smaller cultural barrier and less obstacles in acceptance of parent implemented intervention. Early intervention programs in these countries have been established, but it appears that they present challenges similar to those in the US, in which provision of services lacks uniformity and organization amongst its inner regions. Therefore, it was expected that the western European nations would express a greater rate of approval and prediction of acceptability for parent-implemented therapy than the eastern European countries.

Results

Early Intervention professionals from three European countries responded to a series of surveys following their observation of 12 clips, each 3-6 minutes in length. The videos showed segments of parent-implemented early intervention sessions in which an EI, caregiver, and child with Down syndrome were present and engaged in a triadic interaction. Videos in the segments received a ranking as understandable with a response of agree or strongly agree with the
exception of two videos, one of which the participants disagreed as to whether the video was understandable.

**Scaled Responses**

Participants rated the intervention clips in terms of (a) appropriateness and sufficiency of parent strategy use, (b) interventionist coaching of parents, and (c) type of communication intervention strategy used.

**Research Question 1.**

*Parent strategy use.* Participants rated parent use of appropriate intervention strategies/supports for the child’s learning, whether the amount of intervention/support from the parent was sufficient to teach the child new communication/participation skills, and whether the parent’s actions were sufficient to support the child’s responses, at 3.83. With the scale of 1-5 with 3 as neutral, the averages trended toward agreement across all clips for the four participants.

Participant 1 averaged 3.25 for the 12 videos. Averages for Participants 2-4 ranged from 3.6 to 4.4. Participant 4 had the highest average of 4.35 with Participants 2 and 3 at 3.8. Variability was most noted in Clip 2 with two participants disagreeing and two strongly agreeing that sufficient and appropriate opportunities were provided. This clip was rated as understandable.

**Research Question 2.**

*Interventionist coaching of parents.* Participants rated whether the amount of teaching provided by the early interventionist was sufficient for teaching intervention strategies to the parent at 3.94. Participant 1 agreed that the coaching for three child/parent dyads was adequate, neither agreed nor disagreed for two dyads, and disagreed for one dyad. Participant 2’s average of 3.7 reflected agreement or strong agreement on three dyads and neutral on the other three.
Participant 3 at 4.25 and Participant 4 with an average of 4.3 either agreed or strongly agreed on all dyads. Participants agreed that one child/parent dyad, videos 3 and 4, received the least amount of coaching, particularly in video 4.

**Predicted acceptability.** Participants rated whether parents in their caseload would be likely to accept the implementation used in this video and concurred that they would with an average of 4.2. Averages across the four participants ranged from 3.9 to 4.4. Scores were 4 or 5 for the six dyads but varied based on the routine shown in the video. Table 2 includes reported interest in a parent-implemented therapy approach. Additional information for research questions 1 and 2 is included in Table 3.

Table 2

<table>
<thead>
<tr>
<th></th>
<th>Participant 1</th>
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</tr>
</thead>
<tbody>
<tr>
<td>Families in my region of practice would be willing to use a parent-implemented therapy approach.</td>
<td>4</td>
<td>4</td>
<td>5</td>
<td>4</td>
</tr>
<tr>
<td>I am interested in using a parent-implemented therapy approach in my own practice.</td>
<td>5</td>
<td>4</td>
<td>5</td>
<td>4</td>
</tr>
</tbody>
</table>

*Note.* Ratings were on a scale of 1-5. 1: Strongly Disagree, 2: Disagree, 3: Neither Agree nor Disagree, 4: Agree, 5: Strongly Agree.
Table 3

*Participant Average Survey Responses*

<table>
<thead>
<tr>
<th></th>
<th>Participant 1</th>
<th>Participant 2</th>
<th>Participant 3</th>
<th>Participant 4</th>
</tr>
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<tbody>
<tr>
<td>The parent used</td>
<td>3.36</td>
<td>3.91</td>
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<td>4.41</td>
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<td>appropriate intervention</td>
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<tr>
<td>strategies/supports</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>for the child’s</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>learning.</td>
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<td></td>
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<td></td>
</tr>
<tr>
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<td>3.75</td>
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<tr>
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<tr>
<td>from the parent was</td>
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</tr>
<tr>
<td>sufficient to teach</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>the child new</td>
<td></td>
<td></td>
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<tr>
<td>communication/participation</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>skills.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>The amount of</td>
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<td>4.33</td>
</tr>
<tr>
<td>teaching provided by</td>
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<td></td>
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</tr>
<tr>
<td>the early interventionist</td>
<td></td>
<td></td>
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<td>was sufficient for</td>
<td></td>
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<tr>
<td>teaching intervention</td>
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<tr>
<td>strategies to the</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>parent.</td>
<td></td>
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</tr>
<tr>
<td>Parents in your</td>
<td>4.25</td>
<td>4.41</td>
<td>4.41</td>
<td>3.91</td>
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<tr>
<td>caseload would be</td>
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<tr>
<td>likely to accept the</td>
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</tr>
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<td>implementation of the</td>
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</tr>
<tr>
<td>strategies used in this</td>
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</tr>
<tr>
<td>video.</td>
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</tr>
</tbody>
</table>

*Note.* Ratings were on a scale of 1-5. 1: Strongly Disagree, 2: Disagree, 3: Neither Agree nor Disagree, 4: Agree, 5: Strongly Agree.

