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Language Problems Among Abused and Neglected Children: A Meta-Analytic Review

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Abstract

Research data show that exposure to abuse and neglect has detrimental effects on a child's language development. In this meta-analysis, we analyze studies ($k = 23$), to compare the language skills (receptive language, expressive language, pragmatics) of children who have experienced abuse and/or neglect with the language skills of children who have not experienced abuse and/or neglect and to examine whether age or type of maltreatment moderate the relationship between maltreatment and language skills. Results confirm that the language skills of children who have experienced abuse and/or neglect are delayed when compared to children who have not experienced abuse and/or neglect. Compared to older children, young children seem particularly vulnerable to abuse and neglect. No significant differences were demonstrated concerning the type of maltreatment suffered by the child. These findings support the necessity of early detection of language problems in abused and neglected children as well as early intervention in order to implement interventions that will positively stimulate their development.

Keywords

child maltreatment, child and adolescent development, prevention, neglect, child abuse, meta-analysis

The Federal Child Abuse Prevention and Treatment Act (CAPTA), as amended and reauthorized by the CAPTA Reauthorization Act of 2010, defines child abuse and neglect as: "Any recent act or failure to act on the part of a parent or caretaker which results in death, serious physical or emotional harm, sexual abuse or exploitation; or an act or failure to act which presents an imminent risk of serious harm" (Child Welfare Information Gateway, 2013, p. 2). Child abuse and neglect comprises acts of commission, that is, physical, sexual, or emotional abuse and acts of omission, that is, physical, emotional, medical, or educational neglect, all considered under the general label of child maltreatment (Leeb, Paulozzi, Melanson, Simon, & Arias, 2008).

In 2012, an estimated 686,000 children were confirmed as victims of abuse or neglect by the Child Protective Agencies in the United States (Child Welfare Information Gateway, 2014). Among those children, 78.3% were considered neglected (Child Welfare Information Gateway, 2014), although the multiple forms of maltreatment are frequently interrelated (Dong et al., 2004). The high prevalence of child abuse and/or neglect is extremely worrisome to the extent that experiences during infancy and early childhood shape the overall development and health throughout the course of a life (Council for Early Child Development, 2010).

Significant links have been established between exposure to abuse and/or neglect in the early years of life and the development of a child, especially with language development (McDonald, Milne, Knight, & Webster, 2013). The prevalence of language delay in abused and/or neglected children is hard to determine precisely due to the nonspecificity of the language measures used in the studies resulting in a general verbal quotient or a global appreciation of the receptive and/or expressive language development, and because the type of maltreatment is generally not stipulated. Most of time, all the included children are considered "maltreated," making it difficult to estimate the possible disparities between the various forms of abuse or neglect. Despite these limitations, research data convincingly show that child maltreatment is a threat to language development, given that 65% of 3-year-old children (range: 14–55 months) enrolled in a child protection preschool had a language delay estimated according to the verbal quotient of the Bayley Scales of Infant and Toddler Development III

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(Bayley, 2006; McDonald et al., 2013). Using a global measure of receptive and expressive language, the Preschool Language Scales 3 (Zimmerman, Steiner, & Pond, 1992), other researchers have demonstrated that maltreated children aged 0–2 and 3–5 years had language delays of 37% and 33% respectively (Zimmer & Panko, 2006). In a study devoted exclusively to neglected children, the prevalence ranged from 24% in children aged between 2 and 9 months, to 39% in children aged 9–21 months, and to 42% in those 22–36 months (Sylvestre & Mérette, 2010) as estimated by the French-Canadian version of the Rossetti Infant Toddler Language Scale (Rossetti, 1990; Sylvestre & St-Cyr Tribble, 2001). Those rates of prevalence are significantly higher than in the population as a whole, where they are approximately 20% in 3-year-old children (Reilly et al., 2010) and 7.4% in 5-year-old children (Tomblin et al., 1997).

Language can be defined as a socially shared code or conventional system for representing concepts through the use of arbitrary symbols and rule-governed combinations of those symbols (Owens, 2012). As the language process involves encoding, transmitting, and decoding an intended message, language processing includes two general dimensions: receptive language and expressive language. Language is made up of five components, three of which relate to its structural part, namely, syntax (structure of the sentences), morphology (internal organization of words), and phonology (sequence of phonemes and shape of syllables). Semantics, the fourth component, refers to a system of rules governing the meaning of words and word combinations in order to express the relationship of structural language with the perceptions of objects, events, and relationships. The fifth component, pragmatics, is related to the use of language within the communicative context. According to the functionalist perspective of language development (Owens, 2012), pragmatics is the organizational binder of the four other components of language, that is, syntax, morphology, phonology, and semantics.

