PICO: For treatment of children ages 0-3 with developmental delays in the early intervention program, is family-centered natural environment therapy more effective than traditional therapy in a clinical environment to help the child reach their motor development milestones?

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| Title/Author/  Year/  Study design | Purpose | Subjects | Intervention | Results | Conclusion | Comments |
| Investigation of the Effects of a Model of Physical Therapy on Mother-Child Interactions and the Motor Behaviors of Children With Motor Delay  Chiarello LA, Palisano R  1998  RCT | To test the effects of home- based physical therapy provided through motor play on mother-child interactions and the motor behaviors of children with motor delay.  5 | 38 mothers and their infants and toddlers aged 6 to 34 months | The experimental group received five home-based sessions of physical therapy. Mother-child interactions and infant behaviors were measured from video tapes using the response class matrix before and after intervention. | Mothers in experimental group demonstrated ↑ in the proportion of intervals in which they held their children in an appropriate manner (P<.05).  Mothers of children in the experimental group demonstrated ↑ in directive behaviors from 21.4% to 33.1 % and the mothers of children in the control group demonstrated ↓ from 26.1% to 21.6% (P<01). | Because mothers in the experimenal group showed increased directivene-ss reflected the mothers' abilities to incorporate therapeutic strategies into play and to direct their children to participate in play activities that were developmentally challenging. | Teaching parents therapeutic interactive play during home based physical therapy can assist mothers in becoming more directive in their incorperation of benificial activities into everyday play. |
| Early Intervention for Disabled Infants and Their Families: A Quantitative Analysis  Jack P Shonkoff and Penny Hauser-Cram  1987  Meta-analysis | to determine the effects  of ei programs, and if they differ by the location in which they take place (home based versus center based) or the amount of parental involvement  8 | 31 studies | existing literature was analysed on the effects of early intervention services on disabled children younger than 3 years of age and their families. | Programs with parent involvement showed significantly ↑effects than those with little or no planned parent participation (P = .002).  Programs that targeted their efforts on parents and infants together were significantly more successful than those that work with either parent or child in isolation ( P = .03). | The most effective programs are those that work with parents and children together and are equipped to serve youngsters with a variety of disabilities using a structured approach to intervention. | Supports using a family centered approach to therapy that involves the parents and children working together to achieve best results. |
| Pediatric Physical Therapy in Infancy: From Nightmare to Dream? A Two-Arm Randomized Trial  Cornill H. Blauw-Hospers, Tineke Dirks, Lily J. Hulshof, Arend F. Bos, Mijna Hadders-Algra  2011  RCT | to investigate the effects of a recently developed family centered pediatric physical therapy intervention program [COPCA] on the development of infants at high risk for developmental disorders  6 | 46 infants, 21 in the COPCA family centered program and 25 in the traditional physical therapy program | The intervention was given to all participants from 3 to 6 months of chronological age. The  COPCA program was applied 2x a week for 1 hour in the home situation.. In the typical physical therapy group, intervention was applied at a frequency of 1x a week | The neurological condition at 3, 6, and 18 months in the COPCA  and TIP groups showed no significant difference.  The amount of time spent on coaching the caregiver showed a positive correlation with the total functional ability score of the PEDI at 18 months ( P .007).  COPCA-related variety of treatment was associ-ated with a positive outcome on the domain of mobility of the functional skills scale ( P .004) | 3 components of COPCA—(1) parent coaching, (2) challenging the infant  with a wide variation  (3) stimulation of motor behavior at the limit of the infant’s capabilities—were associated with improved developmental  outcome | Supports the incorporation of parental coaching in treatment sessions  Suggests therapy techniques involve a variety of different activities to challenge the infant  Provides an example of a successful family centered intervention program |
