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Die Untersuchung der Bindungsentwicklung- Analyse einer Präventionsmaßnahme

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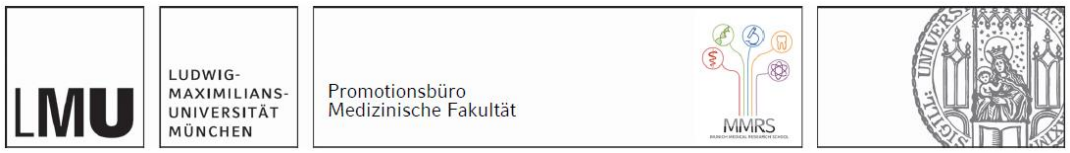

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Inhaltsverzeichnis

Abkürzungsverzeichnis

AAI	Adult Attachment Interview
AAP	Attachment Assessment Projective Picture System
ACE	Adverse Childhood Experiences
BDI	Beck-Depressions-Inventar
CG	Control Group
FB-Z	Zweierbeziehungsbogen
GASCP	German Attachment Story Completion Procedure
PDS	Post Traumatic Stress Scale
PFB	Partnerschaftsfragebogen
PPA	Per-Protocol-Analysis
PTSD	Post Traumatic Stress Disorder
SAFE	Sichere Ausbildung für Eltern
SSP	Strange Situation Procedure
TAQ	Traumatic Antecedents Questionnaire

Publikationsliste

Publikation I

Walter, I., Landers, S., Quehenberger, J., Carlson, E., & Brisch, K.H. (2019). The efficacy of the attachment-based SAFE prevention program: a randomized control trial including mothers and fathers. *Attachment & Human Development, 21*(5), 510-531. https://doi.org/10.1080/14616734.2019.1582599.

ISI Web of Knowledge: Attachment & Human Development

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Publikation II

Walter, I., Quehenberger, J., Landers, S., & Brisch, K.H. (2024). Attachment-based Prevention Program Involving Mothers and Fathers: Seven-year Post-Intervention Outcomes of a Randomized Control Trial. *Journal of Child and Family Studies*, 33, 538-553. https://doi.org/10.1007/s10826-023-02762-2.

ISI Web of Knowledge: Journal of Child and Family Studies

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Weitere Veröffentlichungen

Walter, I., Landers, S., Quehenberger, J., Beck, A., Forstner, B., & Brisch, K.H. (2016, May 29th - 2nd June). The Influence of Parental Reflective Functioning on Children's Attachment Security at Age 7. Poster presented at the 15th World Congress of WAIMH, Prague, Czech Republic.

Walter, I., Landers, S., Meinardi-Weichhart, L., Beck, A., Forstner, B., & Brisch, K.H (2018, May 26th – 30th). The Impact of the Attachment-based Parenting Program SAFE on Mothers' Emotional Availability. Poster presented at the 16th World Congress of WAIMH, Rome, Italy.

1. Eigener Beitrag zu den Veröffentlichungen

1.1 Beitrag zu Publikation I

Als Erstautorin habe ich das Konzept dieser Veröffentlichung entwickelt. Mein Beitrag umfasste insbesondere die Durchführung einer umfassenden Literaturrecherche sowie die Ausarbeitung des theoretischen Hintergrunds. Auf dieser Grundlage habe ich die zentrale Fragestellung der Veröffentlichung formuliert und die entsprechenden Forschungshypothesen abgeleitet. Die in der Publikation verwendeten Daten stammen aus der SAFE-Evaluationsstudie, die zwischen 2006 und 2013 am Dr. von Haunerschen Kinderspital des Klinikums der LMU München durchgeführt wurde. Gemeinsam mit Dr. Swinde Landers habe ich die Auswahl, Aufbereitung und statistische Analyse der Daten vorgenommen. Darüber hinaus war ich für die Interpretation der Ergebnisse verantwortlich und habe diese kritisch im Hinblick auf die zentralen Hypothesen und Forschungsfragen diskutiert. Dies beinhaltete auch die Erarbeitung der Limitationen der Studie und die Ableitung daraus resultierender Schlussfolgerungen. Der gesamte Arbeitsprozess wurde von Prof. Dr. Karl Heinz Brisch, dem Hauptverantwortlichen für die gesamte Längsschnitt-Studie, sowie Dr. Swinde Landers supervidiert. Das Manuskript habe ich verfasst, die Tabellen und Abbildungen erstellt. Ebenso habe ich die Reviews der Ko-Autoren in das Manuskript eingearbeitet, das überarbeitete Dokument eingereicht und den Peer-Review-Prozess unter der Supervision von Prof. Dr. Karl Heinz Brisch koordiniert

1.2 Beitrag zu Publikation II

Als Erstautorin dieser Publikation habe ich das Konzept der Veröffentlichung entwickelt. Mein Beitrag umfasste die Durchführung einer umfassenden Literaturrecherche und die Ausarbeitung des theoretischen Hintergrunds, auf dessen Basis die zentrale Fragestellung sowie die entsprechenden Forschungshypothesen abgeleitet wurden. Die zugrunde liegenden Daten stammen aus der Follow-Up Untersuchung der SAFE-Evaluationsstudie, die zwischen 2014 bis 2019 am Dr. von Haunerschen Kinderspital des Klinikums der LMU München durchgeführt wurde. Im Rahmen der Studie war ich hauptverantwortlich für die Stichprobenpflege, um die Motivation der Teilnehmenden aufrechtzuerhalten, sowie für die Rekrutierung der StudienteilnehmerInnen. Die Datenerhebung, die insgesamt 71 Mütter, 58 Väter und 72 Kinder umfasste, wurde von mir durchgeführt und supervidiert. Dazu zählten die Durchführung des Geschichtenergänzungsverfahrens, der Interviews sowie die Erfassung von Fragebogendaten. Die erhobenen Daten wurden von mir in SPSS erfasst, für die Analyse aufbereitet und statistisch ausgewertet. Darüber hinaus habe ich die gewonnenen Ergebnisse interpretiert, kritisch diskutiert und die daraus abgeleiteten Schlussfolgerungen formuliert. Das Manuskript der Publikation wurde von mir verfasst, einschließlich der Erstellung von Tabellen und Abbildungen. Nach sorgfältiger Abstimmung mit den Ko-Autoren wurden deren Reviews eingearbeitet. Die Auswahl des Journals habe ich in Absprache mit Prof. Dr.

Karl Heinz Brisch, dem Hauptverantwortlichen für die gesamte Längsschnitt-Studie, vorgenommen. Der Peer-Review-Prozess wurde unter der Supervision von Prof. Dr. Karl Heinz Brisch koordiniert. Abschließend oblag mir die Verantwortung für die Überarbeitungen im Peer-Review-Prozess sowie die Finalisierung der Veröffentlichung.

2. Einleitung

> Der Kern des Menschseins ist das Streben nach Zugehörigkeit und Bindung, nach Gewollt- und Gemochtwerden, Angenommen- und Aufgehobensein, nach sozialer und emotionaler Sicherheit.
> (Ahlers, 2017, S.17)

In einer Welt, die zunehmend schneller und komplexer wird und in der Krisen zur täglichen Realität gehören, gewinnt der Wunsch nach Sicherheit und Schutz immer mehr an Bedeutung. Eines der zentralen und existenziell wichtigsten psychischen Grundbedürfnisse des Menschen ist die Bindung zu anderen Menschen (Grawe, 2004). Besonders in unsicheren Zeiten stellt eine sichere Bindung zu wichtigen Bezugspersonen eine wertvolle Quelle von Sicherheit dar, die Nähe und Unterstützung bietet. Wird unser Grundbedürfnis nach Bindung frustriert, leidet unser Wohlbefinden. Insbesondere in der frühen Kindheit kann die Frustration dieses Bedürfnisses zur Entwicklung von maladaptiven Bewältigungsmustern und dysfunktionalen Grundannahmen führen, die einen Nährboden für psychische Erkrankungen darstellen können (Grawe, 2004). Im Säuglingsalter kann eine Bindungsdeprivation im Extremfall sogar den Tod bedeuten (Zarbock, 2020). Soziale Unterstützung gilt andererseits als einer der wichtigsten und am besten untersuchten Resilienzfaktoren, also als ein Faktor, der sich positiv auf die psychische Widerstandkraft auswirkt (Bengel & Lyssenko, 2012; Gilan & Helmreich, 2021). Eine sichere Bindung kann als ein wichtiger transdiagnostischer Schutzfaktor für unser psychisches Wohlbefinden über die gesamte Lebensspanne betrachtet werden (Ziegenhain, 2024).

In der vorliegenden Arbeit wird die Frage untersucht, inwiefern eine sichere Bindung zwischen Eltern und ihren Kindern durch frühe Intervention gefördert werden kann. Beide Publikationen widmen sich der Evaluation des primären Präventionsprogramms SAFE (Sichere Ausbildung für Eltern; Brisch, 2010/2022), das darauf abzielt, eine sichere Bindung zwischen Eltern und ihren Kindern zu fördern und die Weitergabe von unverarbeiteten Traumata zu unterbrechen. Als universelles Präventionsprogramm richtet es sich gezielt an werdende Mütter und Väter in der Allgemeinbevölkerung, unabhängig von spezifischen Risikofaktoren. Neben der sicheren Bindungsentwicklung ist die Partnerschaft der Eltern ein zentrales Thema im Programm. Nach aktuellem Kenntnisstand gibt es in Deutschland kein vergleichbares bindungsorientiertes Präventionsprogramm, das sowohl die Förderung einer sicheren Mutter-Kind- und Vater-Kind-Bindung als auch die Stärkung der elterlichen Partnerschaftsqualität integriert. Die Intervention beginnt während der Schwangerschaft und endet nach dem ersten Geburtstag des Kindes. Sie umfasst zehn Gruppen- und drei Einzelterminen. In der SAFE-Evaluationsstudie, einer randomisierten Studie, wurde das bindungsbasierte Programm mit einer aktiven Kontrollgruppe verglichen, die keinen Fokus auf die Themen sichere Bindung und Partnerschaft legte. Die Rahmenbedingungen der

Kontrollgruppe entsprachen denen der SAFE-Gruppe. In beiden Publikationen präsentieren wir die Ergebnisse der randomisiert kontrollierten Längsschnittstudie. In der ersten Publikation zeigen wir die Ergebnisse zu den Daten, die unmittelbar nach der beendeten Teilnahme am Kurs, als die Kinder 12 bzw. 14 Monate alt waren, erfasst wurden. Die zweite Publikation umfasst Ergebnisse der Daten aus der SAFE-Längsschnittstudie. Die Daten wurden sechs Jahre nach der Kursteilnahme, als die Kinder sieben Jahre alt waren, erfasst. Im folgenden Abschnitt soll zunächst die Relevanz der Prävention erläutert werden.

2.1 Prävention

Die Weltgesundheitsorganisation (WHO) sieht die Prävention psychischer Erkrankungen als eine ihrer zentralen Aufgaben (WHO, 2004). Die Relevanz der Prävention wird durch aktuelle Daten zur psychischen Gesundheit in Deutschland verdeutlicht: Jährlich leiden 27,8% der erwachsenen Bevölkerung unter einer psychischen Erkrankung und die Tendenz ist steigend (DGPPN, 2024). Auch bei Kindern und Jugendlichen ist eine Zunahme psychischer Auffälligkeiten zu beobachten. So wiesen im Jahr 2022 23% der jungen Bevölkerung psychische Auffälligkeiten auf, wobei auch hier eine steigende Tendenz erkennbar ist (Napp et al., 2024).

Das Ziel von primärer Prävention ist die Förderung der Gesundheit, die Senkung des Risikos für die Entstehung von Krankheiten und die Reduktion der Krankheitslast in einer Gesellschaft. Damit leistet sie einen wichtigen Beitrag zur Verbesserung der Lebensqualität, sowohl individuell als auch gesamtgesellschaftlich (Habermann-Horstmeier & Lippke, 2021). Das Modell der Salutogenese bietet hierbei eine zusätzliche Perspektive auf Krankheit und Gesundheit. Der Medizinsoziologie Aaron Antonovsky lieferte mit seinem Konzept eine theoretische Grundlage zur Beantwortung der Frage wie Menschen trotz Risiken und Stressoren gesund bleiben können und wie stressreiche Erfahrungen erfolgreich bewältigt werden können. Gesundheit und Krankheit werden dabei als multidimensionales Kontinuum betrachtet, auf dem physische, psychische und soziale Aspekte in dynamischer Wechselwirkung stehen (Faltermaier, 2023). Die Förderung von Gesundheit und die Prävention von Krankheiten lassen sich als komplementäre Strategien verstehen (Prümel-Philippsen & Grossmann, 2021). Fundiertes Wissen über die Ätiologie, Pathogenese sowie krankheitsauslösende und -bedingende Faktoren ermöglicht es, Risikofaktoren gezielt durch Präventionsmaßnahmen zu adressieren (Hahlweg & Heinrichs, 2007). Diese wissenschaftlichen Erkenntnisse über das komplexe Bedingungsgefüge, das der Entstehung und dem Verlauf von Krankheiten zugrunde liegt, bilden eine solide Basis für wirksame präventive Maßnahmen und Gegenstrategien (Bengel & Lyssenko, 2012; Roch & Hampel, 2022). Die Primärprävention richtet sich an gesunde Personen ohne manifeste Symptomatik, bei denen keine Schädigungen oder Krankheiten aufgetreten sind (Habermann-Horstmeier & Lippke, 2021). Da viele Bedingungs- oder Risikofaktoren unspezifische und multiple Auswirkungen auf ein breites Spektrum von Erkrankungen haben, zielt die primäre

Prävention weniger auf die Verhinderung einzelner Krankheiten ab, sondern vielmehr auf die Verhinderung ganzer Krankheitsspektren (Bengel & Lyssenko, 2012).

Ein wichtiger Aspekt ist die Senkung von Therapie- und Folgekosten durch präventive Maßnahmen, die Erkrankungen wirksam verhindern (Krauth & Oedingen, 2021). Da die Ressourcen im Gesundheitssystem begrenzt sind, ist deren gezielte und effektive Nutzung unerlässlich (Flessa, 2022). Vor diesem Hintergrund ist es ethisch geboten, evidenzbasierte Präventionsprogramme zu priorisieren (Hammerschmidt, 2022). Programme, deren Wirksamkeit wissenschaftlich belegt ist, bieten die besten Chancen, psychische Erkrankungen effektiv zu verhindern und vorhandene Ressourcen optimal zu nutzen. So kann Prävention entscheidend zur langfristigen Verbesserung der psychischen Gesundheit der Bevölkerung beitragen (WHO, 2004).

2.2 Bindung als Ansatzpunkt für primäre Prävention

Die Förderung einer sicheren Eltern-Kind-Bindung kann als eine wertvolle primäre Präventionsmaßnahme gesehen werden, da eine sichere Bindung als ein wichtiger transdiagnostischer Schutzfaktor über die gesamte Lebensspanne betrachtet werden kann (Ziegenhain, 2024). Die Bindungstheorie wurde in den 1950er Jahren von John Bowlby entwickelt und seitdem durch zahlreiche empirische Studien, insbesondere durch Längsschnittstudien von der Schwangerschaft bis zum Erwachsenenalter, bestätigt und weiterentwickelt. Heute wissen wir, dank einer breiten empirischen Grundlage, dass eine sichere Bindung eine wichtige Ressource für eine gesunde Entwicklung auf kognitiver, emotionaler und sozialer Ebene darstellt (Kerns, et al., 2007; Pallini et al., 2018; Ziegenhain, 2024). Im Gegensatz dazu stellt eine unsichere Bindung einen unspezifischen Risikofaktor dar, der verschiedene Entwicklungsprobleme begünstigen kann (Contreras et al., 2000; Jacobsen, & Hofmann, 1997; Keller et al., 2005).

