

Child maltreatment history moderates the effectiveness of interventions in preventing disorganized attachment: Results of a meta-analysis

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Development of regulatory strategies in infancy

- Caregivers help children regulate emotion
- Consistent support leads to confidence in parents' availability
- Expectations become **organized** into distinct patterns of attachment behavior

(Ainsworth et al., 2015/1978; Bowlby 1969/1980)

Disorganized attachment and early maltreatment

- Some children fail to develop a coherent strategy in the presence of the parent.
- Disorganized attachment is a consequence of harsh and threatening parenting behaviors (Hesse & Main, 2006; Cicchetti et al., 2006; Cyr et al., 2010)
- This “unsolvable dilemma” serves as the basis for disorganized attachment (Main & Solomon, 1990)

Disorganized attachment behaviors

- Unusual behaviors in the presence of the parent:
 - stilling
 - freezing
 - anomalous movements/postures
 - frightened expressions
 - active avoidance
- Disorganized attachment behaviors fail to fit into the natural sequence of events

(Main & Solomon, 1990)

Maladaptive developmental outcomes

- Difficulties regulating behavior and emotion
 - Internalizing (Madigan et al., 2013)
 - Externalizing (Fearon et al., 2010 ; Groh et al., 2012)
- Physiological dysregulation
 - Heightened cortisol reactivity (Bernard & Dozier, 2010; Hertsgaard et al., 1995)
- Psychopathology
 - Dissociative psychopathology in adolescence (Carlson, 1998)

Meta-analytic estimate of interventions



- Meta-analytic review
 - Bakermans-Kranenburg et al., (2005)
- $d = .05$, ns

Interventions were generally ineffective at reducing the incidence of disorganization

The current study...

- Several new interventions have been developed and examined with varying efficacy.

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1. Are attachment-based interventions effective in reducing rates of disorganized attachment?

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- Several new interventions have been developed and examined with varying efficacy.
1. Are attachment-based interventions effective in reducing rates of disorganized attachment?
 2. Under which conditions are interventions most effective?

Methods: Literature search

- Peer-reviewed articles and dissertation reports
- Online databases PsycINFO, MEDLINE, ProQuest were searched using the following combination of key terms:

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- Online databases PsycINFO, MEDLINE, ProQuest were searched using the following combination of key terms:

attachment*

intervention*

sensitivity

responsiveness

clinical trials

preventive

treatment outcome

therapeutic

Methods: Inclusion/exclusion criteria

Inclusion criteria:

- English language
- Report rates of disorganized attachment
- SSP

Exclusion criteria:

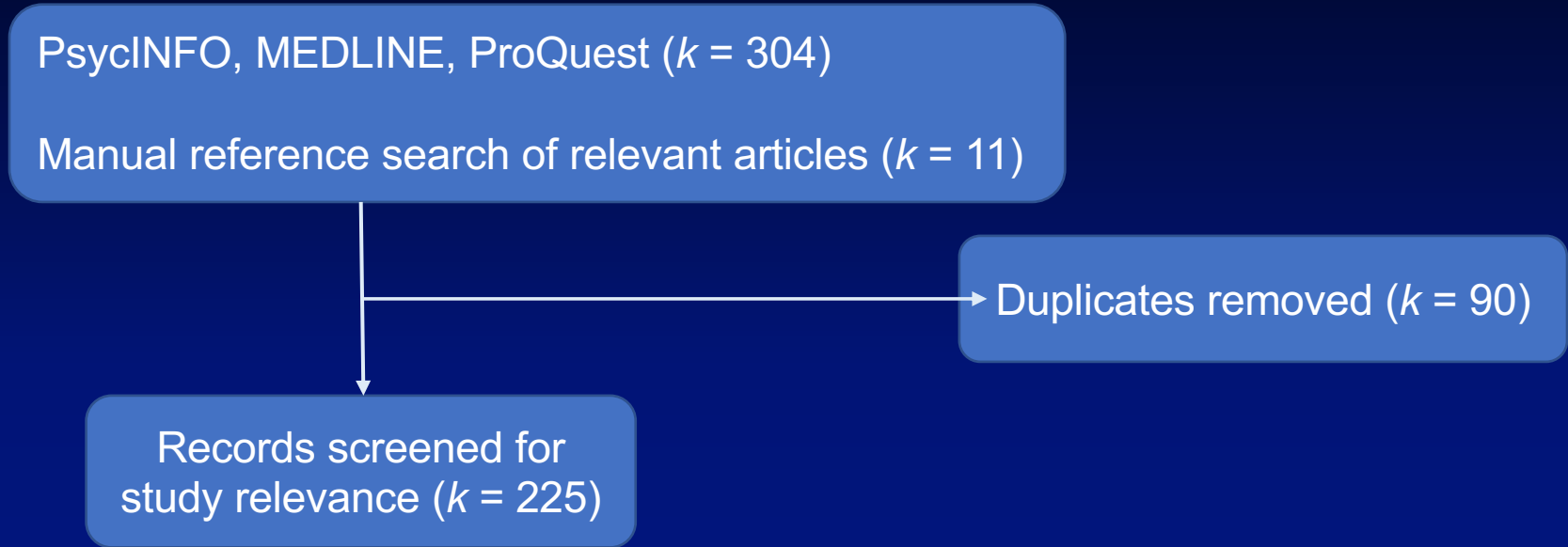
- No control group
- Duplicate samples
- No parenting intervention
- Children > 54 months of age

