

Title:

Effects of Early Intervention on parenting stress after preterm birth: A meta-analysis.

Running head: Early Intervention and parenting stress on preterm

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Abstract:

Background: Preterm infants have a higher risk of development disorders. Prematurity can be considered a source of stress, in both children and their parents, due to the high number of interventions that they require. Early Intervention (EI) programs have shown to have a positive influence on the neurodevelopment of children with neurological risk. On the other hand, parenting stress has a negative influence on the development of any child. This systematic review aimed to identify the effect of EI Programs on decreasing parenting stress suffered by parents of preterm babies.

Methods: Systematic Review and meta-analysis of experimental studies in accordance with the PRISMA Declaration guidelines.

Results: Fifteen randomized clinical trials were included whose methodological quality was assessed using the PEDro scale. Stress data extraction was meta-analyzed using the inverse variance method in a random effects model. Statistical heterogeneity was assessed with the I^2 heterogeneity statistic. The domains most commonly reported in the trials were the childcare-related stress (Child Domain), personal discomfort (Parent Domain) and computation of both (Total Stress). The results showed significant ($p < 0,05$) and clinically relevant differences in favor of the Early Intervention Program group at 18 months and 5 years.

Conclusions: This review found moderate to strong evidence of the impact of EI programs on the reduction of parenting stress in parents of preterm babies. These findings offer useful insights regarding the delivery of current support and the development of future family interventions. Finally, recommendations are provided for future intervention evaluation studies in this area.

Key words: Early Intervention; preterm birth; parenting stress disorder; systematic review.

Introduction

Preterm babies are defined as born alive before 37 weeks of pregnancy are completed (World Health Organization, 2015). The arrival of a preterm baby is often a traumatic time (Alfaro Blazquez, Ferrer Ferrandiz, Gea Caballero, Corchon, & Juarez-Vela, 2019). In comparison with children born at term, preterm babies have a higher risk of developmental disorders (Moore, Berger, & Wilson, 2014; Schoeni, 2015). This population is likely to benefit from participation in stimulation programs (Johnson, 2007). Newborns of less than 32 weeks gestation or weighing less than 1500 g are usually referred to the Early Intervention (EI) services (Pallás Alonso et al., 2018).

EI is understood as the set of interventions for children aged 0-6 with developmental disorders or at risk, for their families and environment (Federación Estatal de Profesionales de Atención Temprana, 2005).

Over the last decade, a child-centred approach without parents' participation has been gradually transformed into one in which such participation is considered fundamental (Bricker, Xie, & Bohjanen, 2018; Dalmau et al., 2017; Movahedazarhouligh, 2019; Peacock-Chambers, Ivy, & Bair-Merritt, 2017).

From the parents' view, the birth of a preterm baby involves uncertainty regarding its possible complications in its development (Beeghly et al., 1995). Preterm babies have difficulty in establishing social interactions, and this affects the mother-child relationship (Als, Heidelise, Duffy, & McAnulty, 1988; Cox, Hopkins, & Hans, 2000).

For this reason, it is important to intervene in the relationship between parents and children from the neonatal period. By actively involving the parents in the maturation

process, positive bonds are created that enhance the development of the baby and attenuate their stress levels (Brazelton, 1994).

Psychological stress can be due to the result of the interaction between the subject and their environment, which they perceive as threatening or endangers their well-being (Garthus-Niegel, Ayers, Martini, von Soest, & Eberhard-Gran, 2017; Lazarus, 1966; VandenBos, 2007). Parenting stress is a process in which the parents feel overcome by the responsibilities of their parenting role (Abidin, 1992; Webster-Stratton, 1990).

Parental stress has been associated with less successful self-regulation (Choe, Sameroff, & McDonough, 2013; Tu et al., 2007), influencing the quality of life of children during their early years (Eiser, Eiser, Mayhew, & Gibson, 2005; Lee, Hwang, Chen, & Chien, 2009). Lee et al., related the quality of life of these parents directly to the stress they suffer, which in turn influences the quality of life of infants in pre-school age (Lee et al., 2009). Tu et al., identified maternal stress as a modulator in the capacity of the premature new-born to recover from their anguish related to childhood pain (Tu et al., 2007).