Bindung beschreibt ein emotionales Band, das ein Kind zu seinen primären Bezugspersonen, meist den Eltern, aufbaut (Bowlby, 1969/2006; 1980/2006). Das Bindungssystem ist, laut Bowlby, angeboren und dient dem Überleben des Säuglings. Durch dieses Verhaltenssystem drücken Säuglinge und Kinder aktiv ihre Bedürfnisse, wie z.B. nach Nahrung und Nähe aus. Die Qualität der Bindung ist abhängig von den frühen Interaktionserfahrungen mit der primären Bezugsperson (Ainsworth et al., 1978; Bowlby, 1980/2006).

Das sogenannte innere Arbeitsmodell der Bindung speichert kognitive und emotionale Repräsentationen des Selbst, anderer Menschen und zwischenmenschlicher Beziehungen (Bretherton, 2012; Fremmer-Bombik, 2011). Es basiert auf wiederholten Erfahrungen und stellt eine kognitiv-affektive Einheit dar, die generalisiertes Wissen in Form von Abstraktionen über typische Abläufe zwischenmenschlicher Interaktionen gespeichert hat (Bowlby, 1969/2006; Main et al., 1985). Das innere Arbeitsmodell dient dazu, Verhalten zu interpretieren, Vorhersagen über mögliche Verhaltensweisen zu treffen und zukünftiges

Verhalten zu initiieren (Bretherton, 2002; Bretherton & Munholland, 2008; Bretherton, 2012). Damit bildet es die Grundlage für die sozioemotionale Entwicklung des Selbst (Bowlby, 1969/2006). Die wiederholte Interaktionserfahrung führt zur Entwicklung unterschiedlicher Arbeitsmodelle der Bindung. Es werden vier Arbeitsmodelle der Bindung bzw. Bindungsrepräsentationen unterschieden: Die sichere Bindung, die unsicher-vermeidende, die unsicher-ambivalente und die desorganisierte Bindung. Diese Bindungsmuster spiegeln wider, wie zwischenmenschliche Beziehungen wahrgenommen und erlebt werden (Grossmann, 2008; Bretherton, 2010).

Das innere Arbeitsmodell einer sicheren Bindung zeichnet sich durch die Erwartung aus, dass Bezugspersonen verfügbar sind und Unterstützung bieten. Zwischenmenschliche Beziehungen werden hier als Quelle von Schutz und Sicherheit wahrgenommen, was wiederum das Selbstkonzept prägt: Die Überzeugung, liebenswert zu sein und Fürsorge verdient zu haben, steht im Vordergrund. Besonders in stressigen Situationen reagiert die Bezugsperson zuverlässig und feinfühlig auf die kindlichen Signale, indem sie Trost und Sicherheit spendet. Sie fungiert dadurch als sicherer Hafen, der dem Kind hilft, unangenehme Emotionen zu regulieren. Die wiederkehrenden Erfahrungen der Verlässlichkeit ermöglichen es dem Kind, seine Bezugsperson als sichere Basis zu nutzen, von der aus es die Welt vertrauensvoll und neugierig erkunden kann (Fonagy, 2005; Gloger-Tippelt, 2008; Schölmerich & Lenging, 2008).

Hat ein Kind wiederholt die Erfahrung gemacht, dass die Bezugsperson wenig erreichbar, wenig zuverlässig oder inkonsistent auf die eigenen Bedürfnisse reagiert, entwickelt es ein unsicheres Arbeitsmodell der Bindung (Grossman, 2008; Solomon & George, 2008). In diesem Modell ist die Annahme gespeichert, dass zwischenmenschliche Beziehungen wenig hilfreich sind. Das Vertrauen darauf, von Bezugspersonen Unterstützung zu erhalten, ist gering ausgeprägt.

Eine unsicher-vermeidende Bindung entsteht aus wiederholten Erfahrungen von Zurückweisung und Ablehnung der Bezugsperson, emotionale Bedürfnisse bleiben oft unerfüllt. Die Bezugsperson reagiert bei Stress selten oder gar nicht mit Trost oder Verständnis. Um den Schmerz der Zurückweisung zu umgehen, haben unsicher-vermeidende Kinder Strategien entwickelt, die sie vor weiteren Verletzungen schützen sollen. In stressigen Situationen drücken Kinder mit unsicher-vermeidender Bindung kaum negative Gefühle aus, versuchen diese zu unterdrücken oder bagatellisieren diese. Nach außen hin erscheinen sie zwar gelassen, sie sind innerlich jedoch oft sehr gestresst (Gloger-Tippelt, 2008; Gloger-Tippelt, 2012).

Kinder mit unsicher-ambivalenter Bindung haben widersprüchliche Erfahrungen mit ihren Bezugspersonen gemacht. Deren Reaktionen auf die Signale des Kindes sind inkonsistent, was zu einem Misstrauen führt. Die Kinder sind unsicher, ob sie sich in bedürftigen Momenten zuverlässig an ihre Bindungsperson wenden können. In stressigen Situationen zeigen unsicher-ambivalente Kinder widersprüchliche Verhaltensweisen. Sie

suchen zwar die Nähe zur Bezugsperson, können sich jedoch kaum von ihr beruhigen lassen oder sie versuchen gleichzeitig Distanz herzustellen (Gloger-Tippelt, 2008; Gomille, 2012).

Sind keine klaren oder inkonsistente Stressregulationsstrategien zu beobachten, wird von einem desorganisiertem Bindungsmuster gesprochen. Ein Zusammenbruch der Emotionsregulation wird durch widersprüchliches, inkohärentes oder bizarres Verhalten sichtbar (Main & Solomon, 1990). Kinder mit desorganisierter Bindung haben wiederholte Erfahrungen gemacht, dass die eigenen Bedürfnisse in stressigen Situationen sehr inkonsistent, gar nicht, mit übergriffigem oder sogar mit gewalttätigem Verhalten von der Bezugsperson beantwortet werden. Die negativen Gefühle des Kindes werden durch das wenig hilfreiche Verhalten der Bezugsperson so noch intensiviert. In der Biografie der Bezugspersonen lassen sich häufig unverarbeitete Traumata finden (Granqvist et al., 2017; Main & Hesse, 1990).

Weder ein unsicheres noch ein desorganisiertes Bindungsmuster sind per se pathologisch. Forschungsergebnisse legen jedoch nahe, dass beide als Risikofaktoren für die Entwicklung psychischer Erkrankungen gelten. Insbesondere die desorganisierte Bindung wird als hoch unsichere Bindung und teilweise als Vorstufe von Psychopathologie eingeschätzt (Brisch, 2023). Eine desorganisierte Bindung geht mit einem erhöhten Risiko für eine Vielzahl psychischer Störungen einher, darunter Depressionen, Dissoziation, soziale Ängstlichkeit und ADHS (Borelli, et al., 2010; Franke & Kißgen, 2018, Lyons-Ruth & Jacobvitz, 1999). Zusätzlich wird eine desorganisierte Bindung mit Schwierigkeiten im Stressmanagement, Aufmerksamkeitsproblemen (Pallini et al., 2019; van Ijzendoorn, et al., 1999) sowie Verhaltensauffälligkeiten wie aggressivem und feindseligem Verhalten in Verbindung gebracht (Shaw et al., 1996). Auch ein unsicheres Bindungsmuster stellt einen Risikofaktor für die Entwicklung von sowohl internalisierender als auch externalisierender Symptomatik dar (Groh et al., 2012; Fearon, et al. 2010; Fearon & Belsky, 2011; Madigan et al., 2016; Moss et al., 2006).

Im Vergleich zu Menschen mit einer unsicheren Bindung, verfügen sicher gebundene Personen über konstruktivere Bewältigungsstrategien, effektivere Emotionsregulationsstrategien und eine bessere Selbstregulation (Jacobsen et al., 1997; Kerns, et al., 2007; Pallini et al., 2018.). Zudem geht eine sichere Bindung mit weniger Verhaltensauffälligkeiten, besseren sozialen Kompetenzen einher, wodurch sicher gebundene Menschen insgesamt positivere soziale Beziehungen führen (Cohn, 1990; Contreras, et al., 2000; Groh et al., 2014; Groh et al, 2017; Sroufe & McIntosh, 2011; Verschueren & Marcoen, 1999).

2.3 Die Entwicklung des Bindungsmusters

Im folgenden Abschnitt werden die Einflussfaktoren, welche das kindliche Bindungsmuster mitbedingen bzw. bestimmen dargestellt. In dem Artikel „Ghosts in the nursery“ beschreiben Fraiberg, und Kollegen (1975) wie die eigene Bindungserfahrung der Eltern unbewusst das

Interaktionsverhalten mit ihren Kindern bestimmen kann. Insbesondere unverarbeitete traumatische Erlebnisse wie Missbrauch, Gewalt oder Vernachlässigung der Eltern können sich unbewusst als „Geister“ in Form von emotional wenig verfügbarem, bedrohlichem oder intrusivem Verhalten gegenüber dem Kind zeigen (Madigan et al., 2006; Rowell, & Neal-Barnett, 2022). Studien zeigen außerdem, dass das Bindungsmuster von den Eltern an die Kinder „weitergeben“ werden kann, das gilt insbesondere für die intergenerationale Weitergabe von ungelöstem Trauma und für eine sichere Bindung (Verhage et al., 2016).

Das Verhalten der Eltern gegenüber ihrem Kind spielt eine zentrale Rolle in der Entwicklung von Bindung. Besonders wichtig ist die elterliche Feinfühligkeit, also die Fähigkeit, die Signale des Kindes bewusst wahrzunehmen, richtig zu interpretieren und angemessen darauf zu reagieren (Ainsworth et al., 1978). Eine sehr feinfühlige Bezugsperson erkennt die Gefühle und Bedürfnisse ihres Kindes. Wenn das Kind Stress erlebt, reagiert die Bezugsperson angemessen und bietet durch die Co-Regulation seiner Emotionen Sicherheit und Geborgenheit (De Wolff & van Ijzendoorn, 1997; Lucassen et al., 2011; van Ijzendoorn & De Wolff, 1997).

Zahlreiche Studien konnten zeigen, dass die elterliche Feinfühligkeit durch gezielte Interventionen verbessert werden kann. Diese Verbesserung ist ein wichtiger Baustein zur Förderung einer sicheren Bindung zwischen Eltern und Kind und trägt zudem dazu bei, der Entwicklung einer desorganisierten Bindung vorzubeugen (Juffer et al., 2017; Bakermans-Kranenburg et al., 2003; Bakermans-Kranenburg et al., 2005; Steele & Steele, 2019).

2.4 Die Rolle der Väter

John Bowlby ging ursprünglich davon aus, dass die Mutter als primäre Bezugsperson die zentrale Rolle in der kindlichen Bindungsentwicklung spielt (Bowlby, 1969/2006). Auf dieser Grundlage konzentrierte sich der Großteil der Bindungsforschung auf die Mutter-Kind-Bindung (Iwanski et al., 2023). Entsprechend richten sich die meisten bindungsorientierten Interventionsprogramme vornehmlich an Mütter (Bakermans-Kranenburg et al., 2003; Berlin et al., 2005). Im Vergleich dazu ist das Wissen über die Entstehung und damit auch die Förderung einer sicheren Vater-Kind-Bindung noch begrenzt (Dagan & Sagi-Schwartz, 2018; Iwanski et al., 2023). Die wenigen Interventionsstudien, die Väter mit einbeziehen sind jedoch vielversprechend. Die Ergebnisse zeigen positive Effekte sowohl auf die väterliche Feinfühligkeit als auch auf die Bindungssicherheit des Kindes (Bakermans-Kranenburg, et al., 2003; Buisman et al., 2022).

Philip Cowan plädierte bereits 1997 dafür, Väter stärker in die Erziehung und die Entwicklung von Kindern zu integrieren (Cowan, 1997). In westlichen Gesellschaften sind schon seit längerem deutliche Veränderungen in den Geschlechterrollen und der Verteilung familiärer Aufgaben zu beobachten. Immer mehr Studien beziehen nun auch Väter mit ein und zeigen, dass sich eine sichere Vater-Kind-Bindung ebenfalls positiv auf die kindliche Entwicklung auswirkt. Beispielsweise geht eine sichere Vater-Kind-Bindung mit weniger

internalisierender und externalisierender Symptomatik und positiveren Peer-Beziehungen einher (Deneault et al., 2021; Peng et al., 2024). Der Einfluss von Vätern auf die kindliche Entwicklung kann daher als ebenso bedeutend betrachtet werden wie derjenige der Mütter.

In der Literatur werden jedoch verschiedene Hürden beschrieben, die es erschweren, Väter für die Teilnahme an Interventionsprogrammen zu gewinnen. Viele berufstätige Väter stehen vor organisatorischen Herausforderungen, die es ihnen schwer machen, Zeit für solche Programme zu finden. Hinzu kommt, dass sich Väter oft von der Elternrolle ausgeschlossen fühlen, da sie die Mütter als „Gatekeeper“ erleben. Die Inhalte der Programme sprechen sie oft nicht an und auch von Fachkräften fühlen sie sich nicht ausreichend willkommen geheißen oder nehmen wahr, dass ihnen weniger Bedeutung beigemessen wird (Panter-Brick, et al. 2014; Ramchandani & Iles, 2014; Zanoni et al., 2013).

Hier setzt die bindungsbasierte Primärprävention SAFE (Brisch, 2010/2022) an, die sich gezielt nicht nur an werdende Mütter, sondern auch an Väter aus der Allgemeinbevölkerung richtet, unabhängig von speziellen Risikofaktoren. Das Programm hat das Ziel, eine sichere Eltern-Kind-Bindung zu fördern und die Weitergabe unverarbeiteter Traumata zu unterbrechen. Neben dem Thema sichere Bindungsentwicklung liegt ein weiterer Schwerpunkt des Programms auf der Stärkung der elterlichen Partnerschaft. Sowohl beim Studiendesign der Evaluationsstudie als auch bei der Rekrutierung der StudienteilnehmerInnen wurden einige Strategien befolgt, um die Väter für die Teilnahme am SAFE-Programm zu gewinnen.

2.5 Publikation I

In der ersten Veröffentlichung haben wir zunächst den Inhalt und Ablauf des Programms beschrieben und einen klaren Überblick darüber gegeben, wie das Programm strukturiert ist (Walter et al., 2019). Ein weiterer wichtiger Teil der Veröffentlichung war es, die Rekrutierungsstrategien zu beschreiben. Wir haben die spezifischen Ansätze vorgestellt, die darauf abzielten, Väter trotz der in der Literatur beschriebenen Hürden anzusprechen und sie für die Teilnahme zu gewinnen. Eine zentrale Fragestellung der ersten Publikation war es, inwieweit uns das Vorhaben, Väter für die Teilnahme an früher Prävention zu gewinnen, gelungen ist. Zudem interessierte uns die Motivation beider Elternteile zur Teilnahme sowie die Faktoren, die ihre kontinuierliche Teilnahme beeinflussten. Die Ergebnisse dazu haben wir in der ersten Veröffentlichung präsentiert. Die Hauptfragestellung der ersten Publikation bestand darin, zu untersuchen, ob die Kinder in der SAFE-Gruppe im Vergleich zur Kontrollgruppe signifikant häufiger eine sichere Bindung zu ihrem Vater und ihrer Mutter aufweisen und ob sie in der Interventionsgruppe signifikant weniger desorganisierte Bindungsmuster zu beiden Eltern zeigen. Die entsprechenden Ergebnisse sind in der ersten Veröffentlichung beschrieben.

Ein zentrales Ergebnis der ersten Publikation ist, dass die Beziehung zur Mutter eine wesentliche Rolle für die Teilnahme der Väter spielte. So zeigte sich, dass der Familienstand

der Väter einen Einfluss auf ihre Teilnahmebereitschaft hatte: Verheiratete Väter oder solche, die in einer Partnerschaft mit der Mutter lebten, nahmen häufiger teil als alleinstehende Väter. Etwa ein Drittel der Väter gab an, dass das Thema Partnerschaft ein wichtiger Motivationsfaktor für ihre Teilnahme war. Zudem zeigte sich ein negativer Zusammenhang zwischen der Teilnahme der Väter und ihrer subjektiven Einschätzung der Partnerschaft. Väter in der Kontrollgruppe, die ihre Partnerschaft negativ bewerteten, schieden häufiger aus der Studie aus, als Väter die ihre Partnerschaft positiv wahrnahmen.