Methods: Study flow chart

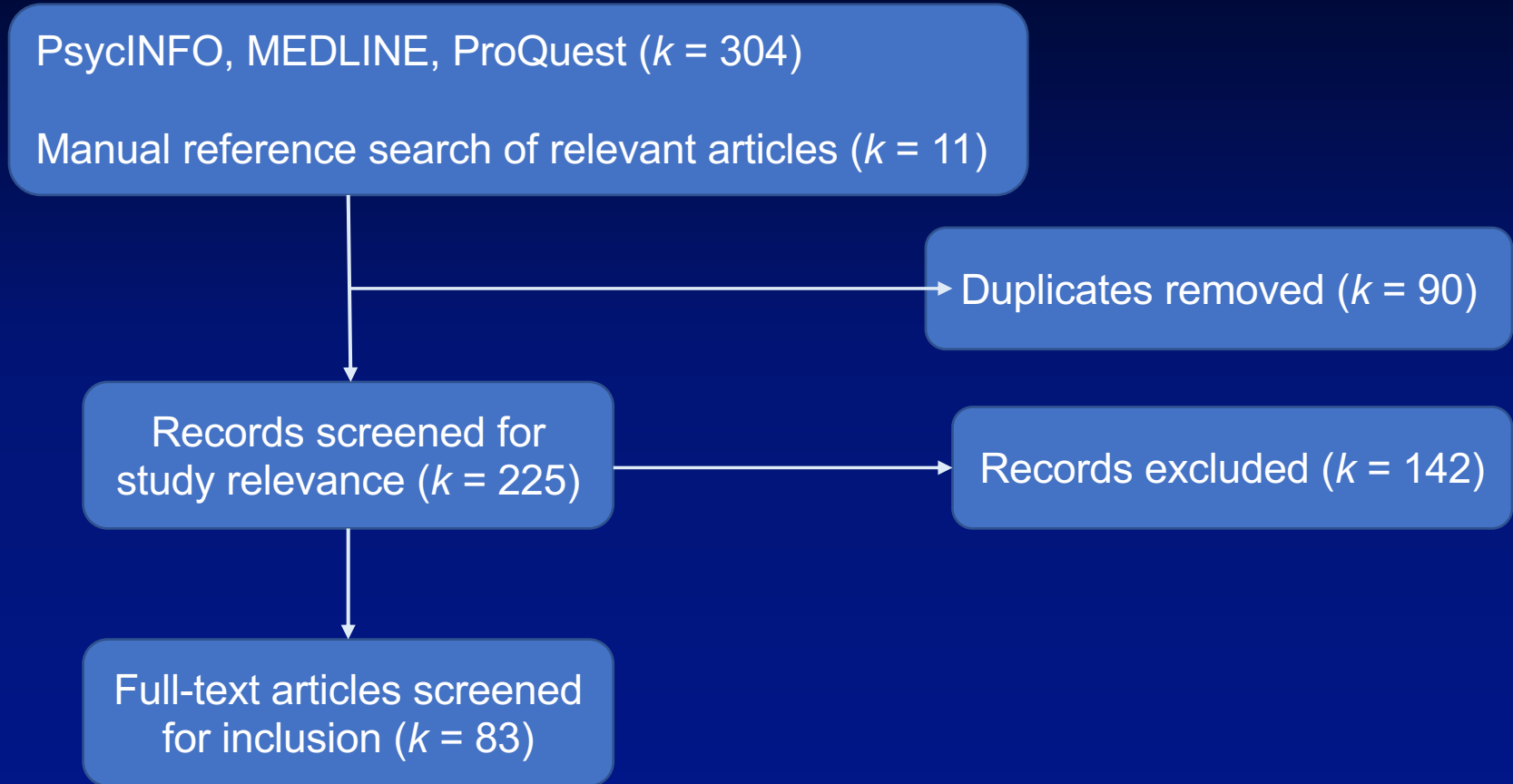
PsycINFO, MEDLINE, ProQuest ($k = 304$)