| Relationship of Therapists' Attitudes, Children's Motor Ability, and Parenting Stress to Mothers' Perceptions of Therapists' Behaviors During Early Intervention  Margaret E O'Neil, Robert J Palisano, Sarah L Westcott  2001  Cross Sectional | To investigate the relationship of therapists' attitudes, children's motor abiltity, and parenting stress to mothers' perceptions of physical therapists' family centered behaviors during early intervetion services.  3 | 25 physical therapists and 75 mother-child dyads (3 from each therapists case load). | All patients had been receiving family-centered early intervention for at least 3 months. Measures taken were mothers' perceptions of physical therapists' behaviors (MPOC-56), parental stress level (PSI-SF), infant motor development (Bayley-II Motor Scale), and therapists attitude (MPOC-SF). | There was an inverse relationship between mothers' perceptions of family centered behaviors and parenting (P<.05).  Parenting stress was inversely associated with children's motor ability (p< .01),  As mothers' stress increased their perceptions of physical therapists' behaviors related to enabling and partnership decreased. | The researchers concluded that most mothers agreed that the therapists were providing family centered care, and were happy with the results of that care. That physical therapists agreed with the family-centered care shift, and found that it allowed the families to be more involved in the treatment process. They also concluded that therapists who provide family-centered care that treats the parent as an equal can lessen the parental stress | Showed that family centered care services were liked by parents.  Supports treating the parent as an equal partner in their child’s care to decrease parental stress. |
| Early Intervention: Meeting the Unique Needs of Parent-Child Interaction  Winifred Schultz-Krohn  1997  Case Study | To use three case studies to illustrate the use of an intervention model that focuses on fostering the development of family relationships as a means of meeting identified outcomes from an individualized family service plan.  9 | 3 children all receiving services in the 0-3 early intervention program. Ages 3 months, 2years 3 months, and 2 years 4 months | Interventions varied based on individual child's goals and progress. They focused on family goals with fine motor skills such as self care and eating activities. | All children made progress towards developmental goals, and all families were happy with the results of therapy. | The researcher concluded that each interaction model was family focused but also was effective in fostering skill development in the child. Enhancing parent-child interaction in these three cases resulted in improved skills in all three identified children. | Provides specific examples of the use of family centered care within the home environment.  Supports the involvement of all family members (including siblings) in the therapy sessions  Encourages teaching proper interaction skills to all family members during therapy sessions that can easily be incorporated into everyday life. |
| Parent Education in Early Intervention: A Call for a Renewed Focus  Gerald Mahoney, Ann Kaiser, Luigi Girolametto, James MacDonald, Cordelia Robinson, Philip Safford, and Donna Spiker  1999  Review of Literature | To propose that the early intervention field address the concerns expressed about the lack of sensitivity in parent education approaches, develop strategies for parent education, address the need for explicit instruction of service providers in parent education strategies, and conduct research on the immediate and long-term effects of parent education on children and families.  7 | No sample, but the article focused on treatment of children ages 0-3 | No intervention, but the article reviewed suggests that therapy take place within the child/parent natural environment, and involve parental education. | The article resulted in a review of literature that pointed out the importance of treatment in the natural environment, and of educating parents to carry out specific strategies, instruction, and interaction with their children as a central  feature of early intervention. | The authors concluded that parental education is an integral part of early intervention, and that more research and implementation of these practices are needed. | Supports the importance of parental education into treatment sessions.  Points out the need for continued research in this area.  Suggests that for best results therapy sessions should be carried out in the child/parent natural environment. |
| Characteristics and Consequences of Everyday Natural Learning Opportunities  Dunst CJ, Bruder MB, Trivette CM, Hamby D, Raab M, and McLean M  2001  Cross Sectional Study | to assess the characteristics and consequences  of natural learning environment interventions for infants,  toddlers, and preschoolers with delays or disabilities.  10 | 63 children and their parents or primary care givers | study had 18 sessions and consisted of 2 weeks  of preintervention interviews, observations, and measurements, and 16 weeks of intervention (responsive teaching session) and ongoing data  collection. Participants also maintained daily logs  of whether their children participated in the natural environment settings selected as sources of learning opportunities. | The presence of more favorable natural environment setting characteristics was associated with  more rapid rates of  child learning activities and increased parent/child play opportunities.  responsive teaching  methods were associated with more positive affective behavior and more positive child behavioral style (p< .05) | Researchers concluded that these findings supported the theory that children’s interests, engagement, exploration,  and mastery would be the best predictor of variations in  the outcomes of everyday natural learning opportunities.  They also stated that to be effective, activity must take place on a regular basis over an  extended period of time for developmental con-sequences to be realized. | Supports the use of a variety of natural environment settings in treatment (home, backyard play equipment, park, etc)  Supports that intervention within the natural environment involve activities which are interesting to the child.  Suggests that through teaching parents and caregivers learning opportunities within their natural environments that they can learn to incorporate these opportunities into regular activities to help their child reach their developmental potential. |