2.6 Die elterliche Partnerschaft

Das Thema der elterlichen Partnerschaft spielt eine zentrale Rolle im SAFE-Programm. Die Ergebnisse der ersten Veröffentlichung verdeutlichen die Relevanz dieses Aspekts. Im folgenden Abschnitt wird zunächst der theoretische Hintergrund zum Zusammenhang zwischen Bindungsentwicklung und elterlicher Partnerschaft dargestellt.

Belsky (2005) argumentiert, dass für die Entwicklung der kindlichen Bindung nicht nur die proximalen Einflussfaktoren, sondern auch die distalen Faktoren von entscheidender Bedeutung sind. Diese Perspektive wird durch Studien gestützt, die zeigen, dass der Lebenskontext der Familie die Eltern-Kind-Bindung maßgeblich beeinflusst (Lickenbrock & Braungart-Rieker, 2015). Besonders die Bindung zwischen Vater und Kind ist anfällig für den Einfluss von Kontextfaktoren (Bureau et al., 2017). Väter, die eine größere Zufriedenheit in ihrer Partnerschaft erleben, weisen häufiger eine sichere Vater Bindung zu ihrem Kind auf (Grossmann et al., 2008; Knappe et al., 2021; Lickenbrock & Braungart-Rieker, 2015). In seinem Prozessmodell beschreibt Belsky (1984) die Partnerschaft der Eltern als deren primäre soziale Unterstützung, die wiederum die Eltern-Kind-Beziehung prägt. Auch eine Meta-Analyse von Erel und Burman (1995) bestätigt, dass die Qualität der Partnerschaft eine zentrale Rolle für das elterliche Verhalten, sowohl bei Vätern als auch bei Müttern, spielt. So führt eine konfliktreiche Elternbeziehung gemäß der „Spillover-Hypothese“ oft dazu, dass Kinder stärkerem Stress, negativen Emotionen und aggressivem oder feindseligem Verhalten ausgesetzt sind (Cummings & Davies, 2002; Krishnakumar & Buehler, 2000). Elterliche Konflikte verringern die emotionale Verfügbarkeit der Eltern für das Kind, erschweren die Unterstützung und machen ihr Verhalten oft unvorhersehbar. Eine konfliktreiche Elternbeziehung steht im Widerspruch zur kognitiven Repräsentation einer sicheren Bindung und erhöht die Wahrscheinlichkeit, dass das Kind eine unsichere oder desorganisierte Bindung zu beiden Eltern entwickelt (Frosch et al., 2000; Moss et al., 2005; Owen & Cox, 1997; Sroufe & McIntosh, 2011).

Der Übergang von einer romantischen Paarbeziehung zur Elternschaft ist mit weitreichenden Veränderungen verbunden, die persönliche, soziale und finanzielle Aspekte gleichermaßen betreffen. Diese Rollenveränderungen können zu Konflikten und Stress führen und die Eltern-Kind-Bindung belasten. Es ist gut belegt, dass die Beziehungsqualität von Paaren nach der Geburt eines Kindes häufig abnimmt (Lawrence et al., 2010; Mitnick et al., 2009). Die vorliegenden Befunde zeigen, dass die Qualität der elterlichen Beziehung

einen wichtigen Ansatzpunkt zur Förderung einer sicheren Bindung, bspw. in Präventionsprogrammen darstellt. Bereits vorliegende Studien zeigen, dass Interventionen Eltern während des Übergangs zur Elternschaft effektiv unterstützen und die Qualität der elterlichen Beziehung verbessern können (Schulz et al., 2006; Shapiro & Gottman, 2005). Darüber hinaus zeigen weitere Studien, die sich mit der Verbesserung der elterlichen Beziehungsqualität befassen, positive Effekte auf die kindliche Entwicklung. So weisen Kinder, deren Eltern an solchen Programmen teilgenommen haben, beispielsweise weniger Verhaltensauffälligkeiten auf (Cowan et al., 2011; Cowan & Cowan, 2014; Zemp et al. 2016).

2.7 Publikation II

Der theoretische Hintergrund zum Zusammenhang zwischen elterlicher Beziehungsqualität und kindlicher Entwicklung sowie die Ergebnisse unserer ersten Veröffentlichung legten nahe, den Einfluss der Intervention auf die Qualität der elterlichen Beziehung genauer zu untersuchen. Aus diesem Grund richtete sich der Fokus der zweiten Publikation sowohl auf die Bindungsqualität des Kindes als auch auf die subjektive Partnerschaftsqualität der Eltern (Walter et al., 2024). Nach unserem Kenntnisstand, gibt es bisher keine Interventionsstudien, die beide Aspekte in Kombination betrachten.

Wir überprüften die Hypothese, dass der Anstieg der wahrgenommenen Partnerschaftsprobleme bei beiden Elternteilen in den Jahren nach Teilnahme am SAFE-Programm geringer ausfallen würde als nach Teilnahme an der Kontrollintervention. Zudem nahmen wir an, dass die Partnerschaftsqualität sechs Jahre nach Abschluss beider Programme in der SAFE-Gruppe signifikant höher sein würde als in der Kontrollgruppe, sowohl bei Müttern als auch bei Vätern.

In Bezug auf die kindliche Bindung überprüften wir die Hypothese, dass Kinder, deren Eltern am SAFE-Programm teilgenommen haben, im Alter von sieben Jahren häufiger sicher gebunden sind, als jene, deren Eltern den Kontrollkurs besuchten. Wir prüften zudem die Hypothese, dass unsichere Bindungsrepräsentationen der Mutter oder des Vaters bei Eltern, die am SAFE-Programm teilnahmen, seltener an die Kinder weitergegeben werden. Wir nahmen außerdem an, dass der Zusammenhang zwischen einem ungelösten Trauma der Eltern und einer desorganisierten Bindung des Kindes in der Interventionsgruppe weniger häufig auftritt als in der Kontrollgruppe. Die Ergebnisse zu diesen Hypothesen sind in der zweiten Veröffentlichung beschrieben.

3. Zusammenfassung

Eine sichere Bindung bildet eine wichtige Grundlage für eine gesunde kognitive, emotionale und soziale Entwicklung. Sie wirkt über die gesamte Lebensspanne hinweg als wertvolle Ressource und Schutzfaktor gegen die Entstehung psychischer Erkrankungen (Kerns, et al., 2007; Pallini et al., 2018; Ziegenhain, 2024). Im Gegensatz dazu stellt eine unsichere Bindung ein erhöhtes Risiko für Entwicklungsstörungen und die Entstehung psychischer Erkrankungen dar (Borelli, et al., 2010; Contreras et al., 2000; Groh et al., 2012; Franke & Kißgen, 2018; Jacobsen, & Hofmann, 1997; Keller et al., 2005). Vor diesem Hintergrund erscheint es sinnvoll, primäre Präventionsmaßnahmen zu implementieren, die auf die Förderung einer sicheren Bindung abzielen.

Die vorliegende Dissertation untersucht, inwieweit eine sichere Bindung zwischen Eltern und ihren Kindern durch frühe Intervention gefördert werden kann. Ziel der Arbeit ist es, die Wirksamkeit einer bindungsbasierten primären Präventionsmaßnahme empirisch zu evaluieren. Im Rahmen einer randomisierten, kontrollierten Längsschnittstudie wurde das SAFE-Programm (Sichere Ausbildung für Eltern; Brisch, 2010/2022) zwischen 2006 2019 im Dr. von Haunerschen Kinderspital des LMU-Klinikums untersucht. Das SAFE-Programm zielt darauf ab, die Entwicklung einer sicheren Eltern-Kind-Bindung zu fördern und die intergenerationale Weitergabe unverarbeiteter Traumata zu verhindern. Ein weiterer Fokus des Programms liegt auf der Stärkung der elterlichen Partnerschaft. Das Programm ist als universelle Präventionsmaßnahme konzipiert und richtet sich sowohl an werdende Mütter als auch an Väter aus der Allgemeinbevölkerung, unabhängig von spezifischen Risikofaktoren. Die Intervention beginnt während der Schwangerschaft und endet nach dem ersten Lebensjahr des Kindes. Nach aktuellem Kenntnisstand existiert in Deutschland kein vergleichbares bindungsorientiertes Präventionsprogramm, das sowohl die Förderung einer sicheren Mutter-Kind- und Vater-Kind-Bindung als auch die Stärkung der elterlichen Partnerschaftsqualität integriert. Die Kontrollgruppe der Studie erhielt eine Intervention mit gleichen Rahmenbedingungen, deren Inhalte einem Standardgeburtsvorbereitungskurs entsprachen, ohne Fokus auf Bindung und Partnerschaft. Der Ablauf und die Inhalte des SAFE-Programms werden in beiden Publikationen dieser Dissertation detailliert dargestellt. Die erste Publikation befasst sich mit den Ergebnissen der Datenerhebung unmittelbar nach Abschluss des Programms, als die Kinder ein Alter von 12 bzw. 14 Monaten erreicht hatten. Die zweite Publikation präsentiert die Ergebnisse der Follow-up-Datenerhebung, die sechs Jahre nach Abschluss des Programms durchgeführt wurde, als die Kinder sieben Jahre alt waren.

Die Bindungsforschung konzentrierte sich über lange Zeit nahezu ausschließlich auf Mütter, während die Rolle der Väter im Zusammenhang mit der kindlichen Bindung häufig vernachlässigt wurde (Iwanski et al., 2023). Entsprechend richten sich die meisten bindungsbasierten Programme primär an Mütter (Bakermans-Kranenburg et al., 2003; Berlin et al., 2005). In der Literatur werden zudem verschiedene Barrieren beschrieben, die Väter daran hindern können, an solchen Interventionen teilzunehmen (Panter-Brick, et al. 2014; Ramchandani & Iles, 2014; Zanoni et al., 2013). Vor diesem Hintergrund untersuchte die erste Publikation drei zentrale Fragestellungen: (1) Inwieweit ist es in der vorliegenden Studie gelungen, Väter zur Teilnahme an der Präventionsmaßnahme zu gewinnen? (2) Welche Motive veranlassten Mütter und Väter zur Teilnahme und, welche Faktoren beeinflussten die kontinuierliche Teilnahme beider Elternteile? (3) Wiesen Kinder in der SAFE-Gruppe am

Ende der Intervention signifikant häufiger eine sichere Bindung zu beiden Elternteilen auf als in der Kontrollgruppe?

(1) Die Ergebnisse zur ersten Fragestellung zeigten eine hohe Teilnahmequote der Väter: Insgesamt nahmen 79,7% der Väter an einer der beiden Gruppen teil. Die Teilnahmequote war in der SAFE-Gruppe mit 84,6 % höher als in der Kontrollgruppe mit 73,9 %. Diese hohe Beteiligung lässt sich vermutlich auf die Berücksichtigung spezifischer Faktoren bei der Konzeption des SAFE-Programms und der Rekrutierung zurückführen. (2) Hinsichtlich der Teilnahmemotivation nannten beide Elternteile ähnliche Hauptmotive. Der häufigste Motivationsfaktor war der Wunsch, den Umgang mit Unsicherheiten zu erlernen (44,4 % der Väter und 46,3 % der Mütter). Für Väter stellte die Partnerschaft einen weiteren zentralen Motivationsfaktor dar: 32,2 % der Väter nannten dieses Motiv, im Vergleich zu nur 11,3 % der Mütter. Dagegen gaben 23,8 % der Mütter an, sich für das Thema Bindung zu interessieren, und 18,8 % der Mütter gaben Vulnerabilität, aufgrund eigener Bindungserfahrungen als Beweggrund an, während keiner der Väter diese Aspekte erwähnte. Die Teilnahme beider Elternteile zeigte eine positive Korrelation: Die Beteiligung eines Elternteils erhöhte die Wahrscheinlichkeit der Teilnahme des anderen. Bei Vätern beeinflussten der Familienstatus und die wahrgenommene Partnerschaftsqualität die Teilnahme. Verheiratete Väter oder solche in einer Partnerschaft mit der Mutter waren häufiger beteiligt als alleinstehende Väter. Ein negativer Zusammenhang zeigte sich zwischen der Teilnahme der Väter und ihrer subjektiven Einschätzung der Partnerschaftsqualität: Väter in der Kontrollgruppe, die ihre Partnerschaft negativ bewerteten, brachen häufiger die Teilnahme ab als jene mit einer positiven Wahrnehmung. Bei den Müttern zeigte das Thema Partnerschaft keinen Einfluss auf die kontinuierliche Teilnahme in beiden Gruppen. Dies hebt die besondere Bedeutung der Partnerschaftsthematik, insbesondere für Väter, hervor. Frühere Studien haben gezeigt, dass Väter, die mit ihrer Partnerschaft zufriedener sind, häufiger eine sichere Bindung zu ihrem Kind aufbauen (Grossmann et al., 2008; Knappe et al., 2021; Lickenbrock & Braungart-Rieker, 2015). Die Partnerschaft der Eltern ist ein zentrales Thema im SAFE-Programm. Allerdings konnte aus den Ergebnissen der ersten Publikation nicht abgeleitet werden, ob das SAFE-Programm die Partnerschaftsqualität der Eltern tatsächlich verbessert. Aus diesem Grund fokussierte die zweite Publikation auf die Interventionseffekte auf die subjektive Partnerschaftsqualität der Eltern. (3) Bezüglich der dritten Fragestellung zeigte sich, dass in der SAFE-Gruppe signifikant mehr Kinder eine sichere Bindung zu ihrem Vater (84,6 %) entwickelten als in der Kontrollgruppe (65,8 %). Der Anteil sicherer Mutter-Kind-Bindungen unterschied sich hingegen nicht signifikant zwischen den beiden Gruppen, wobei der Anteil an sicherer Mutter-Kind-Bindung signifikant höher war als in einer großen Vergleichsstichprobe ohne Intervention. Die fehlenden Effekte könnten darauf zurückzuführen sein, dass die Kontrollgruppe mehr als eine Treatment-As-Usual Intervention erhielt. Insgesamt zeigten über 90% der Kinder in SAFE mindestens eine sichere Bindung zu einem Elternteil.

In der zweiten Publikation wurden die Interventionseffekte des SAFE-Programms auf verschiedenen Domänen untersucht und zwischen der SAFE-Gruppe und der Kontrollgruppe verglichen. Dabei wurden folgende Hypothesen geprüft: (1) Kind-Domäne: Es wurde angenommen, dass in der SAFE-Gruppe mehr Kinder ein sicheres Bindungsmuster zeigen würden als in der Kontrollgruppe. (2) Eltern-Kind-Domäne: Es wurde angenommen, dass die Übereinstimmung zwischen einer unsicheren oder desorganisierten Bindung der Eltern und einer entsprechenden Bindung des Kindes in der SAFE-Gruppe seltener auftreten würde als

in der Kontrollgruppe. (3) Eltern-Domäne: Es wurde angenommen, dass der Anstieg der Partnerschaftsprobleme im Verlauf der Zeit in der SAFE-Gruppe geringer ausfallen würde und dass die Partnerschaftsqualität sowohl von Müttern als auch von Vätern, die am SAFE-Programmteilgenommen haben, höher eingeschätzt werden würde.