Manual reference search of relevant articles ($k = 11$)

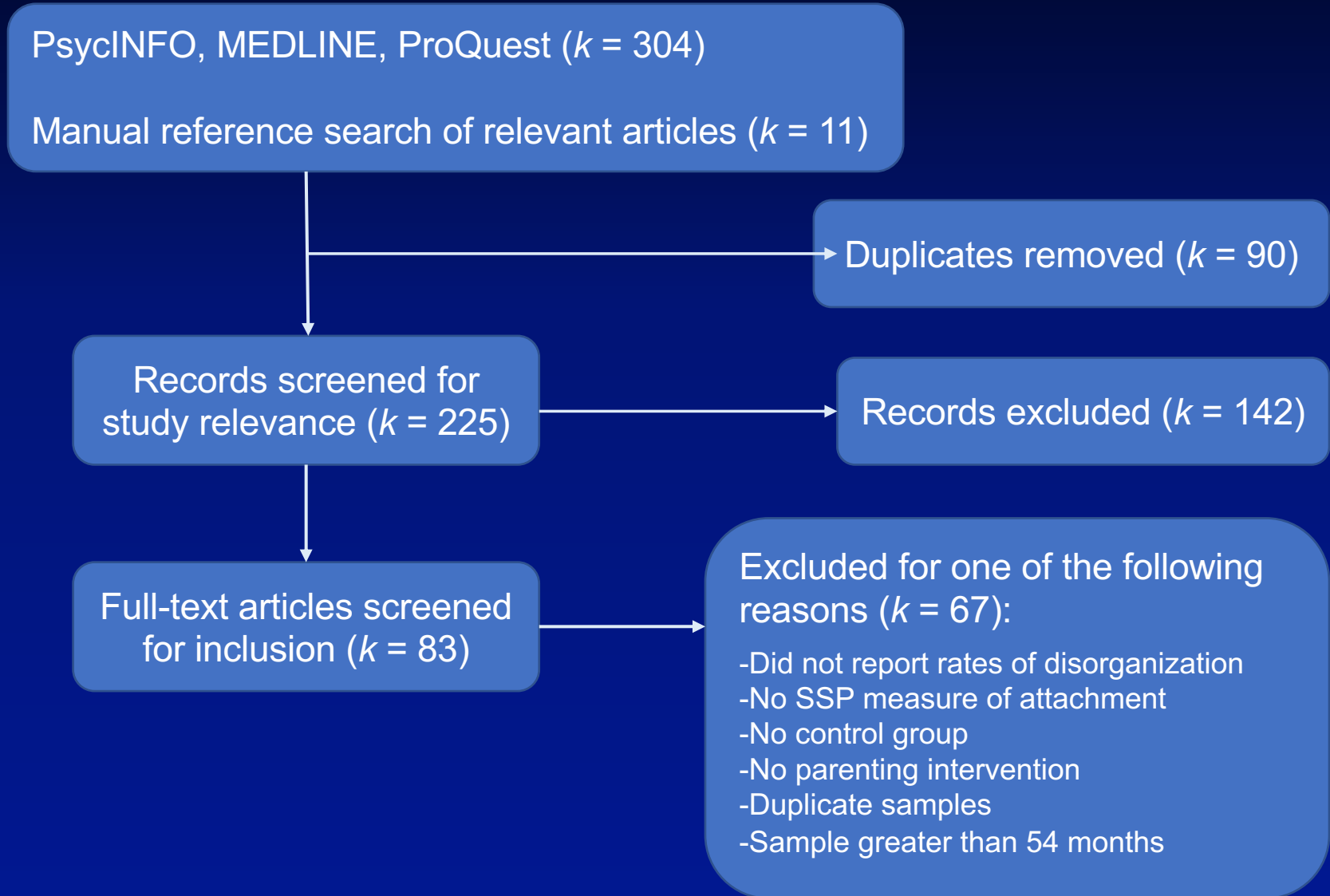
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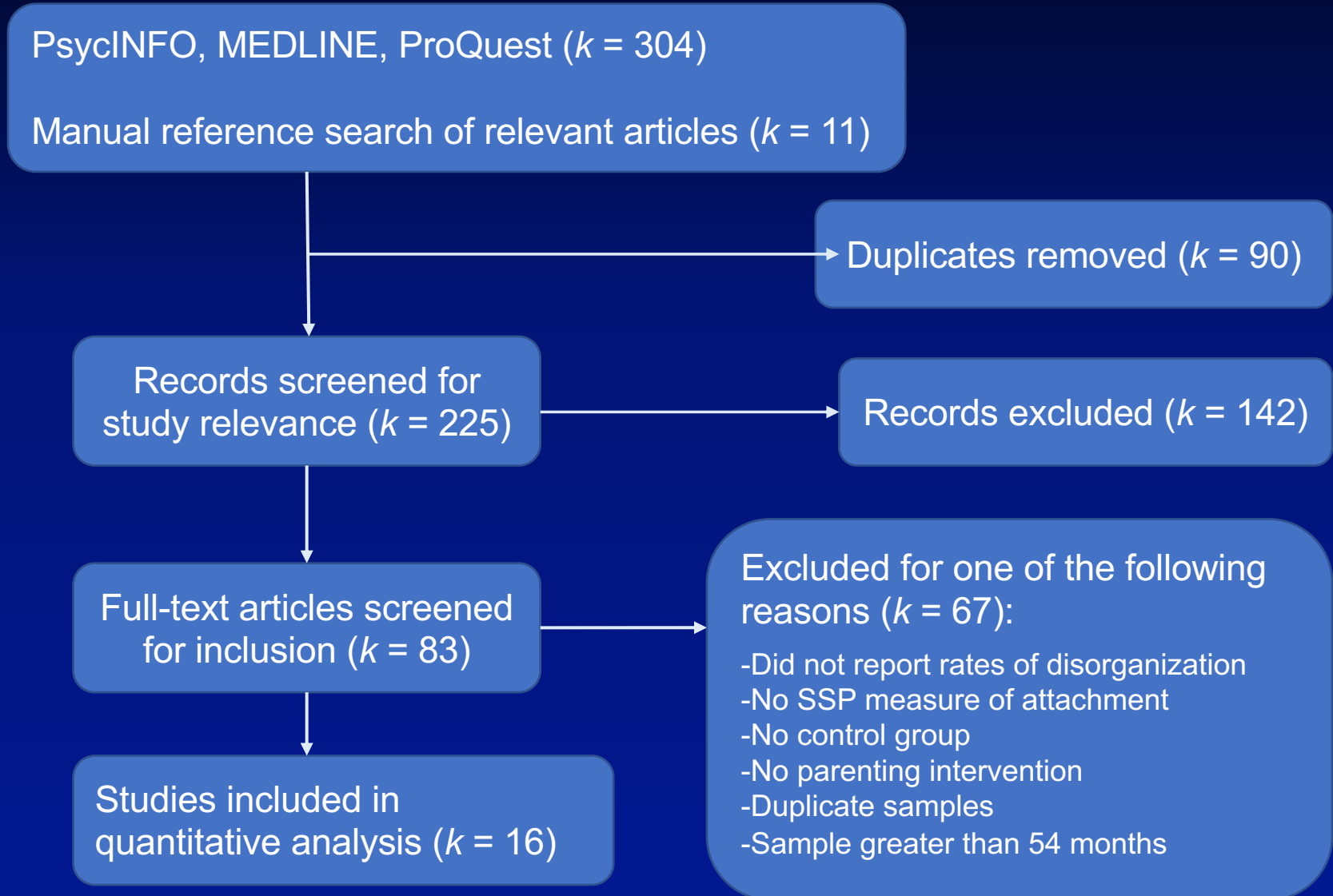
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Methods: Study flow chart



Methods: Coding moderator variables

Sample-level characteristics:

- child maltreatment status
- clinical status
- child age at the start of intervention