| Inﬂuences of Contrasting Natural Learning  Environment Experiences on Child,  Parent and Family Well-Being  Dunst CJ, Carol MT, Hamby DW, and Bruder MB  2006  Cross Sectional Study | to determine  if different ways of implementing natural learning environment practices  had like or un-like effects on child, parent, and family well-being  11 | 801 parents and other primary caregivers of children under the age of three receiving  IDEA early intervention services. | completed 1 of 2 surveys: 1. rate the extent to which early intervention practitioners implemented  services in activity settings (Early Intervention in Activity Settings) or  2. indicate the extent to which everyday activity  settings were used as sources of learning opportunities (Activity Settings  as Early Intervention) | the use of everyday family  and community activity settings as sources of natural learning opportunities  was associated with enhanced child, parent, and family positive well-being  and decreased child and parent negative well-being. | Results demonstrating a positive relationship between activity settings and early intervention and  the well-being outcomes add to the body of evidence indicating that natural learning environment practices have desirable benefits for both  children and their parents | Supports the use of everyday activity settings to improve learning opportunities during treatment sessions.  Suggests that incorporating everyday activities into therapy can improve overall well-being for the family. |
| First Experiences With Early Intervention: A National Perspective  Bailey DB, Hebbeler K, Scarborough A, Spiker D, Malli S  2004  Cross Sectional Study | To determine families’ initial experiences with early intervention, interactions with medical professionals, effort required to obtain services, and participation in planning for services. | 3338 parents of children with or at risk for disability, who were receiving early intervention services under Part C of IDEA | Each parent/primary caregiver completed a 40 minute telephone interview within 16 weeks from the start of services. The interview consisted of asking for characteristics of the child, characteristics of the family, early identification, initial services being provided, and perception of the early intervention experience. | 93% of the respondents indicated that therapy services were excellent or good Less than 1% reported that the quality of services was poor.  81% of respondents indicated that the decisions were made jointly by families and professionals, 12% reported professionals making most of the decisions, and 8% reported family members as making most decisions.  77% of respondents felt that their involvement in the decision making was right, and 22% wanted more involvement. | The authors concluded that the US early intervention system operated under Part C of IDEA provides a positive and supportive entry into services for the majority of families enrolled. The concluded that early intervention services help families feel that they have a role in making decisions about their child’s health and goals, and that parents do want to be involved in care. | This article supports the early intervention system from a parent’s point of view, and provides insight into parent’s perception of the system.  This article shows that parents like to be involved in their child’s treatment sessions and helping with plan of care. |
| Family-Centered Early Intervention for Infants and Toddlers With Disabilities  Tomasello NM, Manning AR, Dulmus CN  2010  Literature Review | To describe family centered care within early intervention, its relationship to the Individualized Family Service Plan, and its relationship to service coordination by early intervention practitioners. | This was a literature review of 34 articles that were related to the concept of family centered care within the early intervention system. | No intervention, but the article suggests that a family centered care model should be used by all early intervention practitioners. | This article resulted in a literature review that defined family centered care, and pointed out its importance and barriers within the early intervention system. | The authors concluded that family centered care is an essential component of high-quality early intervention services, and that is allows families to make informed decisions about their child’s evaluation and treatment. They encourage early intervention practitioners to acknowledge the family as the expert of the child’s development. | This article points out the psychological stress that families can experience when raising a child with a disability, and suggests that through a family centered care model that early intervention can work with families for best results. |
