

Co-Regulation, Attachment, and Therapeutic Alliance: What Does the Research Say?

1. Introduction

Co-regulation—the dynamic, reciprocal process by which individuals influence and stabilize each other's emotional and physiological states—plays a foundational role in both attachment relationships and the development of a strong therapeutic alliance. Research consistently demonstrates that secure attachment and effective co-regulation are linked to better relationship satisfaction, emotional stability, and positive clinical outcomes. In psychotherapy, the therapeutic alliance is not only shaped by the client's and therapist's attachment styles but is also actively maintained through ongoing co-regulatory processes, such as emotional attunement, physiological synchrony, and collaborative goal-setting. These mechanisms are robust predictors of treatment success across diverse modalities and populations (Soma et al., 2019; Mehmet, 2021; Baier et al., 2020; Marín-Cavestany et al., 2025; Overall & Simpson, 2015; Rotger & Cabré, 2022; Bar-Kalifa et al., 2019; Wiebe & Johnson, 2017; Kleinbub et al., 2020; Zilcha-Mano, 2017; Flückiger et al., 2020; Lindqvist et al., 2023; Iovoli et al., 2025; Flückiger et al., 2018; Wampold & Flückiger, 2023; Friedlander et al., 2018; Karver et al., 2018; Kaiser et al., 2021; Zilcha-Mano & Fisher, 2022; Hilpert et al., 2020; Murray et al., 2023; Slade & Holmes, 2019; Degnan et al., 2016; Wiltshire et al., 2020; Diener & Monroe, 2011; Smith et al., 2010; Kostøl & Kovač, 2023; Bar-Sella et al., 2024; Zack et al., 2015).

2. Methods

A comprehensive search was conducted across over 170 million research papers in Consensus, including Semantic Scholar, PubMed, and related sources. The search strategy included 20 targeted queries across 8 thematic groups, focusing on co-regulation, attachment, therapeutic alliance, synchrony, and related constructs. In total, 959 papers were identified, 675 were screened, 488 were deemed eligible, and the 50 most relevant papers were included in this review.

Search Strategy

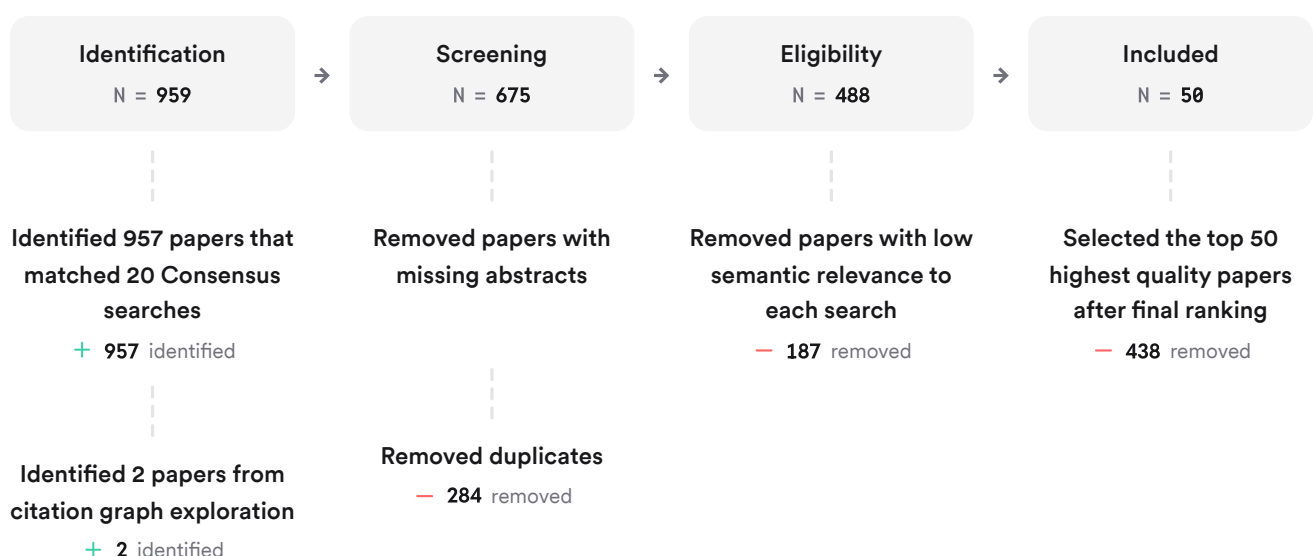


FIGURE 1 Flow of papers through the search and selection process.