Research data indicate that, with the exception of the production of speech sounds (Culp et al., 1991), receptive and expressive language of abused and/or neglected children do not globally reach developmental standards. More specifically, in terms of receptive language, it seems that these children understand a lesser amount and variety of words compared to their nonmaltreated peers (Eigsti & Cicchetti, 2004; Fox, Long, & Langlois, 1988; Perry, Doran, & Wells, 1983). Their capacity to understand instructions and usual questions is also less developed, overall, when compared to developmental standards (Fox et al., 1988). Concerning the expressive language dimension, it is noted that the length and complexity of the utterances (e.g., syntax) of abused and/or neglected children is less developed than in children at the same age who have not experienced maltreatment (Beeghly & Cicchetti, 1996; Coster, Gersten, Beeghly, & Cicchetti, 1989; Eigsti & Cicchetti, 2004). Maltreated children have delayed expressive lexical development when compared to nonmaltreated children (Beeghly & Cicchetti, 1996; Coster et al., 1989). On the pragmatic side of language, it has been shown that abused and/or neglected children frequently avoid social interactions (Hecht et al., 1986) and have an insufficient repertory of sociopragmatic functions compared to typical standards (Coster et al., 1989). The relevance of their conversations is also poorer than that of nonmaltreated children (Beeghly & Cicchetti, 1996; Coster et al., 1989). Considering that language is the foundation of subsequent skills, such as reading and writing (Justice, Bowles, Pence Turnbull, & Skibbe, 2009; Rootman & Gordon-El-Bihbety, 2008), it is of utmost importance to well understand the particularities and needs of abused and/or neglected children in the language part of their development.

Among several theoretical approaches, the language difficulties experienced by abused and/or neglected children can be enlightened by using the social-interactionist model of language development (Vygotsky, 1934/1986). This model suggests that the quantity and quality of language stimulation strategies used by adults in a warm and sensitive interaction are the main active ingredients of language development (Roberts & Kaiser, 2011). Language development is highly dependent upon the child's innate capabilities such as neurobiological factors. Yet, in order to put such capabilities in motion, they must be combined with social interaction between the child and its parents from the first moments of life (Bernicot & Bert-Erboul, 2009) as the social–interactionist approach suggests.

Responsiveness is the key component of the parent–child interactions. It refers to parents' verbal and nonverbal responses to the child's intentional communication acts (Roberts & Kaiser, 2011). Responsive parenting includes high levels of warmth and acceptance of the children as unique individuals, responses that are contingently linked to the children's signals, and cognitively responsive behaviors such as rich language input and the maintaining of children's interests (Landry et al., 2012; Leigh, Nievar, & Nathans, 2011). This kind of interaction supports language development through fine adjustments to the individual needs of a child. A high level of this parenting style develops the child's ability to internalize and subsequently generalize its knowledge to new experiences, based on its recurrent experiences in previous responsive interactions (Landry et al., 2012). The child who suffers abuse and/or neglect is precisely deprived of these kinds interactions and adjusted stimulation fundamental for language development (Geeraert, van den Noortgatem, Grietens, & Onghena, 2004).

The research data available to date clearly indicate that children exposed to abuse and/or neglect are at greater risk to have lower language skills compared to children of the same age who have not been abused and/or neglected. However, many questions remain unanswered. First, the association between the subtypes of maltreatment and language development is unknown. Some researchers suggest that the verbal negotiations that may take place between the physically abused children and their parents can promote language development because parents talk to their children, even if the content of their talk is aggressive in substance (Fox et al., 1988). On the contrary, the typical withdrawal of emotionally neglectful parents and the absence of interactions will potentially weaken

the language development of neglected children (Culp et al., 1991). Knowing the specific effects of various types of maltreatment regarding language development, in addition to contributing to the advancement of knowledge, could lead to more targeted interventions, better adjusted to different needs of the parents, and the children alike.

Second, it is necessary to examine the language skills most likely to be compromised by the experience of abuse and/or neglect. Difficulties in one aspect of language can affect the development of the other aspects. For example, pragmatic difficulties significantly hinder the development of the structural part of expressive language, since they limit the opportunities for the child to practice its language (van Balkom & Verhoeven, 2004). Knowing the aspects of the language most affected by abuse and/or neglect could therefore enable the implementation of intervention strategies adapted to the most salient needs of children.

Third, the child's age must be considered. The majority of child maltreatment cases begin during infancy and early childhood, a developmental period particularly critical because the majority of postnatal brain development occurs between birth and age 3 (Cummings & Berkowitz, 2014). When early childhood is impacted by the harsh and negative experiences of child maltreatment, it can result in a range of neurophysiological dysregulation (Grassi-Oliveira, Ashy, & Milnitsky Stein, 2008; Kocovska et al., 2012). This early onset of stress precipitates a chain of neurohormonal and neurotransmitter effects that can damage brain structure and function (Cummings & Berkowitz, 2014; Grassi-Oliveira et al., 2008). These aggressions can cause structural damage that may lead to functional deficits in language development (Center on the Developing Child at Harvard University, 2011; De Bellis, Woolley, & Hooper, 2013). These adverse effects are particularly active during the early years of a child's life, although they are also observed during adolescence (Center on the Developing Child at Harvard University, 2011; Hussey, Chang, & Kotch, 2006). Thus, it is important to know whether or not the links between exposure to abuse and/or neglect are more detrimental for the younger children. This can orientate the organization of early intervention services (Scarborough, Lloyd, & Barth, 2009).