Die Ergebnisse zeigen (1), dass im Vergleich zur Kontrollgruppe deskriptiv zwar mehr Kinder in der SAFE-Gruppe als sicher gebunden klassifiziert wurden, (51.4% vs. 38.2%), der Unterschied jedoch keine statistische Signifikanz erreichte. Diese Befunde stimmen mit den Ergebnissen von Stams und Kollegen (2001) und Zajac und Kollegen (2019) überein, die Interventionseffekte vor allem in der frühen Kindheit, jedoch nicht in der mittleren Kindheit nachweisen konnten. Das Ausbleiben statistisch signifikanter Ergebnisse könnte auf die verwendeten Messmethoden der Bindung zurückzuführen sein, die sich je nach Entwicklungsstand des Kindes unterscheiden Der Anteil sicherer Bindung im Kleinkindalter ist tendenziell höher als in der mittleren Kindheit (Gloger-Tippelt & Kappler, 2016). (2) Eine signifikant größere Anzahl von Kindern unsicher gebundener Mütter in der SAFE-Gruppe zeigte eine sichere Bindung (50 %) im Vergleich zur Kontrollgruppe (25 %). In der Gesamtstichprobe der Mütter mit ungelöstem Trauma zeigte kein Kind ein desorganisiertes Bindungsmuster. Diese Ergebnisse stimmen mit den Befunden von Zwönitzer und Kollegen (2015) überein, die zeigten, dass Mütter mit verschiedenen Risikofaktoren besonders stark von Präventionsmaßnahmen profitieren. Van Ijzendoorn und Kollegen (1995) postulierten, dass Interventionen insbesondere bei Müttern mit unsicherer Bindung wirksam sind. Dieses Ergebnis lässt sich im Kontext des Präventionsparadoxons interpretieren: Präventionsmaßnahmen können bei spezifischen Hochrisikogruppen einen hohen individuellen Nutzen erzielen, während der Großteil der Zielpopulation nur begrenzte oder keine positiven Effekte erfährt (Franzkowiak, 2022). (3) Sechs Jahre nach der Intervention war der Anstieg der wahrgenommenen Partnerschaftsprobleme bei Müttern in der SAFE-Gruppe statistisch signifikant geringer als in der Kontrollgruppe. Darüber hinaus schätzten die Mütter in der SAFE-Gruppe die Qualität ihrer Partnerschaft signifikant besser ein als die Mütter in der Kontrollgruppe. Bei den Vätern zeigten sich ähnliche Tendenzen, jedoch ohne statistisch signifikante Unterschiede. Insgesamt scheint es einfacher zu sein, Interventionseffekte bei proximalen Outcomemaßen, wie der Eltern-Domäne, nachzuweisen als bei mehr distalen Outcomemaßen wie der kindlichen Bindung (Taubner et al., 2013; Taubner et al., 2015).

Die Ergebnisse beider Publikationen liefern umfassende Erkenntnisse zu den Effekten einer bindungsbasierten Prävention. Das bereits 1997 von Philip Cowan formulierte Plädoyer (Cowan, 1997), Väter in die Förderung einer sicheren Bindung der Kinder zu integrieren, konnte in dieser Längsschnittstudie erfolgreich umgesetzt werden. Die Ergebnisse zeigen, dass das bindungsbasierte SAFE-Programm die Entwicklung einer sicheren Vater-Kind-Bindung wirksam fördern kann. Darüber hinaus profitierten insbesondere Mütter mit einer unsicheren Bindungsrepräsentation oder ungelösten traumatischen Erfahrungen von der Intervention. Über 90% der Kinder in der SAFE-Gruppe entwickelten mindestens eine sichere Bindung zu einem Elternteil. Der Anteil sicherer Bindung in der SAFE-Gruppe war höher als in Vergleichsstichproben ohne Intervention.

Diese Ergebnisse unterstreichen die Relevanz der Integration beider Elternteile in Präventionsprogramme zur Förderung einer sicheren Bindung, die eine zentrale Ressource für die gesunde Entwicklung von Kindern darstellt. Eine zentrale Implikation für die klinische

Praxis besteht darin, Strategien zu entwickeln, um insbesondere Mütter mit unsicherem Bindungsrepräsentation oder ungelösten traumatischen Erfahrungen effektiv in solche Präventionsangebote einzubinden. Darüber hinaus sollte zukünftige Forschung darauf abzielen, spezifische Anpassungen der Programminhalte zu identifizieren, die dazu beitragen, die Interventionseffekte auf die Bindung sowohl im Kleinkindalter als auch in der mittleren Kindheit zu steigern. Im Hinblick auf die Verbesserung der Partnerschaftsqualität profitierten insbesondere die Mütter. Dieser Befund ist von besonderer klinischer Relevanz, da die Abnahme der Partnerschaftszufriedenheit nach der Geburt eines Kindes vor allem Mütter betrifft (Shapiro et al., 2000). Zukünftige Forschung sollte daher untersuchen, wie die Programminhalte angepasst werden können, damit auch die Väter stärker von der Verbesserung der Partnerschaftsqualität profitieren. Insgesamt zeigen die Ergebnisse, dass der bindungsorientierte Ansatz des SAFE-Programms das gesamte Familiensystem unterstützen und einen Betrag dazu leisten kann, ein zentrales und existenziell wichtiges psychisches Grundbedürfnis des Menschen zu fördern: Die Bindung zu anderen Menschen.

4. Abstract (English)

A secure attachment serves as a fundamental basis for healthy cognitive, emotional, and social development. It remains a valuable resource and protective factor against the onset of mental health disorders across the lifespan (Kerns et al., 2007; Pallini et al., 2018; Ziegenhain, 2024). Conversely, insecure attachment is associated with an increased risk of developmental disorders and mental health issues (Borelli et al., 2010; Contreras et al., 2000; Groh et al., 2012; Franke & Kißgen, 2018; Jacobsen & Hofmann, 1997; Keller et al., 2005). Against this background, it appears beneficial to implement primary prevention measures aimed at fostering secure attachment.

This dissertation examines the extent to which secure attachment between parents and their children can be promoted through early intervention. The study's primary aim is to empirically evaluate the effectiveness of a prevention program based on attachment theory. Conducted as a randomized, controlled longitudinal study from 2006 to 2019 at the Dr. von Hauner Children's Hospital of the LMU Clinic, this study investigated the SAFE program (Secure Attachment Formation for Educators; Brisch, 2010/2022; 2023). The SAFE program seeks to promote secure parent–child attachment development and prevent the intergenerational transmission of unresolved trauma. Another focus of the program is enhancing parental partnership quality. Designed as a universal prevention measure, the program targets expectant mothers and fathers from the general population, regardless of specific risk factors. The intervention begins during pregnancy and concludes after the child's first year of life. To date, no comparable attachment-based prevention program in Germany integrates the promotion of secure mother–child and father–child attachment alongside enhancement of parental partnership quality. The control group in the study received an intervention with the same logistical framework but with content resembling standard childbirth preparation courses, lacking a focus on attachment and partnership. The structure and content of the SAFE program are detailed in both publications included in this dissertation. The first publication examines findings from data collected immediately after the program's conclusion, when the children were 12 to 14 months old. The second publication presents follow-up findings collected 6 years post-intervention, when the children were 7 years old.

Historically, attachment research has predominantly focused on mothers, often neglecting the role of fathers in child attachment development (Iwanski et al., 2023). Consequently, most attachment-based programs primarily target mothers (Bakermans-Kranenburg et al., 2003; Berlin et al., 2005). The literature also highlights various barriers that may hinder fathers from participating in such interventions (Panter-Brick et al., 2014; Ramchandani & Iles, 2014; Zanoni et al., 2013). Against this backdrop, the first publication addressed three central research questions: (1) To what extent did the study successfully engage fathers in the prevention program? (2) What motivated mothers and fathers to participate, and which factors influenced their continued participation? (3) Did children in

the SAFE group demonstrate significantly higher rates of secure attachment to both parents compared to the control group?

(1) Regarding the first question, the findings indicated a high participation rate among fathers: 79.7% of fathers attended at least one session, with a higher rate in the SAFE group (84.6%) compared to the control group (73.9%). This high level of engagement likely reflects the consideration of specific factors in the SAFE program's design and recruitment strategies. (2) Regarding the second question, both parents cited similar primary motivations for participation. The most common motivation was the desire to address uncertainties (44.4% of fathers and 46.3% of mothers). For fathers, partnership was a key factor: 32.2% of fathers mentioned this, compared to only 11.3% of mothers. Conversely, 23.8% of mothers expressed interest in attachment-related topics, and 18.8% cited vulnerability due to their own attachment experiences, whereas these aspects were not mentioned by fathers. Participation of one parent positively correlated with the other parent's involvement. For fathers, marital status and perceived partnership quality significantly influenced participation. Married fathers or those in a partnership with the mother were more likely to engage, whereas single fathers participated less frequently. Additionally, fathers in the control group who reported low partnership quality were more likely to discontinue participation. In contrast, partnership quality had no influence on mothers' continuous participation in either group, underscoring the importance of partnership themes, particularly for fathers. Previous studies have shown that fathers satisfied with their partnerships are more likely to form secure attachments with their children (Grossmann et al., 2008; Knappe et al., 2021; Lickenbrock & Braungart-Rieker, 2015). Although the SAFE program emphasizes parental partnership, the first publication did not determine whether the program effectively improved partnership quality. Therefore, the second publication focused on intervention effects on parents' subjective partnership quality. (3) Concerning the third question, the findings revealed that significantly more children in the SAFE group developed secure attachment to their fathers (84.6%) compared to the control group (65.8%). However, no significant difference was found between groups regarding secure mother–child attachment. Notably, the rate of secure mother–child attachment in the SAFE group was significantly higher than in a large comparative sample without intervention. The absence of effects in the control group may be attributable to the provision of a more comprehensive intervention than a typical treatment-as-usual program. Overall, more than 90% of children in the SAFE group exhibited secure attachment to at least one parent.

The second publication examined intervention effects across multiple domains by comparing the SAFE and control groups. Three hypotheses were tested: (1) Child domain: The SAFE group was hypothesized to exhibit a higher proportion of securely attached children compared to the control group. (2) Parent–child domain: A lower concordance of insecure or disorganized attachment between parents and children was expected in the SAFE group compared to the control group. (3) Parent domain: The increase in partnership problems over time was hypothesized to be less pronounced in the SAFE group, with mothers and fathers reporting higher partnership quality.

The results revealed (1) that more children in the SAFE group were classified as securely attached compared to the control group (51.4% vs. 38.2%), though this difference did not reach statistical significance. This finding aligns with prior research (Stams et al., 2011; Zajac et al., 2019), which observed intervention effects primarily during early childhood rather than middle childhood. The lack of statistical significance may be due to age-related differences in attachment measures, as secure attachment rates tend to decline from early-to-middle childhood (Gloger-Tippelt, 2016; Verhage et al., 2016). (2) In the parent–child domain, a significantly larger proportion of children of insecurely attached mothers in the SAFE group exhibited secure attachment (50%) compared to the control group (25%). Among mothers with unresolved trauma, none of the children displayed disorganized attachment. These findings align with research suggesting that mothers with risk factors benefit most from preventive interventions (Zwönitzer et al., 2015; van IJzendoorn et al., 1995). This aligns with the prevention paradox: preventive measures yield large individual benefits for high-risk groups, whereas the broader target population experiences limited or no effects (Franzkowiak, 2022). (3) In the parent domain, mothers in the SAFE group reported a statistically significantly smaller increase in perceived partnership problems at 6 years post-intervention compared to the control group. Additionally, mothers in the SAFE group rated their partnership quality significantly higher. Fathers exhibited similar trends, though the differences were not statistically significant. These findings suggest that proximal outcomes, such as parental partnership quality, may be easier to influence than distal outcomes, such as child attachment patterns (Taubner et al., 2013; Taubner et al., 2015).

Overall, the findings of both publications provide comprehensive insights into the effects of attachment-based prevention. The longstanding call by Philip Cowan (1997) to involve fathers to foster secure child attachment was successfully addressed in this longitudinal study. The results demonstrate that the SAFE program effectively promotes secure father–child attachment and particularly benefits mothers with insecure attachment representations or unresolved trauma. More than 90% of children in the SAFE group developed secure attachment to at least one parent, with the secure attachment rates surpassing those in non-intervention samples.

These findings underscore the importance of integrating both parents into prevention programs aimed at promoting secure attachment, which serves as a critical resource for healthy child development. For clinical practice, the results highlight the need to develop strategies for effectively engaging mothers with insecure attachment representations or unresolved trauma in preventive interventions. Future research should identify specific program adaptations to enhance intervention effects on attachment during both early and middle childhood. Regarding partnership quality, the SAFE program primarily benefited mothers, a finding of particular clinical relevance given the decline in maternal partnership satisfaction commonly observed postpartum (Shapiro et al., 2000). Future studies should explore how program modifications can ensure that fathers also experience greater improvements in partnership quality. In conclusion, the SAFE program’s attachment-based

approach supports the entire family system and contributes to fostering one of humanity's fundamental psychological needs: secure attachment to others.

5. Publikation I

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*The efficacy of the attachment-based SAFE® prevention program: a randomized control trial including mothers and fathers

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*The efficacy of the attachment-based SAFE® prevention program: a randomized control trial including mothers and fathers

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ABSTRACT

SAFE® is a primary prevention program to promote secure infant-parent attachment. SAFE explicitly addresses mothers and fathers. In this current first study, efficacy was assessed in a low-risk German sample using a randomized control trial with an active control intervention. A high rate of fathers' participation was achieved: in SAFE 84.6% and in the control group intervention 73.9% of the fathers participated. Infant-parent attachment was assessed at the end of the year-long programs. There was a significant difference between groups in terms of secure infant-father attachment, but not of infant-mother attachment. In SAFE, 84.6% of the infants were securely attached to their father (n = 39), in comparison to 65.8% in the control group (n = 38). The proportion of secure infant-mother attachment was 66.7% in the SAFE group (n = 54) and 64.0% in the control group (n = 50). The program was successful in promoting infant-father attachment security.

KEYWORDS

Attachment-based prevention; father involvement; infant-father attachment; infant-mother attachment; SAFE

Introduction

Attachment research demonstrates that a secure attachment to a mother and father is a protective factor that fosters healthy social and emotional development (Sroufe, Egeland, Carlson, & Collins, 2005; Verschueren & Marcoen, 1999). Although research has found that fathers make an important contribution to child development and well-being over the lifespan, and a plea for a family-systems view of attachment had been voiced as early as 1997 (Cowan, 1997), there is still a lack of attention to fathers in the research on attachment and in prevention (Panter-Brick et al., 2014). The current study is the first study of the SAFE program. In the study, we examined the possibility of integrating fathers into the attachment-based SAFE primary prevention program, which explicitly addresses both mothers and fathers. We also assessed the efficacy of SAFE in enhancing secure infant-mother and infant-father attachment security.

Attachment is defined as the affective bond between infant and caregiver (Ainsworth, Blehar, Waters, & Wall, 1978; Bowlby, 1969). Attachment security to both the mother and

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father is of great importance for healthy social, emotional, and cognitive development. Children who are securely attached to the mother or to the father show more positive developmental outcomes such as social competence with peers (Groh et al., 2014). Secure attachment to fathers is associated with better school adjustment, fewer anxious or withdrawn behaviors, greater self-esteem, and more sociability (Lamb, Hwan, Frodi, & Frodi, 1982; Verschueren & Marcoen, 1999). Children who are securely attached to mothers show a more positive inner representation of self, better verbal competence, greater social acceptance, more constructive coping mechanisms, and more effective strategies of emotion regulation (Kerns, Abraham, Schlegelmilch, & Morgan, 2007; Verschueren & Marcoen, 1999). On the other hand, insecure infant-mother attachment is associated with behavioral problems and socio-emotional problems, including externalizing symptoms (Fearon, Bakermans-Kranenburg, van IJzendoorn, Lapsley, & Roisman, 2010; van IJzendoorn, Schuengel, & Bakermans-Kranenburg, 1999) and internalizing symptoms (Groh, Roisman, van IJzendoorn, Bakermans-Kranenburg, & Fearon, 2012). Research findings to date are mainly based on infant-mother attachment.