Many publications focus on monitoring preterm babies after hospital discharge. The goal of this paper is to review the literature on EI programs that impact on the reduction in parenting stress suffered by the parents of a preterm baby. Likewise, the effectiveness of these programs will be determined by analysing their methodological quality and performing a meta-analysis whose results will result in the improvement of the EI interventions carried out with these families.

Methods

This review has been prepared in accordance with the PRISMA Declaration. The study was registered in PROSPERO: ID143458.

A bibliographic search was carried out to identify the published studies of interest on parental stress of preterm babies on an EI program. The databases of Medline (Pubmed), Scopus and Web of Science were systematically consulted during September of 2020, using combinations of keywords, MeSH terms and applying search limits (Figure 1).

FIGURE 1

The eligibility of all the studies found in the databases was evaluated independently based on the selection criteria defined according to PICO (Huang, Lin, & Demner-Fushman, 2006). Those articles whose study population were parents of preterm babies were included. As an intervention, an EI program supervised by a health professional in which the parents, father or mother were actively involved in the treatment, was chosen. The usual care provided to this population was considered as a comparative intervention or control group. By definition, EI involves a parent intervention, thus this commonality makes them comparable. Although treatment approaches and objectives may differ from one program to another depending on the characteristics of the child, all of them must considerer the family as the object of intervention and not only the child.

Those articles whose intervention was performed only at the hospital level were excluded. The main variable analyzed was the level of stress suffered by the parents associated with prematurity.

Only publications of the Randomized Clinical Trial (RCT) study design were included. The search was limited to those articles written in Spanish, English or French. No dates of publication restrictions were applied.

Two reviewers (AJ, MA) independently examined the title and summary of each article for inclusion and read the full text, to find out whether there was any ambiguity

regarding its eligibility. In case of discrepancy, the authors agreed to subject it to the analysis of an independent advisor (CB) in order to decide on its final inclusion.

Two reviewers (AJ, MA) independently assessed the methodological quality and risk of bias in the studies, using the PEDro (Physiotherapy Evidence Database) scale (De Morton, 2009), based on the Delphi list (Verhagen et al., 1998). In case of discrepancy, a third reviewer (CB) verified and resolved the disagreements.

The RevMan-5 software was used to synthesize and analyze the data. Standardized mean difference and its 95% Confidence Interval (CI) were used as a measure of the effect size. For the meta-analysis, the inverse variance method was used in a random effects model. Statistical heterogeneity was assessed with the I^2 heterogeneity statistic. If I^2 was greater than 50%, moderate-high heterogeneity was considered. The effect size was considered significant when the z statistic (overall effect) was significant (p-value <0.05).

Results:

Fifteen articles were included. Figure 2, following the model of the PRISMA statement shows the process of selecting the studies, the number of excluded studies and the reason for exclusion.

FIGURE 2

The total number of participants included in this review was 1683, of whom 842 received an EI-based intervention, which corresponds to 50.02% of the total sample. The mean gestational age was 29.71 (1.45) weeks, and the birth weight 1349.37 (285.67) grams.

Regarding the choice of intervention, the most used method, specifically in five studies, was the standardized Mother-Infant Transaction Program (MITP) (Kaaresen, Ronning, Ulvund, & Dahl, 2006; Kaaresen et al., 2008; Landsem, Handegard, Tunby, Ulvund, & Ronning, 2014; Newnham, Milgrom, & Skouteris, 2009; Ravn et al., 2012). The second method in order of choice was the Newborn Individualized Developmental Care and Assessment Program (NIDCAP), implemented in three articles (Als, H. et al., 2003; van der Pal, S M et al., 2007; Van et al., 2008). For each of the remaining studies, a different method was applied: Triadic Parent-Infant Relationship Therapy (TRT) (Castel et al., 2016), the Infant Behavioral Assessment and Intervention Program (IBAIP) (Borghini et al., 2014; Meijssen et al., 2011), Steps EI Program (Borghini et al., 2014), Parent-Baby Interaction Program (Glazebrook et al., 2007), Primary Care Triple P (Schappin, R. et al., 2013) and the Intervention Program (Cues) (Feeley et al., 2012; Zolkowitz et al., 2011). In all of them, parents of children are considered as a part of the intervention programs.