Objectives

Using quantitative methods of meta-analysis, the aims of this study were to (a) compare the language skills (receptive language, expressive language, pragmatics) of children who have experienced abuse and/or neglect with the language skills of children who have not experience abuse and/or neglect and (b) examine whether age or type of maltreatment moderate the relationship between maltreatment and language skills. In addition to these moderator variables derived from theory, a methodological moderator was also included, as it is a convention in meta-analytic research. Publication year was included as a possible indicator of a cohort effect. This refers to the social norms as to how children should be taken care of and how discipline should be applied, and these norms have considerably changed over the last 40 years. This evolution of social norms related to parenting can influence child development in different ways, based on what was considered harsh parenting 40 years ago and what it is now.

Rationale for Meta-Analysis

Meta-analysis methodology was chosen to answer the abovementioned objectives. By way of its statistical approach combining the results of a series of independent studies, meta-analysis allows for a more accurate analysis of data and draws more global conclusions. The magnitude and direction of results are coded for each retained study, rather than counting only significant and nonsignificant results. Given that statistical significance reflects a combination of the strength of effects and sampling errors, which are highly dependent on sample size, simply examining statistical significance across a group of studies can be misleading (Hedges, 2009). By collating studies of groups of participants with different characteristics, the meta-analysis provides a means to approach the "average" child among abused and/or neglected children. The results of small studies are pooled, thereby increasing the statistical power to detect differences between experimental conditions (Lipsey & Wilson, 2001). The structured research technique with documentation at each step ensures that it can be replicated (Cooper & Hedges, 2009). The magnitude of association between different forms of maltreatment and different aspects of language development is also to be considered. An enhanced understanding of this magnitude can serve to sensitize stakeholders as to the importance of the phenomenon and to provide the appropriate professional services required to meet this need. The current state of the services offered by Child Welfare Services responding to childrens' basic needs occupies such a place so that their developmental needs are often overlooked and overshadowed.

Method

Eligibility Criteria of the Studies

Cohort studies were included if they fulfilled the following three criteria. First, it included at least two groups of children between age 0 and 12, within a group that had experienced abuse and/or neglect, as confirmed by Child Welfare Services, and a control group with no exposure to maltreatment. Second, it included at least one specific and standardized measure of language. Maternal reports of language were not included due to the vagueness of such measures, especially after age 3. Third, the article had to have been published in a peer-reviewed journal between January 1970 and December 2013. Single case studies and case–control studies were not included because they do not allow calculating an effect size, given that they are essentially descriptive in nature. Dissertations and unpublished conference presentations were not retained.

Search Strategy

A librarian and two research assistants conducted searches in December 2013 in the following databases: PUBMED,

EMBASE, CINAHL, ERIC, PSYCINFO, and SCOPUS. In each database, the key word "language" was integrated in the other searches using the key words associated with the two major variables, language and maltreatment: language development OR child language OR language delay OR language acquisition OR specific language impair* OR communication disorders AND child abuse OR child advocacy OR neglect OR abuse OR maltreatment and child* OR trauma child* OR traumatized child* OR child protection (the complete search is available upon request).

The first author reviewed all titles and abstracts identified in the search strategy. As needed, entire articles were retrieved and read to determine eligibility. The reference lists of all articles identified as pertinent were read, as were the reference lists of any pertinent literature reviews on related subjects, to identify any articles that may have been missed by the search engines. As new articles were found, their reference lists were consulted until no new articles were found. The full texts of all relevant studies were reassessed for inclusion by the second author and the final set of studies included in the meta-analysis was selected by consensus between the first two authors. In the articles meeting the eligibility criteria, maltreatment was either physical abuse or unspecified neglect, that is, without specification of the subtype of neglect (physical, emotional, medical, or educational). The co-occurrence of both types of maltreatment was documented in some studies.

Data Extraction

The following four study characteristics were systematically coded and extracted independently by two research assistants using a coding grid. (1) Maltreatment variable: Maltreatment status was first coded to ensure that exposure was confirmed by Child Welfare or Social Services charts. The subtypes of maltreatment were coded based on three categories: physical abuse, neglect, or both, based on the information available in the studies. (2) Language variables: The specific measures of language considered were coded as receptive language, expressive language, or pragmatics. For example, measures coded as receptive language were measures such as auditory comprehension or comprehension of instructions. Measures coded as expressive language were measures based on mean length of utterances or speeded naming. Pragmatics measures included discourse or conversation measures. (3) Sample characteristics: Number of participants and child age were extracted. (4) Study characteristics: Country and year of publication were recorded.

Statistical Analyses

The meta-analysis was conducted using the Comprehensive Meta-Analysis Version 2.0 (Borenstein, Hedges, Higgins, & Rothstein, 2009). A measure for effect size (Hedges' g) was calculated for each study. This effect size was selected because it can account for small sample sizes or unequal groups within a study. Interpretation of the global effect size was performed according to the guidelines published by Cohen (1988); a small effect size was .20, a moderate effect size was .50, and a strong effect size was .80 and above. The software gives a relative weight to each study according to its sample size.