**Research Question 3.**

*Naturalistic Communication Intervention Strategies Identified as Used by the Caregiver.* Participants tallied the numbers and types of evidence based naturalistic communication intervention strategies used by the parent to support the child’s communication initiations and responses within each video clip. Early Intervention providers were able to identify many of the communication strategies that parents were coached to use with their children during play and everyday routines. All participants identified strategies for each dyad in each clip. Participants identified 21 strategies in video 1. Video 2 had 19 strategies. Video 3 had 14 strategies. Video 4 had 12 strategies. Video 5 had 27 strategies. Video 6 had 24 strategies. Video 7 had 18 strategies. Video 8 had 21 strategies. Video 9 had 24 strategies. Video 10 had 23 strategies. Video 11 had 17 strategies and video 12 had 23 strategies. The
Identification of strategy use by video is illustrated in Table 3. The most frequently identified intervention strategies were modeling, reinforcement, wait time and following the child’s lead. Choice questions was used the least. “No strategy” was never used to identify any video. The total frequency of strategy use as identified by participants is illustrated in Tables 4 and 5.

Table 4

<table>
<thead>
<tr>
<th>Strategy Use as Identified by Participants in Each Video</th>
<th>Video 1</th>
<th>Video 2</th>
<th>Video 3</th>
<th>Video 4</th>
<th>Video 5</th>
<th>Video 6</th>
<th>Video 7</th>
<th>Video 8</th>
<th>Video 9</th>
<th>Video 10</th>
<th>Video 11</th>
<th>Video 12</th>
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<tbody>
<tr>
<td>Child</td>
<td>H</td>
<td>H</td>
<td>I</td>
<td>I</td>
<td>J</td>
<td>J</td>
<td>K</td>
<td>K</td>
<td>L</td>
<td>L</td>
<td>E</td>
<td>E</td>
</tr>
<tr>
<td>Age in Months</td>
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<td>6</td>
<td>18</td>
<td>32</td>
<td>12</td>
<td>24</td>
<td></td>
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<td>4</td>
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<td>Reinforcement</td>
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<td>2</td>
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<td>Contingent Imitation</td>
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<tr>
<td>Total</td>
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<td>19</td>
<td>14</td>
<td>17</td>
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<td>18</td>
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<td>23</td>
<td>17</td>
<td>23</td>
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</table>

Table 5

<table>
<thead>
<tr>
<th>Total Strategy Use as Identified by Participants</th>
<th>Total Frequency</th>
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<tbody>
<tr>
<td>Strategy Type</td>
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<td>Expansions</td>
<td>26</td>
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<tr>
<td>Modeling</td>
<td>37</td>
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<tr>
<td>Wait Time</td>
<td>33</td>
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<tr>
<td>Open Questions</td>
<td>18</td>
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<tr>
<td>Choice Questions</td>
<td>5</td>
</tr>
<tr>
<td>Following the Child’s Lead</td>
<td>30</td>
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<tr>
<td>Environmental Arrangement</td>
<td>24</td>
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<tr>
<td>Reinforcement</td>
<td>35</td>
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<td>Contingent Imitation</td>
<td>15</td>
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<tr>
<td>Prompting</td>
<td>20</td>
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<tr>
<td>None</td>
<td>0</td>
</tr>
</tbody>
</table>
Discussion

Perceptions of the European EI providers on the appropriateness and sufficiency of parent implemented intervention, the acceptability of coaching, and the types of communication intervention strategies that were identified is limited by the small sample size overall and more specifically, within any one country. However, it is interesting and encouraging that the EI providers did agree the coaching approach was one they would be interested in using and would use with each of the six children in the study. Because of the small sample size, no conclusions can be made regarding EI responses based on the age of the child or the types of routines and activities that were illustrated. It is interesting to note that coaching that occurred during all types of routines including play, caregiving, daily chores and social interaction was rated as acceptable and sufficient for learning to occur by the parent and child.