Intervention type:

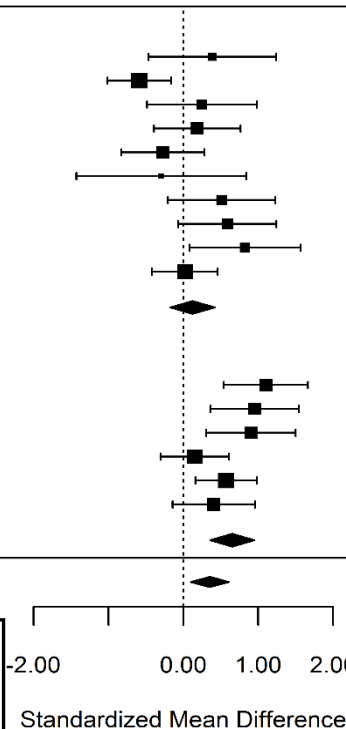
- Sensitivity-based
- Representation-based
- Support-based
- Combination

Methods: Data analysis

- Statistical software R (R Development Core Team, 2015)
 - 'metafor' package (Viechtbauer, 2010)
- Random-effects model (rma)
- Effect sizes calculated using frequency counts of disorganized and organized attachment
- Transformed into the standardized mean difference (Cohen's d)

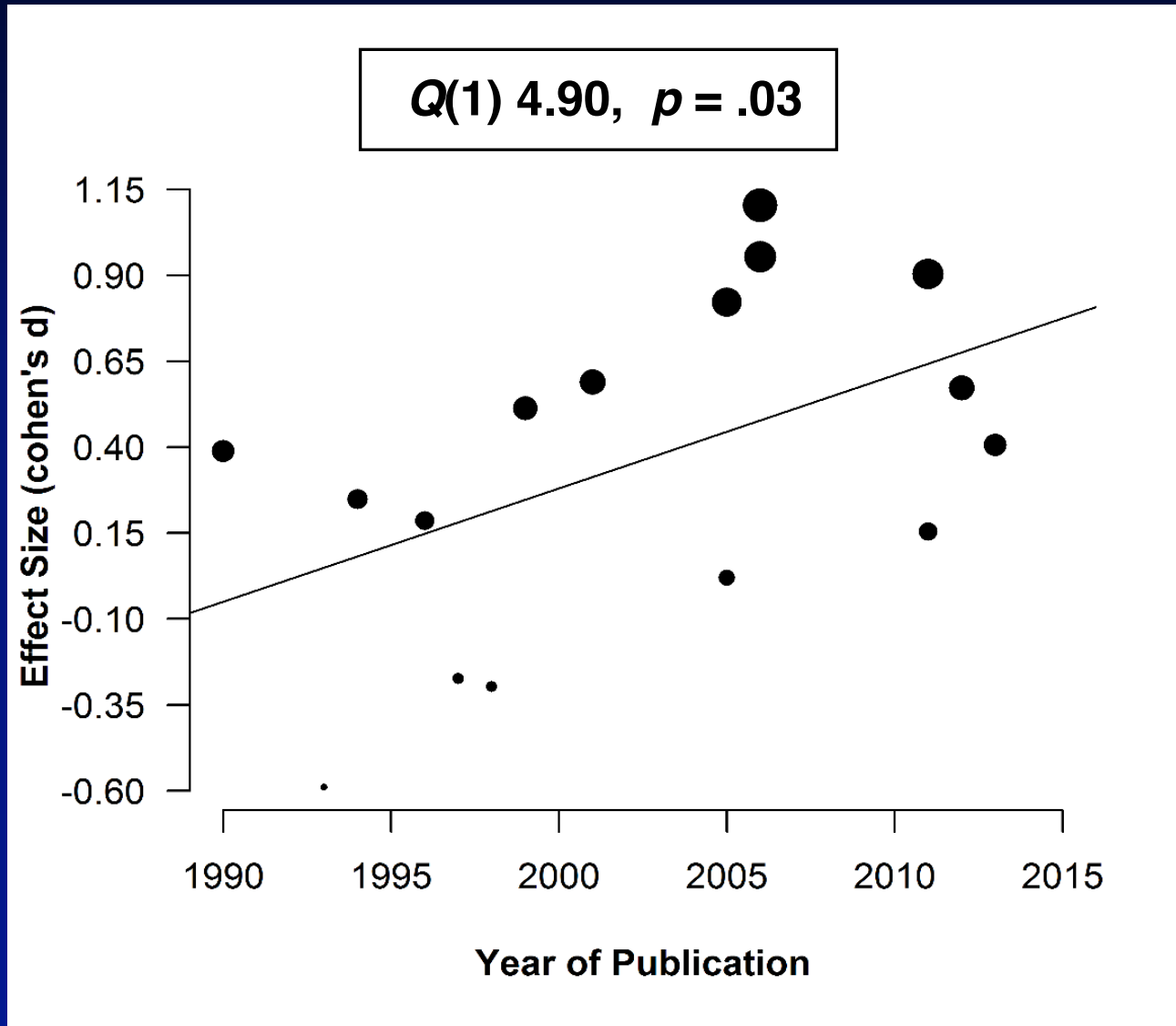
Results: Effect size summary of intervention efficacy