When a study provided results for different dependent variables, for example, receptive language and expressive language, average effect sizes for each study were used to test the overall relation between maltreatment and language. The conservative random-effects approach was used to combine effect sizes, and this approach takes into account the methodological differences that might exist between studies regarding the way participants were recruited and handled, their characteristics, and other variables that can disturb effect sizes (Borenstein et al., 2009; Rosenthal, 1995).

Decisions had to be made regarding the manner in which to include certain studies in the present analysis. For example, certain studies reported an absence of relation between maltreatment and language without reporting an index of effect size (e.g., Rieder & Cicchetti, 1989). As others have done in such cases (Bar-Haim, Lamy, Pergamin, Bakermans-Kranenburg, & van IJzendoorn, 2007), an effect size of $g = 0$ was attributed to such studies. This also served to limit possible publication bias which we will discuss later.

Heterogeneity and Publication Bias

Bias among studies was examined by way of the funnel plot and "Trim-and-Fill" procedure (Duval & Tweedie, 2000). Fisher's Z was calculated for each study to determine the presence of outliers (Z had to be less than -3.29 or greater than 3.29). The Q statistic was used to test for heterogeneity of effect sizes across studies. Heterogeneity of results was assumed if Q was significant at the $p < .05$ level, allowing for the testing of potential moderators.

Subgroup Analyses and Meta-Regression

Moderating analyses were conducted to test whether the association between maltreatment and language varies as a function of three language variables (receptive language, expressive language, and pragmatics), maltreatment subtypes (physical abuse, neglect, and both), child age at the moment of the measurement of outcome, and publication year. Subgroup analyses were carried out to test all the categorical variables, using study as the unit of analysis, except for the language variables. Indeed, whenever more than one statistic was available for each study, that is, receptive language and expressive language, analyses were performed using subgroups within the studies as the unit of analysis. Continuous variables (child age, publication year) were tested through meta-regression.

Results

Study Selection

The initial search yielded 565 articles of which 21 studies were retained. Reference lists allowed for the identification of an additional four articles of which only one was retained.

Table 1. Studies Included in the Meta-analysis ($k = 23$).

Studies	Mean Age	*n*		*g*
		Maltreated	Control	
Alessandri (1991)	4.42	15	15	−0.04
Coster, Gersten, Beeghly, and Cicchetti (1989)	2.64	20	20	−0.53
De Bellis, Hooper, Spratt, and Woolley (2009)	7.50	39	45	−0.80
Eigsti and Cicchetti (2004)	4.79	19	14	−0.57
Gregory and Beveridge (1984)	6.36	13	16	−0.18
Hoffman-Plotkin and Twentyman (1984)	4.22	14	14	−1.93
Koenig, Cicchetti, and Rogosch (2000)	3.50	41	35	−0.57
Nolin (2009)	8.75	25	25	−1.13
Nolin and Éthier (2007)	8.77	28	53	−0.24
Okun, Parker, and Levendosky (1994)	10.27	19	49	−0.14
Perry, Doran, and Wells (1983)	5.05	14	14	−1.19
Pollak, Cicchetti, Klorman, and Brumaghim (1997)	9.20	23	21	−0.50
Prasad, Dramer, and Ewing-Cobbs (2005)	2.71	19	19	−1.08
Rieder and Cicchetti (1989)	6.35	72	70	0.00
Robinson et al. (2012)	7.14	71	70	−0.82
Smith and Walden (1999)	4.55	15	15	−1.25
Toth and Cicchetti (1996)	9.50	52	40	0.00
Toth, Cicchetti, Macfie, and Emde (1997)	5.02	80	27	−0.54
Toth, Cicchetti, Macfie, Rogosch, and Maughan (2000)	4.80	43	22	0.01
Trickett (1993)	7.44	29	29	−0.54
Trickett, Aber, Carlson, and Cicchetti (1991)[a]	5.75	37	53[a]	−0.45
Trickett, Aber, Carlson, and Cicchetti (1991)[b]	6.17	21	21[b]	−0.24
Vondra, Barnett, and Cicchetti (1990)	4.75	12	12	−1.11

[a]Harvard Child Maltreatement Project sample (HCMP). [b]National Institute of Mental Health Child Project sample (NIMH).

The current meta-analysis is thus based on data provided by 22 studies, including 23 independent samples, involving 1420 participants. Sample size varied from 24 to 142. The majority of the studies have been conducted in the United States ($k = 20$), two have been conducted in the province of Quebec (Canada) and another one in England. The country was not tested further as a moderator because of the lack of variability between studies. Study characteristics are presented in Table 1.

Main Effects

This meta-analysis aims at determining whether children experiencing physical abuse and/or neglect have a language development comparable to children who are not exposed to maltreatment. Globally, there appears to be a moderate and significant inverse association between physical abuse and/or neglect and language ($g = -.53$; $p < .001$, $k = 23$; 95% confidence interval [CI]: [−.71, −.36]; Table 2). This result indicates that physically abused and/or neglected children show less optimal language development than nonmaltreated children. On average, children experiencing physical abuse and/or neglect performed .53 standard deviations lower on standardized measures of language than nonmaltreated children.