But why are some infants securely and others insecurely attached to their parents? Attachment theory implies that parental behavior plays a crucial role in the development of secure attachment in infants. One of the key factors for the development of attachment security is sensitive parenting. According to Ainsworth et al. (1978), a sensitive caregiver is aware of an infant's signals, interprets them accurately, and responds promptly and appropriately to the infant's needs. He or she is able to make adequate hypotheses about the infant's inner states and to regulate the infant's feelings of discomfort, distress, or need for proximity. In perceiving and regulating infant's needs, sensitive caregivers foster an experience of safety and comfort for the infant. Still, the association between sensitivity and secure infant-father attachment has been shown to be smaller than that between sensitivity and infant-mother attachment security (Ainsworth et al., 1978; De Wolff & van IJzendoorn, 1997; Lucassen et al., 2011; van IJzendoorn & De Wolff, 1997).

Another key factor cited in attachment theory is the parents' own history of attachment. There is an association between the maternal and paternal attachment representations and their infant's security of attachment (Verhage et al., 2016). Fraiberg, Adelson, and Shapiro (1975) formulated the idea of the "ghosts in the nursery," which describes the continuing unconscious influence of the parents' history of adverse childhood and traumatic experiences such as abuse, violence, and neglect. In particular, parents' unresolved trauma and the lack of emotional support increase the risk that they will behave in disruptive, frightened, or frightening ways towards the infant (Egeland, Jacobvitz, & Sroufe, 1988; Madigan, Moran, & Pederson, 2006; Main & Hesse, 1990), which in turn increases the risk that infants establish an insecure or disorganized attachment to their parents (Hesse & Main, 1999; Lyons-Ruth & Block, 1996). Taking the benefits of attachment security into account, there is a need to support parents in promoting sensitive caregiving, and to establish attachment security with their child.

Promoting attachment security

Over the past several decades many attachment-based intervention programs have been developed (for an overview see: Berlin, Ziv, Amaye-Jackson, & Greenberg, 2005; Steele & Steele, 2018) and shown to be successful in enhancing sensitivity and in promoting attachment security. Furthermore, there is evidence that parental sensitivity

is associated with their children's attachment status, and therefore interventions that enhance sensitivity are likely to promote children's attachment security (Bernard et al., 2012; Juffer, Bakermans-Kranenburg, & van IJzendoorn, 2005; Lickenbrock & Braungart-Rieker, 2015). So far, the results are mainly based on research on mothers. A pilot study on the feasibility of video-based sensitivity training with fathers has demonstrated positive results. The fathers completed all intervention sessions and gave positive feedback on the contents. Fathers reported that the intervention helped them to improve their understanding of their infant's inner states and communication with their infant (Lawrence, Davies, & Ramchandani, 2012).

The idea formulated by Cowan in 1997, that in order to understand children's attachment security it is necessary to look at the entire family system, including both the mother and father, has only partially been realized. Research is still mainly built on data on mothers, and few fathers have been studied in research on prevention (Mountain, Cahill, & Thorpe, 2017; Panter-Brick et al., 2014; Taubner, Munder, Unger, & Wolter, 2013; Taubner, Wolter, & Rabung, 2015). In the meta-analysis of Bakermans-Kranenburg, van IJzendoorn, and Juffer (2003), 88 attachment-based interventions have been examined and only three non-randomized studies included both mothers and fathers. The three intervention programs that included fathers have been shown to be significantly more effective in terms of the children's security than those that included only mothers. Thus, these results emphasize the importance of integrating fathers into attachment-based prevention.

To achieve the goal of including fathers, researchers developed theoretical frameworks about resources and barriers to the engagement of fathers. P. A. Cowan, Cowan, Pruett, Pruett, and Wong (2009, p. 664) formulated a 5-domain model for protecting families from risk factors that is also relevant to engaging fathers with their children. The empirically validated model contains the following factors: (1) the mental health and psychological distress of the caregivers; (2) the couple and parent-child relationship patterns that are transmitted across the generations; (3) the quality of the relationship between the parents, including communication styles, problem solving, and co-parenting strategies; (4) the quality of the mother-child and father-child relationships; and (5) the life stressors and availability of social support outside the family.

In addition to the attachment security to the fathers, paternal presence in general and active paternal parenting can be a resource, and make an important contribution to an infant's healthy development (Panter-Brick et al., 2014; Zanoni, Warburton, Bussey, & McMaugh, 2013). Nonetheless, it remains challenging to integrate fathers into interventions. Fathers often feel excluded from parenting, as mothers often act as gatekeepers. Additionally, fathers feel treated as less important by practitioners and often feel rejected and treated impolitely. They often voice the desire to be integrated into parenting and treated with greater understanding of their viewpoints (Zanoni et al., 2013).

To improve fathers' participation in family-strengthening interventions, Panter-Brick et al. (2014) identified helpful strategies. Logistical issues such as timing and location need to be carefully considered to encourage working fathers to participate. Communication is important: fathers and mothers have to be explicitly addressed, informed, and invited to participate in the intervention. Contents and activities must be adjusted to the needs of mothers *and* fathers, and support must be provided for both parents. And finally, practitioners need to be sensitized to fathers' needs to prevent them from feeling misunderstood (Panter-Brick

et al., 2014). Ramchandani and Iles (2014) expanded on these ideas and recommended the early involvement of expectant and new fathers to overcome barriers and facilitate their participation in interventions in future.

In the field of prevention for mothers, Bakermans-Kranenburg et al. (2003) identified the following criteria to design an effective attachment-based prevention program: Brief interventions with up to 16 sessions are more effective than longer interventions. Interventions with a behavioral focus, especially using video feedback techniques to enhance parental sensitivity, are more effective than interventions without. Interventions are more effective if they are conducted outside of the family's home (Bakermans-Kranenburg et al., 2003). Interventions that begin before birth provide the opportunity to integrate new and positive behaviors during a phase of disequilibrium where representations of parenting are already activated. As a result, dysfunctional interaction patterns may be prevented in new parents' relationships with their babies and young children (Bryan, 2000).

The prevention program SAFE – Secure Attachment Family Education

Previously described theory and empirical evidence provided guidelines in the design of the attachment-based prevention program SAFE® – Secure Attachment Family Education (SAFE; Brisch, 2010/2017). SAFE is an attachment-based primary prevention group program that explicitly addresses mothers and fathers, and assumes that both partners have equal importance in raising their child. The program was developed by Karl Heinz Brisch to promote secure infant-parent attachment, and to prevent the transmission of unresolved trauma from parents to their infants. SAFE does not specifically address parents at risk, as adverse childhood experiences are also highly prevalent in low-risk-samples (Häuser, Schmutzer, Brähler, & Glaesmer, 2011). The SAFE program consists of four *basic elements* to promote secure infant-parent attachment: (1) **Enhancement of parental sensitivity** in infant-parent interaction using video-based sensitivity training prenatally and individual video feedback postnatally; (2) **Reflection on parents' own early and later attachment experiences and unresolved trauma;** (3) **Psychoeducation** about attachment theory and general knowledge of child development; and (4) **Provision of social support by the facilitator and the group of other parents.**

The current study

The purpose of this phase I-II study was to assess the efficacy of SAFE in enhancing secure infant-father and infant-mother attachment. The SAFE program was implemented for the first time to assess its efficacy under optimal conditions of a high degree of parental adherence. Therefore, we conducted a randomized control trial to assess the relative effectiveness of the attachment-based SAFE prevention program to a parallel control intervention. The control conditions were basically the same as those of the SAFE group, which allowed us to draw conclusions about the attachment-based contents of SAFE (basic elements 1–3). First, we wanted to explore to what extent it was possible to involve all fathers in the primary prevention programs. In addition, we wanted to assess the parents' motivation to participate and the factors that influence continuous participation. We tested the hypotheses that

(1) The rate of secure infant-father attachment and
(2) The rate of secure infant-mother attachment would be significantly higher for families in the SAFE group compared to those in the control group.

Method

Procedure

Participants were recruited via flyers in birth clinics and at the offices of gynecologists and family practitioners. Inclusion criteria were pregnancy before week 28 and the ability to speak and understand German. Parents were included in the following cases: if they participated as a couple, as a single mother or as a mother whose partner refused participation. Interested parents-to-be were randomly assigned (block randomization, block size: 10 couples) to the SAFE intervention group or to the control group. Both group interventions were conducted at the University Hospital of Munich, Germany, in the Department of Pediatric Psychosomatic Medicine and Psychotherapy. Beginning in 2006, we implemented 11 intervention groups (group size: M = 7.73 couples) and 11 control groups (group size: M = 6.82 couples), with the last cohort starting in 2011. Before randomization, participants were informed about the research procedure and signed the informed consent. Initially, we randomized 169 interested mothers and 155 fathers; 143 mothers (SAFE: n = 78; CG: n = 65) and 114 fathers (SAFE: n = 66; CG: n = 48) started the intervention and completed the pretest. The final analysis comprised 104 mothers (SAFE: n = 54; CG: n = 50) and 77 fathers (SAFE: n = 39; CG: n = 38) (see Figure 2 for a flow chart).

Data presented in this paper were collected at two measurement points. The pretest took place after the first group session. The parents were asked to fill out a set of questionnaires to control for potential covariates. We used the Traumatic Antecedents Questionnaire and the Posttraumatic Stress Diagnostic Scale (TAQ; van der Kolk, 1997 and PDS; Ehlers, Steil, Winter, & Foa, 1996) to assess lifetime exposure to traumatic events, and the Beck Depression Inventory (BDI; Hautzinger, Bailer, Worall, & Keller, 1995) to assess symptoms of depression. We further used the "Zweierbeziehungsbogen", a German questionnaire (FB-Z; Cierpka & Frevert, 1994) to assess aspects of their partnership and couple functioning. We also assessed their socioeconomic status. In the posttest, the Strange Situation Procedure (SSP; Ainsworth et al., 1978 was conducted and took place at the end of the course, during the infants' second year of life. Infant-father and infant-mother attachment were assessed by a research assistant who did not know to which group the families had been randomized. Additionally, parents were asked to describe their motivation for participating in the program.

Participants

Our sample is a non-clinical, low-risk, self-selected sample because SAFE is intended to be a universal rather than targeted preventive intervention. Traditionally, middle-class families have rarely been assessed (Egeland, Weinfield, Bosquet, & Cheng, 2000; Metzl, 1980), as most attachment-based interventions focus on at-risk families or

those of low socioeconomic status. Groups (SAFE vs. control group) did not differ in sociodemographic characteristics. Mean week of pregnancy at the beginning of the course was 24.34 (SD = 6.25). Mean age of fathers was 35.63 years (SD = 6.53), and of mothers was 32.81 years (SD = 5.85). The percentage of the parents living in a partnership with each other was 83.9% (n = 120), and 10.5% (n = 15) of the parents were separated, and two of these mothers were living together with a new partner. Information is missing for eight families (5.6%). Education level was high: 66.7% of fathers and 69.2% of mothers had a university degree, 6.1% of fathers and 3.5% of mothers had the German mandatory educational level of 9 school years. Most participants were German (fathers: 91.2%; mothers: 86.7%); 50.3% of the infants were male. Significantly (χ^2 (1,142) = 13.43, p = .00) more families in the control group were expecting their first child (98.5%) compared to the families in the SAFE group (77.9%). Fathers and mothers in the intervention and control groups did not differ significantly in terms of symptoms of depression or symptoms of posttraumatic stress disorder (PTSD) at time of pretest. Symptoms of depression: 91.9% of the fathers showed no relevant symptoms and 8.1% showed mild to moderate symptoms of a depression; 69.3% of the mothers showed no relevant symptoms, 25.0% showed mild to moderate, and 5.7% showed clinically relevant symptoms. PTSD: 0.9% of the fathers and 10.5% of the mothers met the diagnostic criteria for a suspected diagnosis; 96.5% of the fathers and 81.8% of the mothers met at most two diagnostic criteria for PTSD.

Table 1 shows the lifetime exposure to trauma summarized for both groups. Rates of exposure to trauma during childhood were relatively high in our sample when compared to a representative German sample. Häuser et al. (2011) reported 13.8% as having suffered from neglect, 4.6% from emotional maltreatment, and 5.5% from physical abuse. In our sample depending on type of trauma and gender of parent, between 16.7 and 42.0% had suffered from neglect, between 19.4% and 46.2% from emotional maltreatment and between 5.3% and 19.6% had suffered from physical abuse. In terms of group differences, fathers in the control group reported significantly higher rates of physical maltreatment at ages 7 to 12 (SAFE: 7.6%; CG: 25%; (χ^2 [1,114] = 6.65, p = .010). There were no differences between groups in the other type and age groups of trauma, nor were there differences between mothers in the intervention and control conditions.

Parents were asked to estimate the percentage of their waking hours they spent with their infant. There were no differences in waking hours with their infant between the intervention and control group participants, either for fathers (n = 61; M = 25.3%; SD = 19.7) or mothers (n = 78; M = 75.9%; SD = 21.4).

Table 1. Exposure to childhood trauma assessed by Traumatic Antecedents Questionnaire.

	Fathers (n = 114)		Mothers (n = 143)	
Type of trauma	0–6 years	7–12 years	0–6 years	7–12 years
Neglect	16.7	26.4	28.7	42.0
Emotional maltreatment	19.4	34.3	30.1	46.2
Physical abuse	5.3	15.0	17.5	19.6

Percentage of participants who report having suffered from neglect, emotional maltreatment, or physical abuse at a minimum occasionally or moderately.

Design of the SAFE program and the control intervention

To determine the specific impact of the attachment-based content of the SAFE program we decided to conduct a control intervention rather than following the German standard procedure in preparing for birth.

The prevention program SAFE – Secure Attachment Family Education

The program begins during pregnancy. It consists of 10 group sessions and three individual sessions, which continue until the infants' first birthday (for an overview see Figure 1). All of the group sessions are full-day sessions (usually on Sundays from 10 a.m. to 5 p.m.); four of the group sessions and one of the individual sessions with either mother or father are held before the birth; six group sessions and two individual sessions are held after the birth. Once the infants are born they, too, take part in the group sessions. Two trained facilitators called "SAFE facilitators" lead a closed group of five to ten couples or single mothers. For the individual sessions the couples are assigned to one of the two facilitators. They work individually with the mother (-to-be) and the father (-to-be). An emergency hotline is in place until the conclusion of the program. Scheduling is set beforehand. The facilitators can be reached by telephone so that they can help to co-regulate the mothers/fathers during stressful moments.

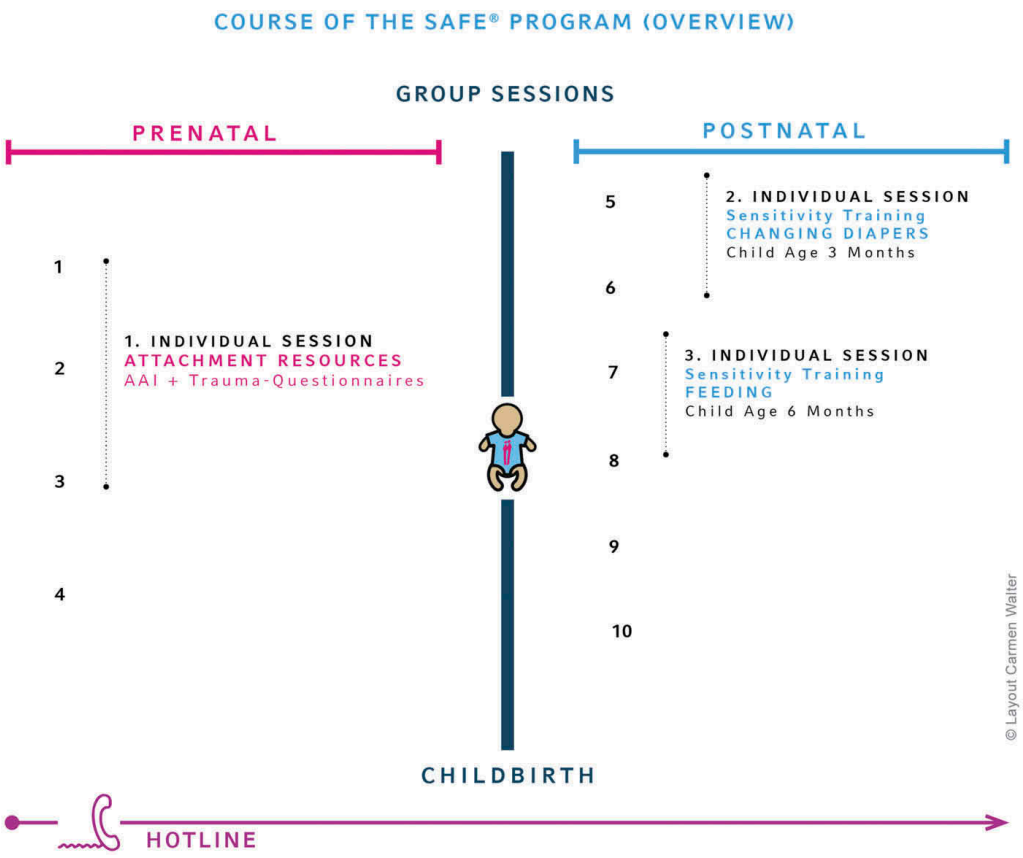

Figure 1. Overview of the SAFE program.