Eight unique search groups were used, spanning foundational theory, mechanisms, clinical application, and adjacent constructs to ensure comprehensive coverage.

3. Results

3.1. Co-Regulation in Attachment Relationships

Attachment theory posits that secure attachment is built on a foundation of effective co-regulation, where caregivers provide consistent, attuned responses to a child's emotional and physiological needs. This process fosters emotional stability, resilience, and the capacity for self-regulation in adulthood (Overall & Simpson, 2015; Wiebe & Johnson, 2017; Pietromonaco & Beck, 2019; Slade & Holmes, 2019; Kostøl & Kovač, 2023). Insecure attachment, by contrast, is associated with less effective co-regulation and greater emotional instability (Overall & Simpson, 2015; Pietromonaco & Beck, 2019; Slade & Holmes, 2019; Diener & Monroe, 2011).

3.2. Co-Regulation and the Therapeutic Alliance

The therapeutic alliance—a collaborative, trusting relationship between therapist and client—is strongly influenced by co-regulatory processes. Emotional and physiological synchrony, mutual attunement, and the therapist's ability to provide a "secure base" are all linked to stronger alliances and better outcomes (Soma et al., 2019; Rotger & Cabré, 2022; Bar-Kalifa et al., 2019; Kleinbub et al., 2020; Zilcha-Mano, 2017; Flückiger et al., 2020; Iovoli et al., 2025; Flückiger et al., 2018; Wampold & Flückiger, 2023; Friedlander et al., 2018; Karver et al., 2018; Kaiser et al., 2021; Zilcha-Mano & Fisher, 2022; Hilpert et al., 2020; Murray et al., 2023; Degnan et al., 2016; Wiltshire et al., 2020; Smith et al., 2010; Kostøl & Kovač, 2023; Bar-Sella et al., 2024; Zack et al., 2015). Both client and therapist attachment styles contribute to the quality of the alliance, with secure attachment and strong self-regulation skills predicting more robust alliances (Mehmet, 2021; Marín-Cavestany et al., 2025; Rotger & Cabré, 2022; Degnan et al., 2016; Diener & Monroe, 2011; Ruiz-Aranda et al., 2021).

3.3. Mechanisms: Emotional and Physiological Synchrony

Recent studies highlight the role of **emotional and physiological synchrony**—such as heart rate variability, electrodermal activity, and vocal arousal—in co-regulation during therapy. These synchrony processes are associated with empathy, alliance strength, and session outcomes (Soma et al., 2019; Bar-Kalifa et al., 2019; Kleinbub et al., 2020; Hilpert et al., 2020; Wiltshire et al., 2020; Coutinho et al., 2020). Dyadic regulation, including both in-phase and antiphase synchrony, is observed in both romantic and therapeutic relationships (Soma et al., 2019; Overall & Simpson, 2015; Bar-Kalifa et al., 2019; Wiltshire et al., 2020; Coutinho et al., 2020).

3.4. Co-Regulation as a Mechanism of Change

Meta-analyses and systematic reviews confirm that the therapeutic alliance mediates treatment outcomes, and that co-regulation is a key mechanism underlying this effect (Baier et al., 2020; Rotger & Cabré, 2022; Zilcha-Mano, 2017; Flückiger et al., 2020; Lindqvist et al., 2023; Flückiger et al., 2018; Wampold & Flückiger, 2023; Friedlander et al., 2018; Karver et al., 2018; Kaiser et al., 2021; Zilcha-Mano & Fisher, 2022; Hilpert et al., 2020; Murray et al., 2023; Slade & Holmes, 2019; Degnan et al., 2016; Wiltshire et al., 2020; Diener & Monroe, 2011; Smith et al., 2010; Kostøl & Kovač, 2023; Bar-Sella et al., 2024; Zack et al., 2015). Improvements in alliance and co-regulation are reciprocally linked to symptom reduction and emotional well-being (Flückiger et al., 2020; Lindqvist et al., 2023; Iovoli et al., 2025; Flückiger et al., 2018; Karver et al., 2018; Zilcha-Mano & Fisher, 2022; Hilpert et al., 2020; Bar-Sella et al., 2024).