The most commonly used scales to assess parental stress level were the Parenting Stress Index (PSI) (Als, H. et al., 2003; Glazebrook et al., 2007; Kaaresen et al., 2008; Ravn et al., 2012; Schappin, R. et al., 2013; van der Pal, S M et al., 2007), with its corresponding short version PSI-SF (Castel et al., 2016), and its validated versions in Dutch namely the Nijmeegse Ouderlijke Stress Intex (NOSI) (Meijssen et al., 2011; Van et al., 2008) and NOSIK (short version) (Van et al., 2008).

The assessment of risk of bias showed a median score of 6 (on the PEDro scale), indicating a high methodological quality and a low risk of bias in the articles included in the review.

Table 1 summarizes the assessment of the methodological quality of the RCTs. It should be noted that all the studies included specified the eligibility criteria. Although

the 15 articles reported on the way in which randomization was carried out, the most frequently recurring biases were related to the hidden allocation of the groups (Als, H. et al., 2003; Feeley et al., 2012; Glazebrook et al., 2007; Landsem et al., 2014; Meijssen et al., 2011; Newnham et al., 2009; Schappin, R. et al., 2013; Zelkowitz et al., 2011), and the masking of patients and therapists, which did not occur in any of the studies. On the contrary, masking of the evaluators was applied in most of the studies, with the exception of the work of Landsem et al. (Landsem et al., 2014), Castel et al. (Castel et al., 2016), Meijssen et al. (Meijssen et al., 2011), Schappin et al. (Schappin, R. et al., 2013) and Van der Pal et al. (Van et al., 2008).

TABLE 1

Of the 15 RCTs included, in 11 of them, corresponding to 10 studies (Figure 2), we were able to extract the data of the mean and standard deviation of the stress suffered by the parents of premature children when they underwent an EI program compared to a treatment of usual care. Outcome measures to assess parental stress, regardless of the scale or questionnaire used to evaluate it, in addition to giving the values of the total score of the scale used in each case, divide said score into subscales or domains. The main domains used in the trials were stress derived from child care (Child Domain), personal distress (Parent Domain) and a computation of both (Total Score). Some studies included a fourth subscale, evaluating the influence of such stress on the situations of the parents' daily life (Life Domain) and a fifth one, which assesses the relationship between parents and child (Interaction Domain). This grouping is the one that has been established to meta-analyze the studies, so that in Table 2 the results of the meta-analysis of the total score are shown and in Table 3 the results can be observed by domains.

Some of the included studies present the data of the mothers and / or parents separately and others do not distinguish which parent answers the questionnaire. There is diversity in the time points measured over time. That is why, at the time of meta-analyzing the data extracted, at each moment of measurement it can be seen that the effect size for mothers and fathers is provided separately and jointly whenever possible. The effect size was calculated based on the standardized mean difference (SMD). (Tables 2, 3).

TABLE 2

TABLE 3

Table 2 shows the results obtained from the meta-analysis of the total stress score of the parents with a broad time point measure range ranging from 2 weeks to 9 years. It is worth mentioning the statistically significant differences between the control group and the experimental group from 18 months post-intervention and up to 7 years. All these shows a greater stress reduction (total score) in the experimental group, that is, the group on the receiving EI. The maximum differences between the two groups are given at 18 months and at 5 years. The effect size of the PSI scale was -1.36 [-1.82, -0.91] at 18 months and -0.61 [-0.87, -0.35] at 5 years, although in both cases the responses of the mothers and fathers of the same study were grouped. It should be noted that the time point with a significant effect (-0.36 [-0.58, -0.15]) and larger sample size ($n = 344$) and in which more than one article is included is at 2 years' post-intervention. I^2 was greater than 50% at 6 months and where we considered only the mother's group at 2 years.