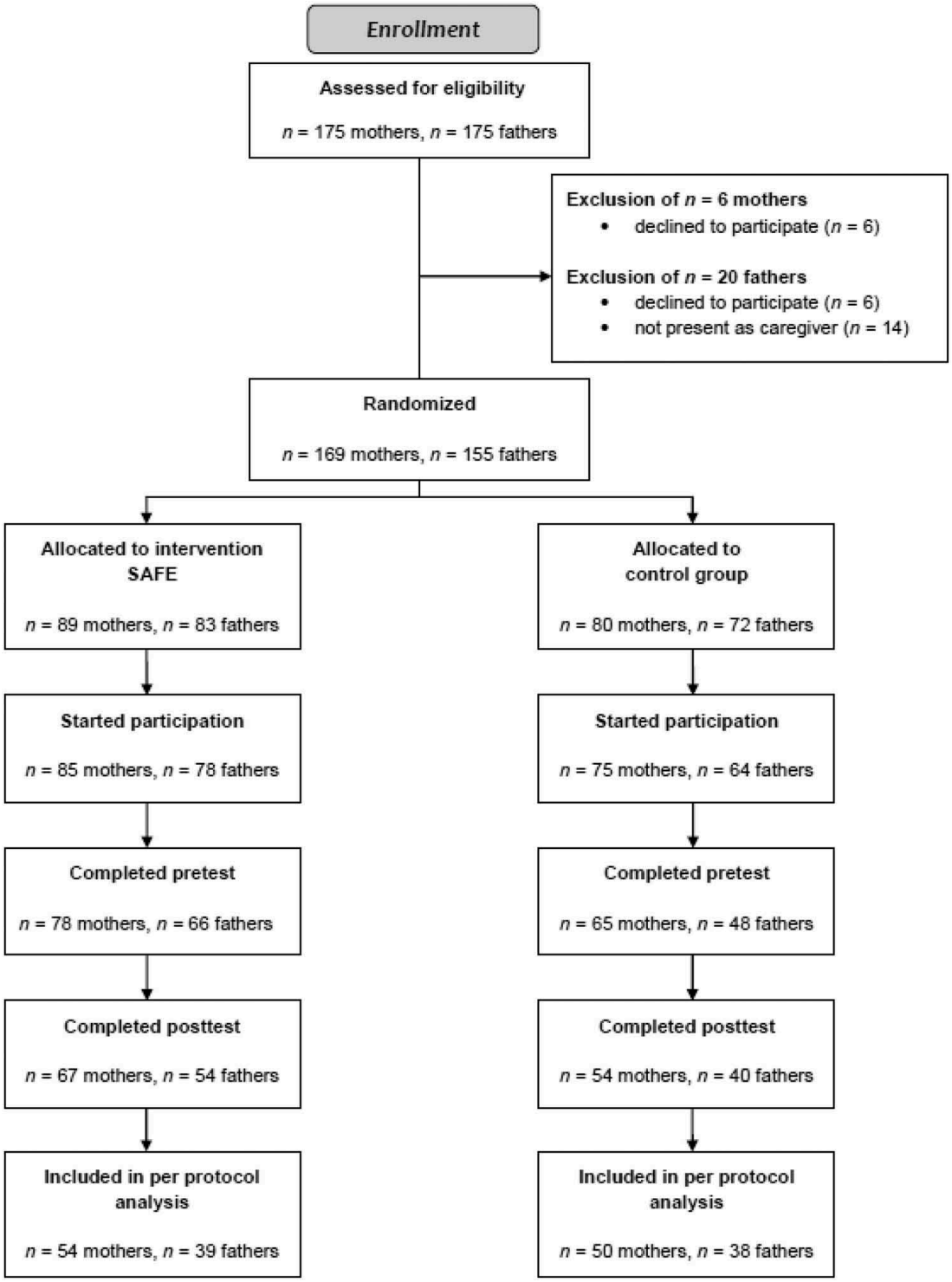

Figure 2. CONSORT flow chart on recruitment and retention.

SAFE facilitators are professionals who work in social-service fields, including physicians, midwives, psychologists, nurses, and social workers, and they get special training in a four-day program. Currently, 90.1% of the facilitators are women (Schosser, 2016), who are assisted and supervised by experienced facilitators (the SAFE team).

The contents of the program are summarized in a manual, although the schedules are flexible. The facilitators use several teaching and interacting practices, such as classic knowledge transfer, role playing along the lines of theme-centered interaction (TCI; Cohn, 1975), and small group-work.

First, we describe contents that are not specifically scheduled. All group sessions focus on group discussion to exchange experiences and to promote the sense of being supported by the group and by the facilitators. In particular, to make sure that men can discuss father-specific topics with other fathers, they engage in small-group work separately. Meanwhile women can discuss mother-specific topics. There are at least five units of father-specific and mother-specific small-group work.

To address the quality of the relationship between the parents and to promote mutual understanding, partners practice communication skills. They learn to deal with conflicts. Exchange between and within couples is encouraged, for example in role playing exercises. Partners talk about the state of the partnership in terms of fantasies, mutual expectations, the distribution of roles, the mother-father-infant-triad, and the parents' own experiences of having felt secure and content.

The parents' mental health and the ability to deal with their own (psychological) distress are of great importance. This topic is taken up during the group sessions. Parents-to-be learn about their own needs and the social supports that are available to them in case of emergencies. Stabilizing exercises, such as the imaginary journeys developed by Luise Reddemann (2001) as part of psychodynamic imaginative trauma therapy, are part of every group session.

The video-based sensitivity training starts prenatally and is part of almost every group session to enhance parental sensitivity, sensitive responsiveness, and emotional availability. The parents learn about the four essential elements of sensitivity to the infants' signals: (a) parental awareness; (b) accurate interpretation; (c) appropriate response; and (d) prompt response (Ainsworth et al., 1978). Participants watch video clips with positive infant-parent interaction scenes and are encouraged to reflect on the inner states of the parent and the infant in the video. To encourage parents' reflection facilitators ask what the interaction partners are doing, why they might do that, and how they might feel during the interaction. This training prepares the parents for how infants express their needs for closeness or distance, and how they may respond to these needs. The positive parenting behavior in the video clips also serves as a role model, and participants are encouraged to integrate this observed behavior into their own repertoire.

In the following section we describe specific topics that are part of the prenatal and postnatal sessions. The psychoeducational contents of the four prenatal group sessions concern the infants' basic needs, crying as a strategy for survival, techniques to calm the infant down, co-regulation, the concept of sensitivity and emotional availability, and mothers' and fathers' psychological phases during pregnancy. Other topics include feeding, sleeping, separations, and dealing with third-party care.

The most important part of SAFE is psychoeducation about attachment theory, the benefits of secure attachment, key factors that promote attachment security, and the transmission of attachment across generations. To interrupt the transmission of insecure attachment, facilitators encourage the parents to reflect on their own childhood attachment experiences. They conduct the Adult Attachment Interview (AAI; George,

Kaplan, & Main, 1996) during the first individual session, which takes place between group session one and four. Participants are, among other things, asked whether they felt rejected or threatened by their parents and what they did when they were upset during childhood. Facilitators usually offer increased help to parents who have talked about their biography in a dismissing or preoccupied way during the AAI. Dismissing interviewees are either not able to remember attachment experiences from their childhood, minimize attachment-related experiences, or tend to idealize their unsupportive parents. Preoccupied interviewees talk in a confused or angry way about their attachment experiences (Main, Kaplan, & Cassidy, 1985). Additionally, parents-to-be fill out two trauma questionnaires: The Traumatic Antecedents Questionnaire (TAQ; Hofmann, Fischer, & Koehn, 1997; van der Kolk, 1997) and the Posttraumatic Stress Diagnostic Scale (PDS; Ehlers et al., 1996). Reflection on their attachment experiences helps parents to be aware of possible risk factors resulting from unresolved traumatic experiences from the past that may be triggered by their infant. If parents suffer from unresolved traumatic experiences, the facilitators help them to arrange for further counseling or individual trauma therapy.

Additional contents of the prenatal group sessions include discussion of the parents' fantasies about their infants' personality and abilities, their competence as parents, the emotions that accompany motherhood and fatherhood, the transition to parenthood, along with the inevitable changes that occur in their bodies, minds, and emotions.

As soon as the infant is born and the parents are ready, the infants take part in the group sessions. The contents of the postnatal group sessions include the processing of the birth, developmental tasks (such as motor and language skills), feeding, familiarization with crib, infants' versus parents' needs, illnesses, social support, attachment versus exploration, the circle of security (Powell, Cooper, Hoffman, & Marvin, 2012), and getting the household childproofed. Time schedules of the group sessions have to be adjusted to the infants' needs. Facilitators adapt the content of the group sessions to meet the parents' and infants' needs. The facilitator's flexibility functions as a role model for the parents' adaptation to their infants' rhythms. The contents of the prenatal sessions are revised as they now have the opportunity to put into practice what they have previously learned about consoling and sensitive parenting. Previously discussed fantasies about the infant and expectations about the infant and the partner are now compared against the reality of their infant, parenthood, and partnership.

In the two postnatal individual sessions with their personal facilitator, mothers and fathers receive individual video feedback on two interaction scenes with their infants (diapering at three months and feeding at six months). The mother-infant and the father-infant interactions are previously filmed separately. Facilitators choose a single frame from the video to give feedback on a positive and sensitive interaction with their infant. This reinforces sensitive parental behavior and responses and strengthens their self-esteem as parents. If needed, the facilitator may suggest assistance and propose helpful alternatives for responding more sensitively to their infant's signals.

Control condition

The control group (CG) had the same basic conditions as the SAFE group. Time intensity was comparable to keep motivation of participants high and to control for the effect of

"attention." Groups with the same number of 7–10 parents met in 10 daylong group sessions (4 prenatally and 6 postnatally) until the end of the infants' first year of life. There were no individual sessions. Two female facilitators led each group. As in the intervention group, experienced professionals working in the social-services field were trained in leading the groups. Content of the program included birth preparation, nursing counseling, and infant care. There was a main focus on teaching parents practical skills. Process and content of the control program were summarized in a manual.

Measures

Parents' program participation and motivation to participate

To explore whether it is possible to involve fathers in the two prevention programs, we assessed the factors that influence program participation in fathers. Consequently we assessed these factors also in mothers. Furthermore, parents were asked to describe their motivation for participating in the program with an open-ended question. We analyzed the content of the answers and defined categories of motivation to participate. We then assessed the frequency of the mentioned categories.

Aspects of couple functioning

To assess aspects of couple functioning we used the German "Zweierbeziehungsbogen (FB-Z)" questionnaire (Cierpka & Frevert, 1994). Mothers and fathers filled out the questionnaire at the pretest. It includes seven dimensions. The dimension *affective composition* evaluates the level of empathy, mutual support, and the extent to which their relationship promotes growth. The *emotionality* dimension assesses the extent to which needs and feelings are openly expressed and discussed. *Task fulfillment* refers to flexibility and adaptability concerning demands and to the ability to solve problems together (e.g. *My partner supports me to overcome demands). Role behavior* assesses the fulfillment of roles and adaptation to new role demands (e.g. *My partner and I have the same opinion about the responsibilities in our family*). *Communication* measures the clarity of exchange of information and whether the exchange is satisfactory. The *control* dimension assesses the predictability and flexibility of control (e.g. *My partner reacts adequately if I make a mistake*). Similarities of *values and norms* are assessed. Each dimension consists of 4 items using a 4-point Likert scale. Lower ratings indicate better couple functioning. Cronbach's alpha of each of the seven dimensions ranged from .59 to .65.

Infant attachment: Strange Situation Procedure (SSP)

Infant attachment was assessed using the Strange Situation (SSP) 25-minute laboratory procedure when the infants were 14 months (infant-mother attachment) and 18 months (infant-father attachment) old (Ainsworth et al., 1978). Infant behavior towards the caregiver is classified according to secure (B), insecure-avoidant (A), insecure-resistant (C), and disorganized/disoriented (D) attachment. The SSP consists of 8 episodes, each lasting up to 3 minutes. During two episodes moderate stress is induced by two separations from the caregiver. Infant behavior towards the caregiver during the two reunions is indicative of the infant's attachment pattern. All infant-mother and infant-father SSPs were videotaped and coded by the blinded expert coder and senior trainer

Elizabeth Carlson. A second reliable coder coded 17.0% (n = 20) of infant-mother SSPs and 26.0% (n = 20) of infant-father SSPs. Inter-rater reliability varied from 85.0% (κ = .74) (4-way classification for mothers) to 95.0% (κ = .83) (organized – disorganized/disoriented classification for fathers). Infant-mother SSPs were conducted at the infants' mean age of 14.67 months (n = 104; *range* = 10–28; *SD* = 2.74). Six cases were not classifiable (SAFE: n = 2; CG: n = 4). Infant-father SSPs were conducted at the infants' mean age of 17.68 months (n = 77; *range* = 12–29; *SD* = 3.8). Six cases were not classifiable (SAFE: n = 4; CG: n = 2).

Analytic plan

As we conducted our study to assess the efficacy of the SAFE program under optimal conditions, we had to achieve a high degree of intervention adherence. To ensure that participants in SAFE received sufficient input on attachment-based content, we imposed a minimum criterion for program participation. In the intervention group, program participation was rated as completed if mothers participated in at least 10 of 13 sessions and if fathers participated in at least 9 of 13 sessions. The criterion for fathers was lowered because they generally took part in one session less than mothers on average. We conducted a per-protocol analysis (PPA): Only parents who completed participation and who showed a high degree of program adherence were included in the final analysis. This means that although the assignment to conditions was random, we cannot conclude with certainty that the samples at posttest were still randomly distributed. To take this into account, we conducted a detailed analysis of drop-out and retention. Figure 2 shows the CONSORT flow chart on recruitment and retention from enrollment to the final per-protocol analysis (PPA).

Results

Preliminary analysis

Drop-out analysis and retention

We first conducted a drop-out analysis to explore whether the principle of randomization was violated by the PPA (Ranganthan, Pramesh, & Aggarwal, 2016). In four steps the participants who dropped out at a given stage of the study, were compared to the participants who remained in the sample at the same stage. We compared sociodemographic characteristics, symptoms of depression (BDI), lifetime exposure to trauma (TAQ; PDS), and aspects of the parents' couple functioning (FB-Z) for the SAFE group and for the control group separately. Reasons for attrition were mostly lack of time and loss of interest. We present only significant differences between completers and non-completers examined in each step of the drop-out analysis. In step one, participants who completed the pretest were compared with participants who completed the posttest. In the control group, fathers who completed the posttest reported fewer problems in *affective composition* (U = 64.00, p = .022), *task fulfilment* (U = 61.00, p = .017), *role behavior* (U = 74.5; p = .049), and *communication* (U = 69.00, p = .033) than fathers who did not complete the posttest. In the SAFE group, mothers who completed the posttest were more likely German (χ^2 [1,78] = 8.90, p = .003) than

mothers who did not complete the posttest. In the SAFE group, mothers who completed the posttest reported fewer depressive symptoms (χ^2 [2,78] = 9.76, p = .008) than mothers who did not complete the posttest.