Key Papers

Paper	Focus	Methodology	Key Results
(Soma et al., 2019)	Therapist-client emotion coregulation	Dynamic systems, vocal analysis	Bidirectional emotional linkage stabilizes emotions in therapy
(Bar-Kalifa et al., 2019)	Physiological synchrony & alliance	EDA, open trial	Synchrony during emotion-focused work predicts therapeutic bond
(Overall & Simpson, 2015)	Attachment & dyadic regulation	Review	Partner regulation improves insecure individuals' satisfaction/security
(Flückiger et al., 2020)	Alliance-symptom reciprocity	Meta-analysis	Alliance and symptoms reciprocally influence each other in early therapy
(Flückiger et al., 2018)	Alliance-outcome meta-analysis	Meta-analysis (295 studies)	Robust positive relation between alliance and outcome ($r = .28$)

FIGURE 2 Comparison of key studies on co-regulation, attachment, and therapeutic alliance.

Top Contributors

Type	Name	Papers
Author	C. Flückiger	(Flückiger et al., 2020; Flückiger et al., 2018; Hilpert et al., 2020)
Author	S. Zilcha-Mano	(Zilcha-Mano, 2017; Zilcha-Mano & Fisher, 2022; Bar-Sella et al., 2024)
Author	K. Berry	(Hartley et al., 2019; Browne et al., 2019; Degnan et al., 2016)
Journal	<i>Psychotherapy</i>	(Iovoli et al., 2025; Flückiger et al., 2018; Friedlander et al., 2018; Karver et al., 2018; Diener & Monroe, 2011; Zack et al., 2015)
Journal	<i>Journal of counseling psychology</i>	(Bar-Kalifa et al., 2019; Kleinbub et al., 2020; Hilpert et al., 2020; Bar-Sella et al., 2024)
Journal	<i>Clinical psychology review</i>	(Baier et al., 2020; Browne et al., 2019; Smith et al., 2010; Martins et al., 2025)



FIGURE 3 Authors & journals that appeared most frequently in the included papers.

4. Discussion

The literature provides strong evidence that **co-regulation is a core mechanism in both attachment relationships and the therapeutic alliance**. Secure attachment and effective co-regulation foster emotional stability, resilience, and positive relational outcomes, while insecure attachment and poor co-regulation are linked to emotional dysregulation and weaker alliances (Overall & Simpson, 2015; Pietromonaco & Beck, 2019; Slade & Holmes, 2019; Diener & Monroe, 2011; Smith et al., 2010). In psychotherapy, the alliance is both a product and a facilitator of co-regulation, with emotional and physiological synchrony serving as measurable indicators of this process (Soma et al., 2019; Bar-Kalifa et al., 2019; Kleinbub et al., 2020; Hilpert et al., 2020; Wiltshire et al., 2020; Coutinho et al., 2020).

Meta-analyses confirm that the alliance robustly predicts treatment outcomes across modalities and populations (Baier et al., 2020; Zilcha-Mano, 2017; Flückiger et al., 2020; Lindqvist et al., 2023; Flückiger et al., 2018; Wampold & Flückiger, 2023; Friedlander et al., 2018; Karver et al., 2018; Kaiser et al., 2021; Zilcha-Mano & Fisher, 2022; Hilpert et al., 2020; Murray et al., 2023; Slade & Holmes, 2019; Degnan et al., 2016; Wiltshire et al., 2020; Diener & Monroe, 2011; Smith et al., 2010; Kostøl & Kovač, 2023; Bar-Sella et al., 2024; Zack et al., 2015). The reciprocal relationship between alliance and symptom improvement suggests that co-regulation is not only foundational but also dynamic, evolving throughout the course of therapy (Flückiger et al., 2020; Lindqvist et al., 2023; Iovoli et al., 2025; Flückiger et al., 2018; Karver et al., 2018; Zilcha-Mano & Fisher, 2022; Hilpert et al., 2020; Bar-Sella et al., 2024). However, the field would benefit from more research on co-regulation in diverse contexts (e.g., online therapy, group settings, non-Western populations) and on interventions that explicitly target co-regulatory processes.