The assessments of the Child Domain and the Parent Domain range from 2 weeks to 9 years post-intervention (Table 3). In both domains there is a significant reduction in stress in favor of the group that has performed an EI between 18 months and 7 years, and in the case of the Parent Domain this is already given after 12 months. In both

domains, the maximum stress reduction occurs at 5 years, where the effect size on the PSI scale is -0.69 [-0.94, -0.43] and -0.41 [-0.66, -0.15] respectively. It is important to note that the meta-analysis with a significant effect size (-0.29 [-0.58, -0.11]) and with a greater number of studies and subjects (n = 370) included is that of the evaluation of the Parent Domain at 12 months, although not all studies use the same measurement scale. I^2 was greater than 50% only at 12 months in both domains and at 9 years for the Parents Domain.

The Life Domain data of the PSI scale can only be extracted from two Randomized Clinical Trials. One of them performs the assessment at 2 weeks (Als, H. et al., 2003), and the other at 2 years (Table 3) (Kaarensen et al., 2008).

The assessments of the Interaction Domain of the PSI-SF scale are made at 3 and 18 months and at 9 years post-intervention, being statistically significant in favor of the EI group only at 18 months (Table 3). I^2 was greater than 50% only at 12 months and 9 years.

No publication bias was found in any of the meta-analyses performed (p-value > 0.05 in the Egger test). The number of studies included did not allow studying the publication bias through a Funnel Plot. We carried out a Funnel plot analysis only for the Total Score at 12 months and the result was that there was no publication bias.

Discussion

Having a baby is associated with a variety of stressors, change and adjustment (Ayers et al., 2019; Garthus-Niegel et al., 2017). Although prematurity can be exclusively considered a birth complication and not as a source of stress in itself (Schappin, R. et al., 2013; Schappin, Renske, Wijnroks, Uniken Venema, & Jongmans, 2013), many authors have studied the relationship between these two variables (Borghini et al., 2014;

Castel et al., 2016; Choe et al., 2013; Kaaresen et al., 2006; Landsem et al., 2014; Meijssen et al., 2011; Sabnis et al., 2019; Tu et al., 2007; Van et al., 2008).

In this paper, we attempt to determine the effect on the reduction of parental stress levels of an intervention based on an EI program compared to usual care provided to parents of preterm baby. This question has been addressed in different studies where the authors have taken measures at 3, 6, 12 and 18 months, 2, 3, 5, 7 and 9 years of life of the boy (Castel et al., 2016; Feeley et al., 2012; Glazebrook et al., 2007; Landsem et al., 2014; Ravn et al., 2012; Schappin, R. et al., 2013; Van et al., 2008; Zelkowitz et al., 2011). In these studies it is concluded that a specific EI program attenuates the adverse effects of parenting stress and influence positively on the quality of life of preterm babies (Eiser et al., 2005; Lee et al., 2009; Tu et al., 2007).

It is important to emphasize the importance of involving parents in the EI programs. The active participation of the family helps to make them feel part of the treatment. As noted by Hutchon et al. (Hutchon et al., 2019), EI programs should include parent support for parental mental well-being.

The overall trend of the results of the meta-analysis of this study show a decrease in the stress levels in favor of the experimental group in comparison with usual care group, independently of the type of EI program carried out. With the exception of the studies by Castel et al. (Castel et al., 2016) and Glazebrook et al. (Glazebrook et al., 2007), in which the parenting stress levels when the child is 3 months old do not decrease, the effect of the intervention increases in favor of the experimental group over the course of time, reaching its lowest scores in all domains evaluated when the child is 5 years old. Therefore, it could be concluded that the age of the child influences the levels of stress

suffered by the parents. The habitual pattern described in the studies analyzed in this paper is that parental stress decreases as the child grows.

It should be noted that most of the studies reach a moderate-high level of methodological quality, with scores equal to or higher than 6/10 on the PEDro scale (Moseley, Herbert, Sherrington, & Maher, 2002). Only the studies by Castel et al. (Castel et al., 2016), Landsem et al. (Landsem et al., 2014), Meijssen et al. (Meijssen et al., 2011) and Van der Pal et al. (Van et al., 2008) obtained a score of 5/10. Although the purpose of the PEDro scale is to help quickly identify which of RCT may have sufficient internal validity and enough statistical information to make their results interpretable, our meta-analysis calculates the treatment effect size which provides an extra value. In neither of the two studies with greater effect size, Castel et al. and Landsem et al. (Castel et al., 2016; Landsem et al., 2014), there was blinding of the assessors, which could constitute a bias in the analysis of the data.