Author(s) and Year	Intervention		Control		Cohen's d [95% CI]
	Disorg	Org	Disorg	Org	
Studies from 1990–2005					
Lyons-Ruth et al., 1990	15	13	7	3	0.39 [-0.46 , 1.24]
Egeland & Erikson, 1993	26	37	14	58	-0.59 [-1.01 , -0.16]
Van den Boom, 1994	4	46	6	44	0.25 [-0.49 , 0.98]
Gelfand et al., 1996	10	21	12	18	0.19 [-0.39 , 0.76]
Cooper & Murray, 1997	11	29	9	39	-0.27 [-0.83 , 0.28]
Bakermans-Kranenburg et al., 1998	3	7	2	8	-0.30 [-1.43 , 0.84]
Heinicke et al., 1999	4	27	9	24	0.51 [-0.20 , 1.23]
Sajaniemi et al., 2001	7	16	14	11	0.59 [-0.07 , 1.24]
Juffer et al., 2005	3	46	11	38	0.82 [0.08 , 1.56]
Moran et al., 2005	28	21	29	21	0.02 [-0.42 , 0.46]
RE Model for Subgroup					0.12 [-0.17 , 0.42]
Studies from 2006–2016					
Cicchetti et al., 2006	9	19	42	12	1.10 [0.54 , 1.67]
Toth et al., 2006	5	41	22	32	0.95 [0.36 , 1.55]
Moss et al., 2011	7	28	18	14	0.90 [0.31 , 1.50]
Cassidy et al., 2011	12	73	15	69	0.15 [-0.30 , 0.61]
Bernard et al., 2012	19	41	34	26	0.57 [0.16 , 0.98]
Sadler et al., 2013	11	30	13	17	0.41 [-0.15 , 0.96]
RE Model for Subgroup					0.65 [0.36 , 0.95]
RE Model for All Studies					0.35 [0.10 , 0.61]



Cohen's $d = 0.35$, 95% CI [0.10, 0.61]

Results: Intervention efficacy over time



Results: Moderation effects

Categorical Moderator analyses using a mixed-effects model

		<i>k</i>	<i>N</i>	β	95%CI	<i>Q</i>	<i>p</i>
Maltreatment status						4.63	.03
No	b_0	12	1053	0.21	[-0.05, 0.46]		
Yes	b_1	4	307	0.56	[0.05, 1.06]		
Clinical status						0.05	.82
No	b_0	12	1073	0.37	[0.08, 0.66]		
Yes	b_1	4	287	-0.07	[-0.67, 0.53]		
Focus						0.95	.33
Other	b_0	6	828	0.26	[-0.06, 0.57]		
Sensitivity only	b_1	10	532	0.25	[-0.26, 0.76]		

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Discussion and future directions:

- Improvement of interventions over time
 - greater understanding of disorganization
 - more focused and targeted intervention strategies
 - research designs that focus on isolating unique components
- Strong effect for maltreated samples
 - Equifinality?
 - increased susceptibility for maltreated children
 - differential effectiveness for abuse and neglect

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- Leiden University research group

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- Marinus H. van IJzendoorn, Ph.D.
- Femmie Juffer, Ph.D.



- All of the research groups whose data were included in this meta-analytic review:

- Bakermans-Kranenburg et al. (1998)
- Bernard et al. (2012)
- Cassidy et al. (2011)
- Cicchetti et al. (2006)
- Cooper & Murray (1997)
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- Van den Boom (1994)

Thank you!

Questions?