| “Let Me Jus Tell You What I Do All Day…” The Family Story at the Center of Intervention Research and Practice  Bernheimer LP, Weisner TS  2007  Longitudinal Study | To show that professionals who ask parents about their everyday life with their child can plan and implement interventions that will better support the family’s daily routine. | 102 families with children with disabilities were followed for 15 years | Children were aged 32-55 months upon entry to the study. All families were interviewed initially to tell their story in 2-3 hour sessions. The interviews focused on identifying lifestyle accommodations that the family made for their child. Follow up interviews were done at ages 3,7,11,13, and 16. | Parents reported that accommodations to life style were made secondary to the hassle level that a particular activity had.  Families who reported making more accommodations had children with more severe medical conditions.  Parents reported that while gathering information on how to help their child was important, it had limited value unless it could be easily integrated into their everyday routine. | The authors concluded that no intervention, no matter how well designed, will have an impact on the child if it cannot find a place in the daily routines of the family. The intervention must fit into the existing practices already in place for best results. | This article shows that no home exercise plan will be beneficial to the child unless the family can easily work it into their everyday routine for best results. It shows that by talking and listening to the parents an early intervention provider can learn how to tailor the child’s treatment plan to work for the family as a whole. |
| Everyday Family and Community Life and Children’s Naturally Occurring Learning Opportunities  Dunst CJ,  Hamby D, Trivette CM, Raab M, Bruder MB  2000  Cross sectional study | To identify, develop, and evaluate strategies and approaches for increasing the number and intensity of naturally occurring learning opportunities in early intervention practice. | 3300 parents and caregivers of infants and toddlers with or at risk for developmental delays were conducted on naturally occurring learning opportunities | . One group (N=1560) completed a survey on community life as a source of learning, and another (N=1723) completed a survey of family life as a source. | Results indicated that both family and community life were each made up of 11 different categories of learning opportunities.  Family opportunities included: family routines, parenting routines, plan activities, entertainment activities, family rituals, child routines, family celebrations, literacy activities, socialization activities, physical play, and gardening activities.  Community opportunities include: family excursions, recreational activities, family outings, children’s attractions, play activities, community activities, outdoor activities, art/entertainment activities, church activities, organizations/groups, and sporting activities | The authors conclude that natural learning environments are not just places, but also experiences afforded children in the context of activity settings that make up the fabric of family and community life. | This article shows that treatment within the natural environment can occur in a variety of places (in both the home and community) and should take advantage of natural learning opportunities within these settings that the family encounters on a regular basis |
| Constructing Daily Routines: A Qualitative Examination of Mothers with Young Children with Disabilities.  Kellegrew DH  2000  Case study | To examine the factors that influence the ways in which mothers construct daily routines for their young children with disabilities | Six families, with seven children, were included in this study. Children ranged in age from 28-32 months and were all receiving early intervention services | Unstructured audiotaped interviews were conducted with each mother on the family’s daily routines and ecological challenges. Self-care routines for each child were videotaped, and dressing and mealtimes observed. More in-depth interviews were performed throughout a 2 month period. | Dressing took place on the floor for 4 children and on a changing table for 3 children, children dressed on the floor were more active in dressing process.  All children were more independent in mealtime activities than dressing activities.  The values mothers placed on self-care routines appeared tied to their goals for their child’s future.  A mother’s vision of her child’s future played a pivotal role in the types of daily routines constructed. Some mothers reported difficulty envisioning future possibilities available to their child. | The authors concluded that therapy services should strive to promote clearer maternal understanding of the child’s present and future potential to help them create home routines that promote development. | This study shows the importance of involving the parents within treatment sessions. It is important to observe the family’s normal routines, educate them on future milestones, and help them to meet those milestones through a program that works well with their current lifestyle. |