One of the limitations of this study is the heterogeneity in terms of assessment tools. Although the outcomes of the different scales could be standardized for meta-analysis, each of them includes different subscales referring to sources that generate stress, so not all stress domains have the same information.

The most widely used intervention methodology is MIT, which, despite being initially designed to be applied in mothers (Ravn et al., 2012), has been adapted and applied successfully by several authors in samples that include both parents (Kaaresen et al., 2006; Landsem et al., 2014; Newnham et al., 2009; Van et al., 2008).

Given that stress negatively affects quality of life, this outcome could be used in the evaluation of EI programs effectiveness (Carballal Mariño et al., 2018). The

measurement of parental stress in the key moments of the child's development, would indirectly contribute to improve the evaluation of EI programs.

In conclusion, the findings of this review provide moderate to strong evidence of the impact of EI programs on the reduction of parenting stress in parents of preterm babies. These findings offer useful insights regarding the delivery of current support and the development of future family interventions from based on EI. Methodological quality of the included studies varied considerably, and the heterogeneity of the assessment tools were a salient issue. Some recommendations for future research are made, emphasizing the active participation of the family and the need for more rigorous methodology.

Key messages:

- 1.- Early Intervention Programs that involve the parents is an effective strategy that may reduce the stress suffered by the same parents of preterm babies
- 2.- Inclusion of emotional support in Early Intervention Programs is an effective strategy to manage the stress suffered by parents of premature children

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Figures captions:

Figure 1: Search strategy

Figure 2: Studies flow chart.

Tables captions:

Table 1: Methodological quality of studies (PEDro Scale)

Table 2: Meta-analysis results of stress total score.

Table 3: Meta-analysis results of domains of stress.

Table 1: Methodological quality of studies (PEDro Scale).

Studies included	eligibility criteria were specified	Random Allocation	Concealed allocation	Baseline similarity	Blinding of subjects	Blinding of therapist	Blinding of assessors	Measures of key outcomes from more than 85% subjects	Intention to treat analysis	Between-group statistical comparisons	Point measures of variability	Total score
Als et al. 2003	yes	1	0	1	0	0	1	1	0	1	1	6
Kaaresen et al. 2006	yes	1	1	1	0	0	1	1	1	1	1	8
Glazebrook et al. 2007	yes	1	0	1	0	0	1	1	0	1	1	6
Van der Pal et al. 2007	yes	1	1	1	0	0	0	1	0	1	1	6
Kaaresen et al. 2008	yes	1	1	1	0	0	1	1	1	1	1	8
Van der Pal et al. 2008	yes	1	1	1	0	0	0	0	0	1	1	5
Newnham et al. 2009	yes	1	0	1	0	0	1	1	0	1	1	6
Meijssen et al. 2011	yes	1	0	1	0	0	0	1	0	1	1	5
Zelkowitz et al. 2011	yes	1	0	1	0	0	1	0	1	1	1	6
Feeley et al. 2012	yes	1	0	1	0	0	1	0	1	1	1	6
Ravn et al. 2012	yes	1	1	1	0	0	1	1	0	1	1	7
Schappin et al. 2013	yes	1	0	1	0	0	0	1	1	1	1	6
Borghini et al. 2014	yes	1	1	1	0	0	1	1	0	1	1	7
Landsem et al. 2014	yes	1	0	1	0	0	0	1	0	1	1	5
Castel et al. 2016	yes	1	1	0	0	0	0	1	0	1	1	5
TOTAL		14	7	14	0	0	9	12	5	15	15	

Table 2: Meta-analysis results of stress total score.