Funnel plot analysis reveals the possibility of a minor publication bias (Figure 1). The Trim-and-Fill procedure allows for the calculation of an adjusted effect size, which is similar to the original analyses and corresponds to a moderate association ($g = -.45$). Fisher's Z reveals an absence of outlying data. Finally, significant heterogeneity of results across studies is noted ($Q = 57.82$; $p < .001$), making it pertinent to investigate potential moderating variables.

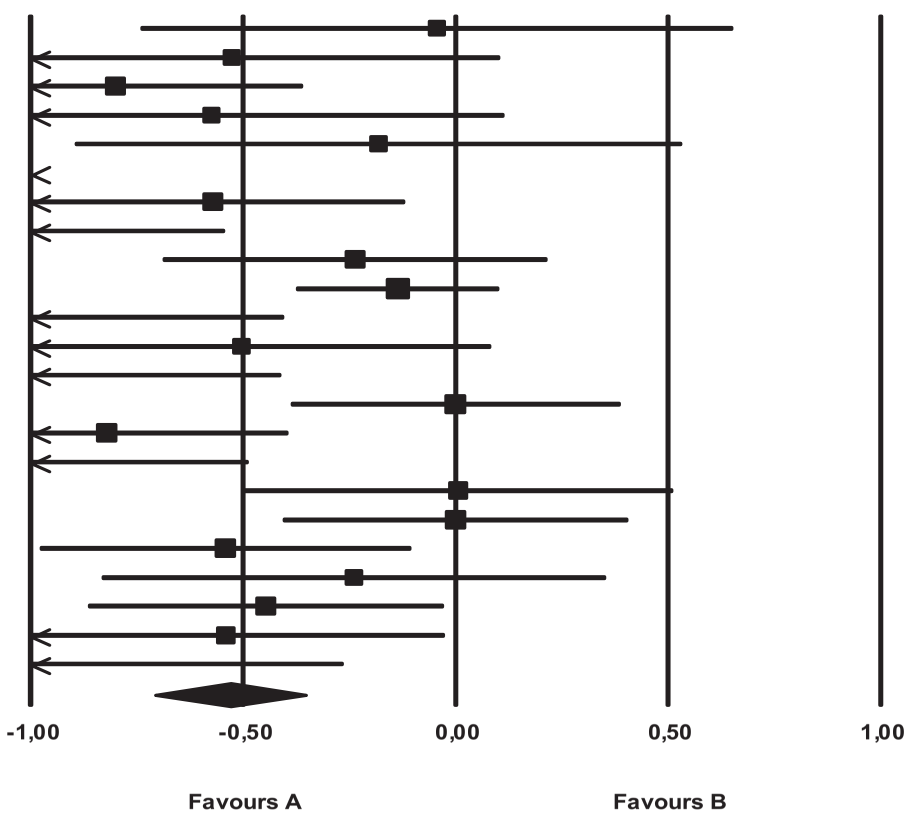
Moderator Analyses

Further analyses were performed to precise if the moderator variables (language variables, maltreatment subtypes, age of the child, publication year) play a role in the observed differences between the language of abused and/or neglected children and nonmaltreated children. These moderator analyses were done using subgroups within samples as units of analysis. The moderating variables considered are described in the Methods section. All results are presented in Table 3. Significant moderation was found regarding two variables: age of the child and publication year.

Language variables. The available data allowed for 57 effect sizes to be analyzed as a function of the language variables considered: 15 for expressive language, 26 for receptive language, and 16 for pragmatics. Analyses show that physically abused and/or neglected children have delayed language skills compared to nonmaltreated children, regardless of the language variables ($Q' = 1.32$; $p = .52$). Although no language variable is more affected than another, the effect sizes are important for the three variables of language measured: receptive language ($g = -.53$), expressive language ($g = -.67$), and pragmatics ($g = -.48$).

Table 2. Forest Plot ($k = 23$).