In step two, participants who completed the pretest were compared with participants who were included in the PPA. In the control group, mothers who were included in PPA reported fewer problems in *communication (FB-Z)* (U = 214.00, p = .041) than mothers who were not. In step three, we compared the participants who completed the posttest with those who were included in the PPA. No significant differences were found. In step four, we analyzed the sample of the PPA for differences between groups. In the control group, significantly more fathers suffered from physical abuse between the ages of 7 and 12 (χ^2 [2,78] = 9.76, p = .005) than fathers in the SAFE group.

Parents' program participation and motivation to participate

Looking at the sample of fathers who completed pretest measures, we found that 79.7% of all fathers participated in this research design (n = 114; SAFE: n = 66; 84.6%; CG: n = 48; 73.9%). Participation at the 10 group sessions offered was equal for both members of SAFE and control group (t = −.76, p = .445; SAFE: M = 6.74 sessions, SD = 2.43; CG: M = 6.40 sessions, SD = 2.38; overall: M = 6.60, SD = 2.40). Fathers' mean participation in individual SAFE sessions was high: M = 2.75 (SD = 0.61). Participation of fathers in both SAFE and control group was positively correlated with the participation of mothers (r = .77), fathers' education level (r = .18, p = 0.50), and family status (r = .28, p = .003). Furthermore, fathers' participation was negatively correlated with their reports of aspects of the couple functioning (FB-Z; *affective composition:* r = −.26, p = .005; *emotionality:* r = −.21, p = .025), which means that fathers' participation was higher the less they reported negative aspects of the couple functioning. Paternal program participation was higher if paternal (r = −.19, p = .039) and maternal lifetime exposure to trauma (r = −.25, p = .007) was low and if symptoms of paternal depression were low (r = −.24, p = .010). When fathers were asked about their motivation for participating, they mentioned learning to deal with uncertainties (44.4%), aspects concerning their partnership with the infants' mother/motivated by the partner (32.2%), general interest (31.8%), support by an expert/other parents (19.1%), recommendation (4.8%), and other reasons (1.6%).

Mothers' (n = 143, SAFE: n = 78; CG: n = 65) participation in 10 group sessions did not differ significantly between groups (t = −1.82, p = .07; SAFE: M = 7.42, SD = 2.15; CG: M = 6.77, SD = 2.13; overall: M = 7.13, SD = 2.16). Mothers' mean participation in individual SAFE sessions was high: M = 2.72 (SD = 0.68). Mothers' participation in both groups was positively correlated with fathers' participation (r = .64, p < .001), and negatively correlated with maternal lifetime exposure to trauma (r = −.17, p = .047) and with diagnostic criteria of posttraumatic stress disorder (r = −.17, p = .042). When mothers were asked about their motivation for participating, they mentioned learning to deal with uncertainties (46.3%), general interest (36.3%), support by an expert/other parents (28.8%), interest in "attachment" (23.8%), feeling vulnerable because of own attachment experiences (18.8%), recommendation by family members, friends, colleagues or by other professionals working in the social-services field (13.8%), aspects concerning their partnership with the infants' father (11.3%), and other reasons (7.5%).

Intervention effects on infant attachment to parents

Multiple analyses on the influence of fathers' and mothers' demographic and clinical characteristics on infant-father and infant-mother attachment were conducted. There was no significant influence. Parents of the control group were more likely to have a first child (98.5%) compared to parents of the SAFE group (77.9%). There was no significant difference between parents of first and parents of second infants concerning the distribution of attachment.

Infant-father attachment

In the SAFE group, post-intervention 84.6% of infants showed a secure attachment relationship to their fathers, whereas 65.8% of the infants in the control group were coded as securely attached (see Table 2 for the distribution of infant-father attachment patterns). The difference in the distribution of attachment security in fathers was statistically significant (χ^2 [1,77] = 3.67, p = .049, *Cramer's V* = .22). The odds of infants being securely attached to their fathers were 2.86 times higher if the fathers took part in the SAFE program than if they took part in the control group program. Regarding attachment disorganization, no group differences were found (χ^2 [1,77] = 0.14, p = .481, *Cramer*'s *V* = .04). Lucassen et al. (2011) reported on 1,355 cases, of which 64.0% were securely attached infants to their father. In comparison to that distribution, infants were significantly more likely securely attached to their fathers in the SAFE group (χ^2 [1,39] = 7.13, p = .011). By contrast, in the control group, infants were securely attached to their fathers (χ^2 [1,38] = 0.11, p = .867) as likely as reported in the meta-analysis.

Infant-mother attachment

In the SAFE group, post-intervention, 66.7% of the infants were securely attached to their mothers, whereas in the control group 64.0% of the infants were securely attached to their mothers (see Table 2). The difference in the distribution of attachment security in the two conditions was not statistically significant (χ^2 [1,104] = 0.08, p = .468, *Cramer*'s *V* = .03, *odds ratio* = 1.13). In the SAFE group 85.2% and in the control group 88.0% of the infants showed an organized pattern of attachment to their mother. The difference

Table 2. Distribution of attachment patterns of infants to fathers and mothers in the Strange Situation Procedure.

	Infant to father			Infant to mother		
	SAFE	CG	total	SAFE	CG	total
	n = 39 (%)	*n* = 38 (%)	*n* = 77 (%)	*n* = 54 (%)	*n* = 50 (%)	*n* = 104 (%)
Attachment security						
secure	33 (84.6)	25 (65.8)	58 (75.3)	36 (66.7)	32 (64.0)	68 (65.4)
insecure	6 (15.4)	13 (34.2)	19 (24.7)	18 (33.3)	18 (36.0)	36 (34.6)
Attachment disorganization						
organized	34 (87.2)	32 (84.2)	66 (85.7)	46 (85.2)	44 (88.0)	90 (86.5)
disorganized/disoriented	5 (15.8)	6 (12.8)	11 (14.3)	8 (14.8)	6 (12.0)	14 (13.5)

is not significant (χ^2 [1,104] = 0.18, p = .449, *Cramer*'s V = .04, *odds ratio* = 0.78). In comparison to the distribution reported by Verhage et al. (2016) based on 2,774 cases of infant-mother attachment (52.2% securely attached), infants were more likely securely attached to their mothers in the SAFE group (χ^2 [1,54] = 4.75, p = .040), but not in the control group (χ^2 [1,50] = 2.89, p = .119).

Both infant-mother and infant-father SSP were available for 67 couples. 64.7% of infants in the SAFE group and 51.5% of infants in the control group were securely attached to both mothers and fathers. 8.8% in the intervention group and 18.2% in the control group were insecurely attached to both mothers and fathers. The remaining cases were insecurely attached either to the mother or father. The difference in distribution was not significant.

Discussion

The overall goal of this study was to assess the efficacy of the attachment-based SAFE prevention program, which explicitly includes mothers and fathers. For this reason we designed a randomized control trial to compare the attachment-based SAFE prevention program with a parallel control intervention. Because this was a first evaluation, we used a per-protocol analysis to assess whether the SAFE intervention worked under what would be considered ideal conditions of participation and motivation.

Fathers' program participation and motivation for participating

One important goal of the study was to assess to what degree it was possible to involve fathers in primary prevention. We achieved a high rate of participation: 79.7% of the fathers were successfully encouraged to participate either in the SAFE program (84.6%) or in the control group intervention (73.9%). Fathers' participated equally in intervention or control group sessions. We assume that this high rate of participation was achieved by taking into account the following strategies suggested by Panter-Brick et al. (2014) and Ramchandani and Iles (2014). The SAFE program allowed employed fathers to participate in the program, as the group sessions took place on Sundays. The important message, namely that participation of both partners was of equal importance, was communicated at all levels. Fathers were explicitly invited in our flyers, and research assistants proactively invited fathers to participate right from the beginning (Maxwell, Scourfield, Featherstone, Holland, & Tolman, 2012). Furthermore, the contents of SAFE are designed explicitly for fathers. Facilitators address fathers' needs, thus giving them the feeling of being welcome in the program. During the program, fathers receive the same intensity of attention as mothers. We discuss father-specific topics within small groups. The individual sessions contribute to the establishment of a trusting relationship with the facilitator, and fathers receive individual positive feedback on their interaction with the infant. During the postnatal group sessions, fathers have the opportunity to spend time with their infant (Maxwell et al., 2012). To involve even more fathers in prevention programs in future, we have to consider more the needs of fathers whose education level is low, who are not motivated by the infants' mother or who are not in a partnership with the mother and whose levels of exposure to lifetime trauma or depression may be high.

Results on the factors associated with fathers' participation and the results on fathers' motivation to participate highlight the important aspect of the couple domain of the 5 domain-risk model (Cowan et al., 2009): fathers participated in the programs more often if they perceived the emotional and affective aspects of their partnership as positive, which is consistent with the findings of Bryan (2000) and Cowan and Cowan (2015). Furthermore, participation was highly dependent on that of the mothers, and 32.2% of the fathers reported that their participation was motivated by their partner. Results show that there is a need to integrate and intensify this aspect in prevention programs. In the control group, fathers who dropped out reported more problems concerning aspects of their couple functioning, whereas there were no differences in SAFE between fathers who stayed or dropped out. The SAFE program covers the couple domain, for example, through discussions on the changes in the partnership during the transition to parenthood and through exercises on partner-communication. In the control group, there was no focus on the couple domain, so the parents didn't have the chance to discuss these topics. It is not clear whether the SAFE program strengthened partner relationships, because relationship quality was assessed only in the pretest and not posttest. In future, the couple assessment needs to be a central aspect of program evaluation.

Infant attachment to parents

Our main hypothesis concerning SAFE intervention effects on infants' security of attachment to their fathers was confirmed. The rate of secure infant-father attachment was significantly higher in SAFE participants (84.6%) compared to the control group (65.8%). Looking at both groups, the rate of secure infant-father attachment was high (75.3%). Compared to the 64.0% infants who were reported by Lucassen et al. (2011) to be securely attached to their father in a sample of n = 1,355 infant-father attachment classifications, significantly more infants were securely attached to their father in SAFE. The rate of secure infant-father attachment was even lower in another German sample of n = 42 infant-father attachment classifications (42.0%; König, Gloger-Tippelt, & Zweyer, 2007), which shows that the control intervention might have had a positive effect, too.

The distribution of secure attachment to mothers did not differ between groups. We were unable to confirm the second hypothesis, that the rate of secure infant-mother attachment is higher in the SAFE group compared to the control group. But compared to the 52.5% of secure infant-mother attachment reported by Verhage et al. (2016, 2018) in a sample of n = 2,774 infant-caregiver classifications, the rate of attachment security to the mother (66.7%) was significantly higher in the SAFE group in the present study.

Surprisingly, the program showed a medium effect on infant-father, but not on infant-mother attachment security. The lack of significant effects on infant-mother attachment is consistent with the results in other intervention studies reported by Egeland and Erikson (2004), Bakermans- Kranenburg, Juffer, and Van IJzendoorn (1998), and Juffer et al. (2005). We have some speculations about why fathers benefited more than mothers. In general, higher parental expectations are placed on women than on men. Benchmarks for a "good enough mother" are much higher than for a "good enough father." Mothers reported that they spent 75.9% of their time with the infant, whereas fathers spent only 25.3%. Thus, mothers tend to have much more responsibility

in daily caregiving activities, and may feel under much more pressure. Most mothers already know a lot about infant development and care, as well as having defined ideas about parenting, so they may become more selective in what they integrate into their existing repertoire. In comparison, fathers may be more open and still in need of more basic information about parenting (Zanoni et al., 2013) and in need of greater confidence in how they perform the father role; fathers experienced both of these in the SAFE intervention.

Furthermore, fathers prefer and profit from practical and action-based interventions that support them in their interactions with their infant, help them overcome their fear of contact, and help them express affection towards their infant (Zanoni et al., 2013). In the video-based sensitivity training and in the individual video feedback, fathers learn to mentalize about their infants' needs, which may have helped to improve their self-esteem and reduce insecurity in their contact with the infant, and thus enhance the quality of interaction. Bouchard, Lee, Asgary, and Pelletier (2007) found that fathers showed more interest in infants' emotional development than in physical care activities. In the control group, fathers learned a wide range of practical skills in daycare activities, whereas in SAFE the focus was wider and extended to the emotional needs and inner states of the infants and the fathers.

Secure infant-father attachment seems to be more dependent on social and contextual factors (Belsky, 1996). At higher income levels, infants are more likely to be securely attached to their fathers if fathers' involvement is high (Lickenbrock & Braungart- Rieker, 2015). In our middle-class sample participation was voluntary, so participation may be seen as an indication that fathers were ready to get involved and learn. Taken together, we assume that fathers profited mainly from the setting of the SAFE program and from taking part in a group intervention that gave them the opportunity to spend time with their infant and other fathers, and to learn how to promote a good relationship with their infant.

The lack of significant effects on infant-mother attachment may conceivably be a cause of the mothers' greater psychological stress compared to the fathers' lower levels. Although this was a non-clinical sample, rates of lifetime exposure to trauma were much higher than in a representative German sample (Häuser et al., 2011) – especially in mothers. Besides, symptoms of depression and PTSD were more prevalent in mothers than in fathers. Furthermore, 18.8% of the mothers but no father reported having participated because they felt vulnerable due to their own attachment experiences. The domain of mental health and psychological distress of the 5-domain risk model (Cowan et al., 2009) was partially covered in SAFE through talking about parental regulation of stress and the importance of social support and screening for lifetime exposure to trauma. However, the needs of parents with mental health problems may not have been covered sufficiently for some of the new mothers in this sample.

Looking at infant-attachment to both parents, we found that concordance of attachment security in SAFE (64.7%) was higher than in the control group (51.5%) and higher than reported in observational studies of attachment (45.0%; van IJzendoorn & De Wolff, 1997). In SAFE, only 8.8% of infants were insecurely attached to both parents, compared to 18.2% in the control group (17.0% reported by van IJzendoorn & De Wolff, 1997). This positive outcome in comparison to the control group, along with the overall research, may result from the relatively high percentage of infants securely attached to their

fathers in our sample, and this may be an important protective factor in children's development (Kochanska & Kim, 2013; Liu, 2008; review by Zanoni et al., 2013). The benefit of the SAFE program is evidenced by the fact that more than 90% of infants of participating parents are securely attached to at least one of the parents. The lack of experience of attachment security with one parent can be compensated by resources that emerge through a secure relationship with the other parent. The wide range of experiences associated with a secure attachment is an important resource, not only for individual wellbeing but also for fostering positive development in society.

Participants of both intervention groups received intensive support during the transition to parenthood by taking part in the group sessions guided by two facilitators. Our study design therefore ensured that basic conditions such as frequency and attention of the facilitators and other participants were the same in both groups. This allows us to understand the group differences in father-infant attachment as a direct and specific effect of the attachment-based content of the SAFE program. The results show that attachment-based content and techniques, such as psychoeducation about attachment theory, reflection on one's own childhood experiences, and sensitivity training and feedback promote the development of a secure infant-father attachment.

Limitations of the study

The efficacy of the SAFE program was assessed using a per-protocol analysis. Only those fathers who participated in at least 9 of 13 sessions and those mothers who participated in at least 10 of 13 sessions were analyzed. Internal validity is high because we only considered parents whose adherence was high. One might argue that the per-protocol analysis violates the principle of randomization because the drop-out of participants might be influenced systematically by unknown confounds, which means that groups might no longer be considered balanced. In conducting a detailed drop-out analysis separately for groups, we tried to ensure that the principle of randomization was not violated. We compared the participants in terms of socio-demographic characteristics, depressive symptoms, lifetime exposure to trauma, and in aspects of the parents' functioning as a couple. We found that participants who dropped out, especially fathers in the control group intervention, reported significantly more about problems in the aspects of their couple functioning. Because there were few differences overall between the posttest sample and the PPA sample, we expect the bias to be negligible. But still, we do not know about other factors that might have systematically influenced the noncompliance of those who dropped out. We cannot exclude the possibility that parents who dropped out were less likely to be "secure." There could potentially be an exaggerated treatment effect, because only taking into account parents who participated in almost every session does not reflect real world conditions in which there are parents whose adherence is not perfect. For further studies and for the realization of the SAFE program, we should take into account factors that affect participation to ensure that parents are motivated to take part in the group sessions, and that they are able to benefit from the attachment-based contents that are transmitted in the SAFE program.