Total score		N Art.	Articles	Scale	N	I ²	Effect size
2 weeks	Total	3			76	0%	-0.30 [-0.76, 0.15]
	Mothers	3	Als 2003 Boston	PSI	17	0%	-0.30 [-0.76, 0.15]
			Als 2003 Brigham	PSI	28		
			Als 2003 Oakland	PSI	31		
3 Months	Total	2			302	27%	0.18 [-0.05, 0.41]
	Fathers	1	Castel 2016	PSI-SF	44	27%	0.18 [-0.05, 0.41]
	Mothers	1	Castel 2016	PSI-SF	59		
	Parents	1	Glazebrook 2007	PSI-SF	199		
6 Months	Total	4			377	83%	-0.28 [-0.48, 0.07]
	Mothers	4	Feeley 2012	PTSD	96	83%	-0.20 [-0.71, 0.32]
			Landsem 2014	PSI	140		
			Ravn 2012	PSI-SF	78		
			Schappin 2013	PSI	63		
12 Months	Total	6			668	46%	-0.08 [-0.29, 0.13]
	Fathers	1	Landsem 2014	PSI	112	NA	NA
	Mothers	5	Borghini 2014	PPQ	60	43%	-0.04 [-0.29, 0.22]
			Landsem 2014	PSI	139		
			Meijssen 2011	NOSIK	103		
			Ravn 2012	PSI	80		
	Parents	1	Van der Pal 2008	NOSIK	119	NA	NA
18 Months	Total	1			95	0%	-1.36 [-1.82, -0.91]*
	Fathers	1	Castel 2016	PSI-SF	42	NA	NA
	Mothers	1	Castel 2016	PSI-SF	53	NA	NA
2 Years	Total	2			344	18%	-0.36 [-0.60, -0.12]*
	Fathers	1	Landsem 2014	PSI	113	NA	NA
	Mothers	2	Landsem 2014 Meijssen 2011	PSI NOSI	128 103	57%	-0.37 [-0.78, -0.07]*
3 Years	Total	1			250	0%	-0.42 [-0.67, -0.16]*
	Fathers	1	Landsem 2014	PSI	115	NA	NA
	Mothers	1	Landsem 2014	PSI	135	NA	NA
5 Years	Total	1			245	0%	-0.61 [-0.87, -0.35]*
	Fathers	1	Landsem 2014	PSI	115	NA	NA
	Mothers	1	Landsem 2014	PSI	130	NA	NA
7 Years	Total	1			239	0%	-0.40 [-0.66, -0.14]*
	Fathers	1	Landsem 2014	PSI	109	NA	NA
	Mothers	1	Landsem 2014	PSI	130	NA	NA
9 Years s	Total	1			234	71%	-0.24 [-0.73, 0.24]

	Fathers	1	Landsem 2014	PSI-SF	106	NA	NA
	Mothers	1	Landsem 2014	PSI-SF	128	NA	NA

N Art. = Number of studies included in Meta-analysis (Standardized Mean Differences and Randomized Effects model). N= number of participants. I² = heterogeneity statistic.

*= p-value<0.05, significant differences in favor of experimental group: early attention; †=p-value<0.05, significant differences in favor of control group: Usual care.

Table 3: Meta-analysis results of domains of stress.