Study Name	Subgroup Within Study	Outcome	Std Diff in Means	Standard Error	Variance	Lower Limit	Upper Limit	Z-Value	p-Value
			Meta-analysis						
			Statistics for Each Study						
Alessandri (1991)	Physical abuse and neglect	Combined	−.044	.357	.128	−.744	.656	−.124	.902
Coster, Gersten, Beeghly, and Cicchetti (1989)	Physical abuse and neglect	Combined	−.526	.323	.104	−1.159	.107	−1.630	.103
De Bellis et al. (2009)	Neglect	Combined	−.800	.226	.051	−1.244	−.357	−3.538	.000
Eigsti and Cicchetti (2004)	Physical abuse	Combined	−.574	.353	.124	−1.265	.117	−1.628	.104
Gregory and Beveridge (1984)	Physical abuse	Combined	−.181	.366	.134	−.898	.535	−.496	.620
Hoffman-Plotkin and Twentyman (1984)	Neglect	PPVT	−1.934	.449	.201	−2.814	−1.054	−4.309	.000
Koenig et al. (2000)	Physical abuse	PPVT	−.571	.232	.054	−1.027	−.116	−2.458	.014
Nolin (2009)	Physical abuse	Combined	−1.129	.300	.090	−1.718	−.541	−3.759	.000
Nolin and Éthier (2007)	Neglect	Combined	−.236	.232	.054	−.691	.219	−1.017	.309
Okun et al. (1994)	Physical abuse	PPVT	−.136	.123	.015	−.377	.105	−1.105	.269
Perry et al. (1983)	Physical abuse	PPVT	−1.185	.400	.160	−1.968	−.401	−2.964	.003
Pollak et al. (1997)	Physical abuse and neglect	PPVT	−.504	.301	.091	−1.095	.086	−1.674	.094
Prasad et al. (2005)	Physical abuse	Combined	−1.077	.341	.116	−1.745	−.408	−3.158	.002
Rieder and Cicchetti (1989)	Physical abuse and neglect	PPVT	.000	.199	.040	−.390	.390	.000	1.000
Robinson et al. (2012)	Physical abuse	PPVT	−.821	.219	.048	−1.251	−.391	−3.740	.000
Smith and Walden (1999)	Physical abuse and neglect	PPVT	−1.250	.390	.152	−2.015	−.485	−3.203	.001
Toth and Cicchetti (1996)	Physical abuse	PPVT	.000	.209	.043	−.409	.409	.000	1.000
Toth et al. (1997)	Physical abuse and neglect	PPVT	−.541	.224	.050	−.980	−.102	−2.416	.016
Toth et al. (2000)	Physical abuse and neglect	PPVT	.006	.259	.067	−.501	.514	.024	.981
Trickett et al. (1991)[a]	Physical abuse	PPVT	−.446	.215	.046	−.868	−.025	−2.076	.038
Trickett et al. (1991)[b]	Physical abuse	PPVT	−.239	.304	.092	−.835	.356	−.787	.431
Trickett (1993)	Physical abuse	PPVT	−.540	.264	.070	−1.057	−.023	−2.046	.041
Vondra, Barnett, and Cicchetti (1990)	Physical abuse and neglect	PPVT	−1.113	.434	.189	−1.964	−.261	−2.561	.010
			−.534	.090	.008	−.711	−.357	−5.905	.000



Note. CI = confidence interval; PPVT = Peabody Picture Vocabulary Test.
[a]Harvard Child Maltreatement Project sample (HCMP). [b]National Institute of Mental Health Child Project sample (NIMH).

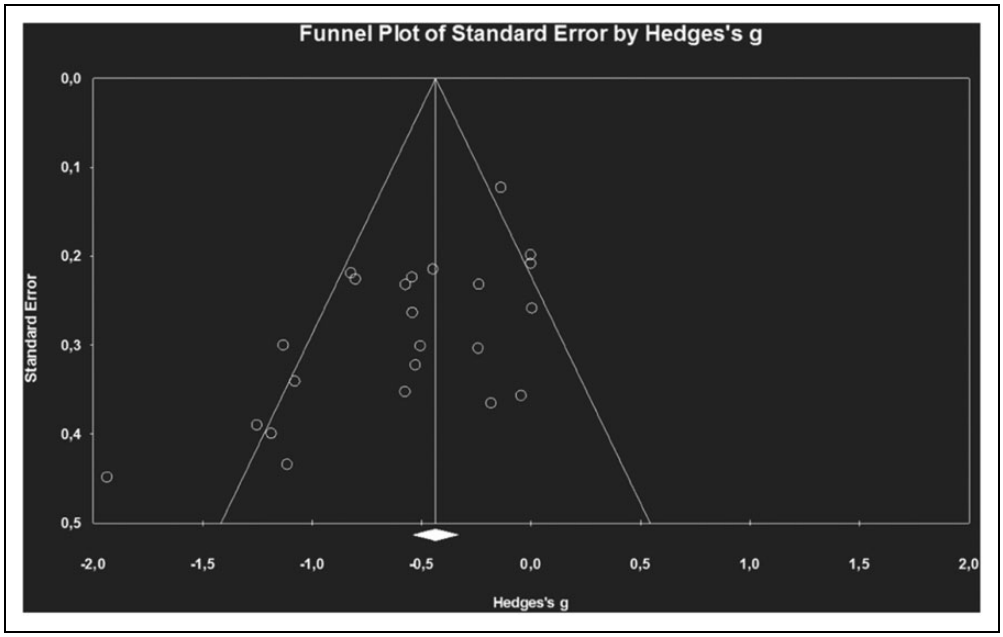


Figure 1. Funnel plot random effects ($k = 23$).

Table 3. Moderator Analysis.