Claims and Evidence Table

Claim	Evidence Strength	Reasoning	Papers
Co-regulation is foundational to secure attachment	 Strong	Strong theoretical and empirical support	(Overall & Simpson, 2015; Wiebe & Johnson, 2017; Pietromonaco & Beck, 2019; Slade & Holmes, 2019; Kostøl & Kovač, 2023)
Co-regulation underpins the therapeutic alliance	 Strong	Robust evidence from synchrony, alliance, and outcome studies	(Soma et al., 2019; Rotger & Cabré, 2022; Bar-Kalifa et al., 2019; Kleinbub et al., 2020; Zilcha-Mano, 2017; Flückiger et al., 2020; Iovoli et al., 2025; Flückiger et al., 2018; Wampold & Flückiger, 2023; Friedlander et al., 2018; Karver et al., 2018; Kaiser et al., 2021; Zilcha-Mano & Fisher, 2022; Hilpert et al., 2020; Murray et al., 2023; Degnan et al., 2016; Wiltshire et al., 2020; Smith et al., 2010; Kostøl & Kovač, 2023; Bar-Sella et al., 2024; Zack et al., 2015)
Emotional/physiological synchrony predicts alliance strength	 Strong	Synchrony linked to empathy, alliance, and outcomes	(Soma et al., 2019; Bar-Kalifa et al., 2019; Kleinbub et al., 2020; Hilpert et al., 2020; Wiltshire et al., 2020; Coutinho et al., 2020)
Secure attachment and self-regulation predict stronger alliances	 Strong	Meta-analyses and correlational studies	(Mehmet, 2021; Marín-Cavestany et al., 2025; Rotger & Cabré, 2022; Degnan et al., 2016; Diener & Monroe, 2011; Ruiz-Aranda et al., 2021)
Alliance mediates treatment outcomes	 Strong	Meta-analyses and systematic reviews	(Baier et al., 2020; Zilcha-Mano, 2017; Flückiger et al., 2020; Lindqvist et al., 2023; Flückiger et al., 2018; Wampold & Flückiger, 2023; Friedlander et al., 2018; Karver et al., 2018; Kaiser et al., 2021; Zilcha-Mano & Fisher, 2022; Hilpert et al., 2020; Murray et al., 2023; Slade & Holmes, 2019; Degnan et al., 2016; Wiltshire et al., 2020; Diener & Monroe, 2011; Smith et al., 2010; Kostøl & Kovač, 2023; Bar-Sella et al., 2024; Zack et al., 2015)


Claim	Evidence Strength	Reasoning	Papers
More research needed on co-regulation in diverse contexts	 Moderate	Gaps in online, group, and cross-cultural research	(Rotger & Cabré, 2022; Pihlaja et al., 2017; Kaiser et al., 2021; Murray et al., 2023; Babatunde et al., 2017)

FIGURE Key claims and support evidence identified in these papers.

5. Conclusion

Co-regulation is a central mechanism linking attachment and the therapeutic alliance, with strong evidence supporting its role in emotional stability, relationship quality, and treatment outcomes. The alliance is both a product and facilitator of co-regulation, and synchrony processes are measurable indicators of this dynamic.

Research Gaps

Topic/Context	Adult Therapy	Child/Parent	Online/Remote	Group/Family	Physiological Measures
Co-regulation & alliance	8	6	3	4	5
Attachment & synchrony	7	7	2	3	4
Interventions targeting co-regulation	5	4	2	2	2

FIGURE Matrix of research topics and study attributes, highlighting areas with fewer studies.

Open Research Questions

Question	Why
How can co-regulation be effectively measured and enhanced in online and group therapy settings?	Expanding research to new modalities will improve access and effectiveness.
What are the neurobiological mechanisms linking co-regulation, attachment, and alliance?	Understanding mechanisms can inform targeted interventions and training.
How do cultural and developmental factors influence co-regulation and alliance formation?	Addressing diversity will improve generalizability and clinical relevance.

FIGURE Key open research questions for future investigation.

In summary, co-regulation is a vital, empirically supported process at the heart of both attachment and the therapeutic alliance, with significant implications for clinical practice and future research.

These papers were sourced and synthesized using Consensus, an AI-powered search engine for research. Try it at <https://consensus.app>

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