The participants varied in their responses between dyads and examples. This result is viewed as positive in that the participants were able to differentiate the frequency and type of interventions they were observing within these brief clips. Unfortunately, there can be no conclusions drawn about whether or not culture, beliefs, or system guidelines have an impact on this variability. It is good to note that the videos did elicit a range of judgment and perceptions of the EIs. This supports the information from previous literature that indicates there is variability in beliefs about EI in providers from different regions.

EI’s identified many of the communication intervention strategies that were used by the parents during the video clips. This is important because previous research has indicated that not all EIs believe that parents are able to learn to work with their child and that their use of intervention embedded into everyday routines and activities will not be sufficient for the child to learn (McWilliam, 2014). Additional data could determine whether EI providers believe certain routines or strategies are more acceptable and/or productive for caregiver implemented
intervention than others, as has been the case in the US (Kemp & Turnbull, 2014). For example, in the US, Kemp and Turnbull found that providers rate play routines as more conducive to EI than other routines.

Once enrolled, the Blackboard platform was used successfully by the participants without reports of problems using video or responding to the survey. Two videos were not reviewed by one participant. It is unknown whether they were overlooked or if time was a factor. The process of enrolling the participants was lengthy, multi-step and required emails from different individuals and programs at FSU. Participants reported emails were filtered to their spam, not received or deleted because the sender was unknown. Participants were instructed to watch for emails from FSU IT but the process ranged from contact overnight to a delay of three weeks. Once approved to enroll by FSU IT, an additional contact was required in the Blackboard program to add participant names. Administrators of EI programs in the Czech Republic and the Ukraine reported that while interested, the delays in startup resulted in providers not being available due to vacation schedules and agency breaks. EI providers needed to use agency computers and Internet to connect to the Blackboard site. While disappointing for this study, this information is valuable for the continuation of the study with these and other countries. Additional questions that specifically differentiate about the ages and significance of the child’s disability should be added to begin to identify if there are features of the parent-implemented intervention that are more or less acceptable for EI providers. Open-ended responses on culture and beliefs of the EI providers and the families they serve will enrich future investigations.
Appendix A

Procedure

1. Each participant was added as a user to the Florida State University Blackboard website.

2. Participants accessed Blackboard where they were provided with information about the project and given instructions to complete their involvement in the study.

3. Participants gave informed consent via Blackboard before beginning the study.

4. Participants watched 12 videos and answered corresponding surveys.

5. Participants completed a demographic survey.
Appendix B

Definitions

**Early Intervention:** a program in which a variety of services are implemented in the development of babies and toddlers with developmental delays or disabilities (Early Intervention, Then and Now). Areas of intervention include physical, cognitive, communicative, social/emotional, and independent living skills.

**Early Interventionist:** provider of early intervention therapy. An EI is typically a speech-language pathologist, occupational therapist, or other early childhood special educator.

**Parent implemented intervention:** early intervention approach in which therapy techniques typically performed by an interventionist are instead practiced by the parent or other caregiver of a child. Its purpose is to increase the amount of intervention a child receives on a daily basis by educating the child’s caretakers in its implementation. This approach will be presented to the subjects of this study in order to predict feasibility in their respective locations.

**Embedded Practices and Intervention with Caregivers (EPIC):** an early intervention program that focuses on caregiver implemented therapy strategies in embedded learning opportunities for infants and toddlers with disabilities in everyday life (EPIC). By analyzing the interactions between speech pathologist, parent, and child, EPIC aims to determine the most effective strategies in parent-implemented therapy.

**Individuals with Disabilities Education Act (IDEA):** law that guides the implementation of early intervention and other special education and related services in the US for children with disabilities from birth to age 21 (Center for Parent Information and Resources, 2014).
**Part C:** section of the Individuals with Disabilities Education Act (IDEA) that specifically establishes early intervention services for children in every state and territory in the United States.

**Child with a disability:** According to Part C, “...a child with mental retardation, hearing impairments (including deafness), speech or language impairments, visual impairments (including blindness), serious emotional disturbance (referred to in this title as 'emotional disturbance'), orthopedic impairments, autism, traumatic brain injury, other health impairments, or specific learning disabilities; and who, by reason thereof, needs special education and related services” (U.S. Department of Education, 2004).

**Down Syndrome:** a cellular abnormality characterized by the presence of a partial or complete extra copy of chromosome 21 in all or some of their cells (What Is Down Syndrome?). This extra genetic material within cells typically results in mild to severe cognitive delays. According to the National Down Syndrome Society, “Approximately 400,000 Americans have Down syndrome and about 6,000 babies with Down syndrome are born in the United States each year.” Video clips of children with Down Syndrome, ages 0-3, who participated in the EPIC project, will be used to gather data for this study.