				95% CI			
Moderator	*k*	*N*	*g*	*LL*	*UL*	*Q′* (*p*)	Slope
All studies	23	1420	−.53***	−.71	−.36		
Language							
Receptive	26		−.53***	−.70	−.36		
Expressive	15		−.67***	−.88	−.46		
Pragmatic	16		−.48**	−.82	−.15		
Contrast						1.32 (.52)	
Maltreatment							
Physical abuse	12		−.53***	−.753	−.3		
Neglect	3		−.90*	−1.68	−.12		
Both	8		−.43***	−.729	−.123		
Contrast						1.30 (.52)	
Child's age	23						.06**
Publication year	23						−.02*

Note. CI = confidence interval; *LL* = lower limit; *UL*= upper limit.
*$p < .05$. **$p < .01$. ***$p < .001$.

Maltreatment subtypes. Information related to maltreatment subtypes was available in 23 studies. In 12 of these studies, authors reported that the children were exposed to physical abuse only, in 3 studies children were exposed to neglect only, whereas 8 studies included children who were exposed to neglect and physical abuse simultaneously. All subtypes of maltreatment are moderately associated with delayed language skills ($Q' = 1.30$; $p = .52$), yet no subtype indicates a greater association than another.

Child's age. The child's age is a significant moderator of the association between abuse and/or neglect and language skills, with younger children showing greater negative effect sizes (slope = 0.06; $p < .01$) than older children.

Publication year. Publication year is also a significant moderator of the association between maltreatment and child development, with recent studies showing the largest negative effect sizes (slope = −0.02; $p < .05$).

Discussion

The aims of this study were twofold: (a) to compare the language skills (receptive language, expressive language, pragmatics) of children who have experienced abuse and/or neglect with the language skills of children who have not experience abuse and/or neglect and (b) to examine whether age, type of maltreatment, and publication year moderate the relationship between maltreatment and language skills. The results underline two critical points. First, there exists a significant difference in language skills across the three language variables examined in this study between children with and without a history of physical abuse and/or neglect. On average, the children with a history of abuse and/or neglect performed between .48 and .67 *SD*s worse on standardized language measures compared to children who were not abused and/or neglected. Second, a moderating effect was demonstrated for two variables: age of the child and publication year.

No significant differences were demonstrated between the subtypes of maltreatment suffered by the child. Thus, child's language development is compromised, regardless of whether the child is exposed to physical abuse or neglect or a combination of both. However, it must be considered that different types of maltreatment are combined in the samples, which may have the effect of masking the possible differential effects of

each type of maltreatment. This result may be due to the limited number of studies that include only neglected children ($k = 3$), leading to an insufficient statistical power. It is also possible that the results showing significant positive associations between physical abuse and language development have measured the effects of a "hidden negligence" rather than the effects of physical abuse itself, given the frequent concomitant occurrence of these two types of abuse. Inversely, neglect can also masks physical abuse (Allen & Oliver, 1982). This result highlights the need to pursue differentiated studies of links between the different forms of maltreatment and language development with exact samples of neglected or physically abused children and a group facing different types of abuse simultaneously.

Results indicate that all language variables—receptive language, expressive langue, pragmatics—are likely to be affected among abused and/or neglected children. They do not highlight a particular or greater achievement of one or another language variable. Specific pragmatic difficulties were expected in neglected children due to the fact that this form of maltreatment is characterized by difficulties in parent–child interactions and a lack of stimulation of development. But this is not the case here. It is possible that the small number of studies on exclusively neglected children ($k = 3$) has not led to any highlighted differences.

It appears that the age of the child acts as a moderator of the association between maltreatment and language development, and then represents a non negligible variable to consider in order to better understand the significance of the observed effect sizes. As a stronger association between maltreatment and language is observed among younger children, it suggests that early development is particularly vulnerable to abuse and/or neglect. Although the association is less prominent among older children, it is not possible to draw longitudinal associations, due to the cross-sectional nature of the design. Many hypotheses can be suggested to shed some light to this result. First, it is in line with research in the area of developmental windows, which has demonstrated that adverse events occurring during the early childhood period of development can have a deleterious and even permanent effect on development. Second, as older children appear to show a better development than younger children (0–5 years old), it is possible that older children have more opportunities to interact with peers and teachers, which can act as a buffer of the adversity experienced by the child.

In order to expand the understanding of the moderating effect of age, we need to know at what age the maltreatment events occurred in the child's life and what was its duration, which was not possible in the present meta-analysis due to a lack of information related to these aspects in the included studies. When the samples are composed of older children, age 11–12, for example, it was not possible to determine whether the maltreatment condition was new or had been present during the most part of the children's lives. The duration of physical abuse and/or neglect, and the time of occurrence in the child's life would have to be documented in order to shed more light on the moderating role of age in relation to maltreatment and language development.

Possible Clinical Implications to Promote Language Development of Maltreated Children

The results of other meta-analysis indicate that parent training is effective in reducing the risk that a parent will physically abuse or neglect a child (Geeraert et al., 2004; Lundahl, Nimer, & Parsons, 2006). Although it is of prime importance to intervene in order to reduce abuse or neglect and to maximize parental competencies, especially their language stimulation skills, intervention by the parent alone is not sufficient. It is also frequently necessary to intervene with the child itself, in an individualized clinical approach, to support and maximize its language development (Guralnick, 2013). However, research results obtained within the Child Welfare domain indicate that, in spite of high developmental and behavioral needs, only a minority of the children aged under 6 received services pertaining to these issues (Casanueva, Cross, & Ringeisen, 2008; Stahmer et al., 2005).