	N Art.	Articles	N Art	Articles	Scale	N	N total	I ²	Effect size
Child Domain	2 Weeks	Mothers	3	Als 2003 Boston	PSI	17	76	0%	-0.44 [-0.90, 0.02]
		Mothers		Als 2003 Brigham	PSI	28			
		Mothers		Als 2003 Oakland	PSI	31			
	3 Months	Fathers	2	Castel 2016	PSI-SF	44	302	49%	0.08 [-0.28, 0.45]
		Mothers		Castel 2016	PSI-SF	59			
		Parents		Glazebrook 2007	PSI-SF	199			
	12 Months	Fathers	2	Landsem 2014	PSI	112	370	60%	-0.22 [-0.54, 0.10]
		Mothers		Landsem 2014	PSI	139			
		Parents		Van der Pal 2008	NOSIK	119			
	18 Months	Fathers	1	Castel 2016	PSI-SF	42	95	0%	-4.40 [-6.28, -2.52] *
		Mothers		Castel 2016	PSI-SF	53			
	2 Years	Fathers	1	Landsem 2014	PSI	113	241	69%	-0.34 [-0.80, 0.13]
		Mothers		Landsem 2014	PSI	128			
3 Years	Fathers	1	Landsem 2014	PSI	115	250	0%	-0.55 [-0.80, -0.30] *	
	Mothers		Landsem 2014	PSI	135				
5 Years	Fathers	1	Landsem 2014	PSI	115	245	0%	-0.69 [-0.94, -0.43] *	
	Mothers		Landsem 2014	PSI	130				
7 Years	Fathers	1	Landsem 2014	PSI	109	239	22%	-0.42 [-0.71, -0.13] *	
	Mothers		Landsem 2014	PSI	130				
9 Years	Fathers	1	Landsem 2014	PSI-SF	106	234	59%	-0.25 [-0.66, 0.15]	
	Mothers		Landsem 2014	PSI-SF	128				
Parents Domain	2 Weeks	Mothers	3	Als 2003 Boston	PSI	17	76	0%	-0.26 [-0.72, 0.20]
		Mothers		Als 2003 Brigham	PSI	28			
		Mothers		Als 2003 Oakland	PSI	31			
	3 Months	Fathers	2	Castel 2016	PSI-SF	44	302	0%	0.13 [-0.10, 0.35]
		Mothers		Castel 2016	PSI-SF	59			
		Parents		Glazebrook 2007	PSI-SF	199			
	12 Months	Fathers	2	Landsem 2014	PSI	112	370	51%	-0.29 [-0.58, -0.11] *
		Mothers		Landsem 2014	PSI	139			
		Fathers & Mothers		Van der Pal 2008	NOSIK	119			
	18 Months	Fathers	1	Castel 2016	PSI-SF	42	96	0%	-0.82 [-1.24, -0.40] *
		Mothers		Castel 2016	PSI-SF	54			
	2 Years	Fathers	1	Landsem 2014	PSI	128	241	0%	-0.36 [-0.61, -0.10] *
		Mothers		Landsem 2014	PSI	113			
3 Years	Fathers	1	Landsem 2014	PSI	115	250	41%	-0.22 [-0.55, 0.11]	
	Mothers		Landsem 2014	PSI	135				
5 Years	Fathers	1	Landsem 2014	PSI	115	245	0%	-0.41 [-0.66, -0.15] *	

	N Art.	Articles	N Art	Articles	Scale	N	N total	I ²	Effect size
	7 Years	Mothers	1	Landsem 2014	PSI	130	239	0%	-0.28 [-0.54, -0.03] *
		Fathers		Landsem 2014	PSI	109			
		Mothers		Landsem 2014	PSI	130			
	9 Years	Fathers	1	Landsem 2014	PSI-SF	106	234	72%	-0.12 [-0.61, 0.36]
Mothers	Landsem 2014	PSI-SF		128					
Life Domain	2 Weeks	Mothers	3	Als 2003 Boston	PSI	17	76	1%	-0.38 [-0.84, 0.08]
		Mothers		Als 2003 Brigham	PSI	28			
		Mothers		Als 2003 Oakland	PSI	31			
	2 Years	Fathers	1	Kaarensen 2008	PSI	112	237	0%	-0.36 [-0.62, -0.11] *
		Mothers		Kaarensen 2008	PSI	125			
Interaction Domain	3 Months	Fathers	2	Castel 2016	PSI-SF	44	302	27%	0.18 [-0.11, 0.48]
		Mothers		Castel 2016	PSI-SF	59			
		Fathers y Mothers		Glazebrook 2007	PSI-SF	199			
	18 Months	Fathers	1	Castel 2016	PSI-SF	42	95	68%	-1.23 [-2.02, -0.44] *
		Mothers		Castel 2016	PSI-SF	53			
	9 Years	Fathers	1	Landsem 2014	PSI-SF	106	234	58%	-0.28 [-0.68, 0.12]
Mothers		Landsem 2014		PSI-SF	128				

N Art. = Number of studies included in Meta-analysis (Standardized Mean Differences and Randomized Effects model). N= number of participants. I² = heterogeneity statistic

*= p-value<0.05, significant differences in favor of experimental group: early attention; †=p-value<0.05, significant differences in favor of control group: Usual care.