**Caregiver Coaching:** the methods an interventionist uses to guide caregivers as they learn how to implement intervention techniques with their child. It is defined as, “An adult learning strategy in which the coach promotes the learner's (coachee's) ability to reflect on his or her actions as a means to determine the effectiveness of an action or practice and develop a plan for refinement and use of the action in immediate and future situations” (Kemp & Turnbull, 2014).
**Cultural Values and Beliefs:** ideas held by a group of people about what is true; what characteristics support the ideal way of life. This includes both religious and secular viewpoints and attitudes that are dominant throughout a society. This concept is key to understanding the behavior and identity of a culture- the specific influence of culture as it affects the perception and intervention of intellectual disorders and delays will be examined in this study.

**Naturalistic Teaching Strategies:** methods used by EI's to help clients achieve behavior and communication goals in therapy

- **Expansions/Recasts:** adding words onto the child’s communication attempt
- **Modeling:** adult performs target behavior for child before asking him/her to repeat
- **Expectant Pauses/Wait Time:** waiting for the child to respond with correct behavior
- **Open-Ended Questions:** asking the child a question which has no single correct response
- **Choice Questions:** asking the child to choose between given options
- **Following the Child’s Lead:** adult joins the child’s actions, interactions, and play, encouraging the child to initiate communication and next steps or actions for play
- **Environmental Arrangement:** organizing the therapy environment to encourage target behaviors
- **Reinforcement:** something that increases the likelihood of a behavior, reinforcement can be positive or negative
- **Contingent Imitation:** adult responds to child’s behavior in a way that repeats the child’s correct behavior
- **Prompting:** signaling the child to do or say something
Appendix C

Survey Questions

All questions were presented via Blackboard. Participants were allowed to answer questions in any order and could save the survey to return to it later and revise.

Question 1 Opinion Scale
The parent used appropriate intervention strategies/supports for the child’s learning.
- Strongly Agree
- Agree
- Neither Agree nor Disagree
- Disagree
- Strongly Disagree
- Not Applicable

Question 2 Opinion Scale
The amount of intervention/support from the parent was sufficient to teach the child new communication/participation skills.
- Strongly Agree
- Agree
- Neither Agree nor Disagree
- Disagree
- Strongly Disagree
- Not Applicable

Question 3 Opinion Scale
The balance of turn-taking between parent and child was appropriate.
- Strongly Agree
- Agree
- Neither Agree nor Disagree
- Disagree
- Strongly Disagree
- Not Applicable
Question 4 Opinion Scale
The amount of teaching provided by the early interventionist was sufficient for teaching intervention strategies to the parent.
- Strongly Agree
- Agree
- Neither Agree nor Disagree
- Disagree
- Strongly Disagree
- Not Applicable

Question 5 Opinion Scale
The parent's actions were sufficient to support the child’s responses.
- Strongly Agree
- Agree
- Neither Agree nor Disagree
- Disagree
- Strongly Disagree
- Not Applicable

Question 6 Multiple Answer
Which naturalistic communication intervention strategies or supports did you observe the parent using? Select all that apply.
- Expansions/Recasts
- Modeling
- Expectant Pauses/Wait Time
- Open-Ended Questions
- Choice Questions
- Following the Child's Lead
- Environmental Arrangement
- Reinforcement
- Contingent Imitation
- Prompting
- None of the Above
Question 7 Opinion Scale
The conversation in this video was understandable.

- Strongly Agree
- Agree
- Neither Agree nor Disagree
- Disagree
- Strongly Disagree
- Not Applicable

Question 8 Opinion Scale
Parents in your caseload would be likely to accept the implementation of the strategies used in this video.

- Strongly Agree
- Agree
- Neither Agree nor Disagree
- Disagree
- Strongly Disagree
- Not Applicable
Appendix D

Demographic Questionnaire

All questions were presented via Blackboard. Participants were allowed to answer questions in any order and could save the survey to return to it later and revise.

Question 1 Age:

Question 2 Gender:

Question 3 Ethnicity:

Question 4 Primary language:

Question 5 Languages used in early intervention sessions:

Question 6 Highest level of education completed:

Question 7 Degree area and type:

Question 8 Primary Employer:

Question 9 Length of employment at current position:

Question 10 Total time worked in early intervention:

Question 11 Average hours per week working in early intervention:

Question 12 Opinion Scale
Families in my region of practice would be willing to use a parent-implemented therapy approach.

- Strongly Agree
- Agree
- Neither Agree nor Disagree
- Disagree
- Strongly Disagree
- Not Applicable
Question 13 Opinion Scale
I am interested in using a parent-implemented therapy approach in my own practice.

- Strongly Agree
- Agree
- Neither Agree nor Disagree
- Disagree
- Strongly Disagree
- Not Applicable
References