Over the course of 1 year, Stahmer et al.'s (2005) study showed that slightly less than one quarter of children in contact with Child Welfare received intervention from the education, mental health, or primary care sectors. As a group, children received more education services than primary care services for developmental and behavioral issues, and younger children did not receive services as often as preschoolers although they exhibited similar levels of risk. It seems that in many cases, the magnitude of the basic needs of these children with significant vulnerabilities such as safety, nutrition, and health care, are not met, and delays of language development exhibited by several of them are often overshadowed (Casanueva et al., 2008). In this context, psychosocial workers and those from the field of education must be involved to better support the language development of these children. Clinicians who work directly with the children on a relatively frequent basis may contribute to the reduction in language and cognition deficits in these children, if they are well supported by speech language pathologists (Everitt, Hannaford, & Conti-Ramsden, 2013).

Limitations of the Meta-Analysis

Some limitations not yet mentioned can be identified in this meta-analysis. The evidence regarding language abilities of children who are victims of abuse and/or neglect relative to their nonmaltreated peers was based on a relatively limited number of studies ($k = 23$). The small number of studies, combined with the small samples included in these studies (from 24 to 142 participants), resulting in a lack of statistical power, may explain why no significant differences were observed between the different language variables and between maltreatment subtypes. It is also important to note that 9 of the 23 examined studies did not have significant effect sizes (there were no significant differences between groups on language measures), which could contribute to the absence of statistical differences

between these variables. In addition, studies included in the meta-analysis were highly variable as indicated by the examination of the CIs. As the moderator analysis did not allow to parcel out all of the variance in the data, it could be possible that other variables play a role in the association, for example, the family's socioeconomic status or the history of the child's foster care. This last variable can possibly acts as an intervention and buffers the influence of an early adverse environment on language development.

One must also consider that, because the primary studies included are all cross-sectional, conclusions cannot be drawn about the influence of maltreatment over the long term. In addition, the cross-sectional nature of the included studies does not allow drawing causal associations. For example, we cannot assume that delayed language development was a precursor to maltreatment because it might as well be the opposite. Indeed, it is possible that the challenge associated with raising a child presenting a communication deficit could lead to parent's harsh reactions and potentially to maltreatment.

In the exam of moderators, biases inherent to cohort studies, including the lack of control of confounding variables, add a risk that a third variable accounts for the observed effects. For example, services received by the children could act as a confounding variable, as some children have experienced placement early in their life and others have been exposed to adversity for a much longer time, without receiving any type of services. This variable could not be taken into account in this meta-analysis, as the information about services received was not available in the primary studies included. In the same way, sex could not be tested as a moderator because data were not available in the studies. Finally, the fact that we did not include unpublished paper may have contributed to publication bias.

Future Directions

Different research orientations may be considered in connection with these limits. First of all, there is a real need to better understand the potentially different influences of various subtypes of maltreatment related to the development of children's language. For example, emotional and educational neglect do not expose the children to the same types of experiences and could have different effects on the development of their language skills. It is the same reasoning for all subtypes of maltreatment. The long-term difficulties in younger children compared to older ones, and the effects of the duration of exposure to maltreatment at an early age should be examined with the use of longitudinal designs. These studies should also include variables such as the type of placement received by the child, the services received, and the quality of the larger environment, including teacher and peers, in order to account for the role of the school environment in buffering the adversity experienced by the child. It is also important to conduct studies to better understand the role of severity, duration, and type of child maltreatment during the period of language development. The mechanisms of child maltreatment and their influence on language development, including through mediating variables, must be integrated in new studies. Exploration of the mechanisms leading to adverse outcomes or, conversely, explaining the resilience of some children should also be considered. Socioeconomic status, ethnicity, and cultural factors ought to be examined as well, so as to reflect on the experiences of diverse populations and health disparities (Boyle & Maholmes, 2013).

Conclusion

This meta-analysis is important because it confirms that the language skills of children who have experienced abuse and/or neglect is delayed when compared to children who have not experience abuse and/or neglect. The fact that exposure to maltreatment interferes early with children's language development advocates for early detection. The links between language development, social inclusion, subsequent academic performance, and participation in society as adults strongly support the deployment of efforts, not only to counter the maltreatment of children, but also the language delays often associated with this condition (Fox & Rutter, 2010).

The effectiveness of early intervention is well established, particularly in the context of social risk (Guttentag et al., 2014; Leffel & Suskind, 2013). However, improving the quality of the parent–child relationship is not enough. The intervention must also be directly oriented toward the children in order to support their language development by providing specialized services in speech and language pathology when necessary and by establishing effective methods of intervention for significant adults living with the children. It is only by integrating the intervention with parents and other significant adults, and direct intervention with the child when required that we will be able to contribute to the language development of maltreated children.

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