The effects of the SAFE prevention program may be underestimated, as the control condition far exceeded "treatment as usual." Parents in the control group did not learn

explicitly about attachment theory or the concept of sensitivity. However, attachment-based content was also transmitted in the control group indirectly via the setting, including the social support received by group members and the facilitators' functioning as a secure base in times of distress.

It should be taken into account that participants were self-selected and highly motivated to participate in one of the programs. Furthermore, the level of education was high, and groups differed slightly in pretest measures of lifetime exposure to traumatic events and in previous experience in parenting. In order to generalize our findings to other populations, further studies must be designed with caution and the findings replicated in other samples. The results shed light on the effects on attachment-security, but at this time, we cannot determine which parts of the program were responsible for these results.

Conclusion

The study was successful in including both mothers and fathers in a randomized control trial on the effects of a time-consuming intervention during the transition to parenthood. It thus adds knowledge to the field of evidence-based prevention for fathers under low-risk conditions. SAFE was shown to be especially effective in promoting a secure attachment of infants to their fathers, hence increasing an important protective factor for a healthy social and emotional development of the child. The study highlights the benefit of focusing on the entire family system in promoting healthy infant development. To assess the long-term effects of the intervention a follow-up study has been conducted since 2014 assessing the effects of paternal sensitivity and children's attachment at the age of 7. It will be completed in 2019.

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6. Publikation II

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ORIGINAL PAPER

Attachment-based Prevention Program Involving Mothers and Fathers: Seven-year Post-Intervention Outcomes of a Randomized Control Trial

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Abstract
The effects of a holistic attachment-based primary prevention program (SAFE), which is aimed at fathers and mothers during the transition to parenthood, were assessed over the 7-year post-intervention follow-up of a randomized control trial. A non-clinical German sample was included in the trial (fathers: $n = 58$, mothers: $n = 71$; children: $n = 72$). The children's mean age was 7.30 years ($SD = 0.41$) and their attachment representations were assessed using a doll play procedure. Among the group of insecure mothers ($n = 58$), significantly more children (50%) in the SAFE group displayed a secure attachment representation compared to the control group (25%). No children of mothers with unresolved trauma displayed a disorganized attachment representation. In the parent domain, the increase in couple discord over time perceived by the SAFE mothers was significantly lower than that for the mothers in the control group. Furthermore, mothers in the SAFE group reported significantly higher partnership quality than the control mothers. The perceived benefits of the programs were significantly higher, in multiple domains, among SAFE fathers and mothers compared to control parents. The effect sizes were medium to large. Even after 7 years, program participation continues to have a positive impact on the children, and their fathers and mothers. The most important implication of this study for clinical practice is the need to support mothers with insecure or unresolved trauma in order to promote healthy child development. In addition, we think that it is important to support both parents during the transition to parenthood. TRN: DRKS00017050 (retrospectively registered, March, 28th 2019)

Keywords Attachment-based prevention · Couple functioning · Father involvement · Trauma · SAFE

Highlights
- We assessed the effects of an attachment-based intervention 7 years post-intervention in a randomized control trial.
- The intervention is aimed at fathers and mothers.
- The program addressed the quality of the parent's relationships and the parent-child relationships.
- Participation improved maternal partnership quality and attenuated the increase in couple discord experienced by mothers.
- The risk of the intergenerational transmission of insecure attachment was attenuated in mothers.

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Introduction

The old adage "An ounce of prevention is worth a pound of cure" has become increasingly salient in health policy over the past century (Catalano et al., 2012). The goal of primary prevention is to promote healthy living conditions in order to prevent the development of somatic and mental illnesses. The social benefit of this approach is a reduction in public expenditure (Taubner et al., 2013). SAFE (Brisch, 2010/2024) is a holistic attachment-based primary prevention program supporting mothers and fathers during the transition to parenthood in multiple domains. As an important transdiagnostic determinant, it is important to address attachment style in prevention programs.

John Bowlby's attachment theory is a fundamental psychological framework used to explain why individuals differ in terms of social, behavioral, and emotional adjustment over the lifespan (Bowlby, 1969/1997). Secure attachment is a protective factor promoting healthy development, including better self-regulation of emotion, behavior and cognition, and higher social competence (Groh et al., 2014; Pallini et al., 2018). In contrast, insecure attachment is considered a risk factor for the internalization and externalization of symptoms, and for cognitive deficits (Fearon et al., 2010; Madigan et al., 2016; Pallini et al., 2019). Disorganized attachment is also a risk factor for externalizing problem behavior like aggression, as well as for dissociative symptoms; it is also a risk factor for the development of child psychopathology (van Ijzendoorn et al., 1999). *Secure*, *insecure-avoidant*, and *insecure-resistant* are the three organized patterns of attachment; *disorganized/unresolved* attachment is the fourth attachment pattern. The patterns differ in terms of the cognitive-emotional representations of the self, others and relationships, which in turn form thoughts, emotions and behavior, especially in social situations. Inner working models of secure attachment include expectations that others will be available for support. Securely attached children use their caregiver as a secure base to explore the environment. In times of distress, the caregiver responds sensitively and offers comfort, thus regulating the child's unpleasant feelings (Ainsworth et al., 1978). Internal working models of attachment insecurity are characterized by expectations about significant others (i.e., mothers and fathers) that include insensitive, rejecting, and generally untrustworthy behaviors. Insecure-avoidant children actively ignore their caregiver or avoid expressing negative feelings. Children classified as insecure-resistant show ambivalent behaviors: they demand excessive support but ultimately feel neither comforted nor secure (Fremmer-Bombik, 2002). Whereas most infants develop *organized* strategies, some infants' strategies appear to break down such that no distinct strategy can be identified. During times of stress, children classified as *disorganized* often show contradictory behaviors, such as approach followed by freezing, the expression of fear and stereotyping (Main & Solomon, 1990).

According to attachment theory, early parent-child interactions are important for the development of inner working models of attachment. Meta-analytic data show that maternal and paternal sensitivity are important proximal antecedents of secure infant-parent attachment (De Wolff & van Ijzendoorn, 1997; Lucassen et al., 2011). Caregiver sensitivity refers to their awareness, as well as prompt and adequate reactions to the child's signals (Ainsworth et al., 1978). Besides their behavior towards the infant, the parent's own childrearing history is of importance. Mothers with a background of adverse childhood experiences (ACEs; emotional, physical, or sexual abuse) are at risk to be less emotional available in the interaction with their infant and to exhibit more likely harsh, intrusive, threatening or dissociated behaviors towards their infant (Rowell & Neal-Barnett, 2022; Crowell et al., 2010). Mother's own early ACEs were associated with increased mother's parenting stress and with increased risk for child maltreatment (Lange et al., 2018, Narayan et al. 2021). Empirically, the intergenerational transmission of secure attachment and for unresolved trauma has been documented (Verhage et al., 2016). While research on infant-father attachment remains scarce (Rowell & Neal-Barnett, 2022), some studies showed that fathers' unresolved relational loss predicted disorganized infant-father attachment (Berthelot et al., 2015; Madigan et al., 2011; Verhage et al., 2016).

From an ecological perspective, there is a need to look beyond the proximal antecedents of attachment (Belsky, 2006). In his process model, Belsky (1984) includes the social context in which the parent-child dyad is embedded. Empirical findings support a positive association between the quality of the interparental relationship and quality of the parent-child relationship (Erel & Burman, 1995). Greater marital conflict is directly associated with less security in child-mother and child-father attachments (Frosch et al., 2000). Disorganized infant-mother and infant-father attachment is predicted by low marital satisfaction and exposure to marital conflict (Moss et al., 2005; Owen & Cox, 1997). Through an indirect pathway, marital conflict affects parenting, resulting in rejecting, preoccupied or hostile behavior (Cummings & Davies, 2002; Hopkins et al., 2013; Krishnakumar & Buehler, 2000). In particular, witnessing destructive conflicts, including verbal or nonverbal aggression and hostility, has a negative impact on children's developmental outcomes (Cummings & Davies, 2002). The cognitive representation of a conflictual relationship within the family is not concordant with the representation of a secure relationship. In particular, the transition to parenthood is a vulnerable period; having a child is accompanied by personal, social, family and financial changes. There is a need to renegotiate the couples' roles, including in the context of the romantic partnership, which is a potential source

of conflict and psychological stress. A significant decline in marital satisfaction, and an increase in marital stress, has been well documented in meta-analyses (Lawrence et al., 2010; Mitnick et al., 2009).

Achieving a more comprehensive understanding of the multiple interacting determinants of secure attachment would have important implications for interventions. A secure parent-child relationship may be facilitated by numerous types of determinants. Mothers and fathers who build healthy interparental and parent-child relationships, and thus are responsive to the child's needs and able to deal their own emotional needs, are potential lifelong resources for a child (Sroufe & McIntosh, 2011).

Although the desire to integrate fathers into attachment-based interventions was already evident by the end of the last century, most attachment-based programs are designed exclusively for mothers. The few existing studies on the effects of attachment-based and broader parenting interventions on fathers have reported positive impacts on family relationships, which in turn promotes child adjustment (Belsky, 2006; Cowan & Cowan, 2014). Moreover, fathers' involvement in interventions was associated with higher effect sizes compared to when only mothers participated (Bakermans-Kranenburg et al., 2003; Magill-Evans et al., 2006).

A number of studies have shown that interventions effectively enhance mothers' and fathers' sensitivity, in turn promoting secure attachment of the infant. Video feedback appears to be the most effective method to improve maternal sensitivity (Juffer et al., 2017). A small number of intervention studies focusing on fathers successfully enhanced fathers' sensitivity to their infants (Bakermans-Kranenburg et al., 2003; Buisman, et al., 2022; De Waal, 2022).

Preventive interventions during the transition to parenthood designed to support couples had positive effects on mothers' and fathers' marital satisfaction, as well as on couple communication (Schulz et al., 2006; Shapiro & Gottman, 2005). Furthermore, interventions addressing the quality of the couple relationship had positive effects on child behavioral problems like aggression and hyperactivity (Cowan et al., 2011; Cowan & Cowan, 2014; Zemp et al., 2016). Parents' well-being is a potential target for interventions, where meta-analyses have indicated positive effects of interventions on the parental symptom burden (Taubner et al., 2013).

SAFE is an attachment-based primary prevention program aimed specifically at mothers and fathers (Brisch, 2010/2024). The main objectives of the program are to promote secure infant-parent attachment, prevent the intergenerational transmission of attachment insecurity and trauma, and support mothers and fathers as a couple during the transition to parenthood. The participants in the SAFE program learn about attachment theory and general child development. The program was designed to enhance mothers' and fathers' sensitivity in infant-parent interactions using video-based sensitivity training and individual video feedback. Mothers and fathers reflect on their own attachment experiences and unresolved trauma. The quality of the mothers' and fathers' couple relationship is also of central importance to the program.

The purpose of the current follow-up study of the SAFE long-term randomized control trial was to examine the effects of that attachment-based prevention program on mothers and fathers, and their children at the age of 7 years. In our first evaluation study, we showed that significantly more infants in the SAFE program (84.6%) displayed a secure attachment to their father after their first birthday than infants in the control group (65.8%). In contrast, the infant-mother attachment did not differ between the groups (Walter et al., 2019). Long-term studies have the advantage of providing insight into the proximal and distal effects of interventions; sleeper effects may also be discovered. Current knowledge about the long-term effects of attachment-based interventions is limited, especially when mothers and fathers are involved in the intervention. Families who attended the SAFE program are expected to have significantly superior outcomes to the control group in several domains. In this study, we tested the following hypotheses:

(1) Child domain: the children of couples in the SAFE program will be more likely to have developed a secure attachment representation by the age of 7 years;
(2) Parent-child domain: associations of insecure mother and insecure father attachments with insecure child's attachment will be less frequent among couples enrolled in the SAFE program, as will associations of mothers' and fathers' unresolved loss with children's disorganization;
(3) Parent domain: the increase in couple discord over time will be smaller, and the partnership quality will be higher, according to both mothers and fathers enrolled in the SAFE program;
(4) Parent domain: the perceived benefit of the programs for mothers and fathers in the SAFE program will be higher.

Method

Study Design and Procedure

The main study started in 2006; participation was voluntary, the mothers-to-be and the fathers-to-be were recruited via

flyers at the offices of gynecologists, in birth clinics and at family practitioners. Inclusion criteria were pregnancy before week 28 and the ability to speak and understand German (see also Walter et al., 2019). The interventions and study assessments were carried out at the Dr. von Hauner Children's Hospital, University of Munich LMU, Germany. The participants were randomly assigned (block randomization, block size: 10 couples) either to the SAFE intervention program or the parallel control intervention (CG) with no focus on attachment. Participation in the main study was the key inclusion criterion for the current follow-up study. Both interventions started during pregnancy, before the last trimester and lasted until the end of the infant's first year of life. We collected the data presented at two time points. The pretest (Time 1) took place after the first group session, and the follow-up (Time 2) took place when the children were aged 7 years. We assessed the mothers' and fathers' attachment representations and the mothers' and fathers' quality of their couple relationship at Time 1. We assessed the children's attachment representations, the mothers' and fathers' quality of their couple relationship, the mothers' and fathers' perceived benefit of the programs and the sociodemographic characteristics, at Time 2. Participants signed the informed consent before randomization, and before Time 2. To minimize drop-out, we kept in touch with the families by sending birthday presents to the children. Each family was paid 100€ and received consultations on request. All families were recruited via telephone. Of the 121 families, we reached 93 (76.9%). The final follow-up sample consisted of 71 mothers (SAFE: $n = 37$; CG: $n = 34$), 58 fathers (SAFE: $n = 34$; CG: $n = 24$) and 72 children (SAFE: $n = 38$; CG: $n = 34$). The major reasons for drop-out were refusal to participate (47.8%), geographic relocation (30.4%) or lack of time (21.8%).

Participants

We recruited a non-clinical sample. At Time 2, the mean age of the mothers was 42.23 years ($SD = 4.27$) and that of the fathers was 45.24 years ($SD = 5.73$). In total, 84.3% of mothers and 89.7% of fathers were German. The education level was high: 82.8% of mothers and 72.4% of fathers had a university degree, 14.3% of mothers and 17.2% of fathers had a high school degree, and 2.9% of mothers and 10.3% of fathers had a lower educational level. Furthermore, 71.4% of the parents were married, 8.6% were living in a permanent partnership with each other, and 14.3% were separated or divorced; 4.3% of the mothers were single mothers (since the child's birth) and 1.4% was widowed. The mean duration of the partnership or marriage until the child's birthday was 2.0 years. Minimum were -4 years, the parents came together 4 years after the child's birth. Maximum were 16.8 years. Regarding the annual family net income, for 8.6% of the participants it was 24.000€ or less, for 12.9% it was 24.001–36.000€, for 22.9% it was 36.001–48.000€, for 25.7% it was 48.001–60.000€, for 12.9% it was 60.001–72.000€, and for 14.3% it was 72.000€ or more; 2.9% of the families did not report their income. The mean age of the children was 7.30 years ($SD = 0.41$). In total, 62.5% of the children were in the first grade, 30.6% were in the second grade, and 1.4% was in the third grade. The children had an average of 0.83 siblings (*range*: 0–2; $SD = 0.61$), and 58.3% of the children were girls. Figure 1 shows the flow-cart.

Interventions

SAFE

SAFE explicitly addressed both mothers and fathers; it started during pregnancy (before the last trimester) and lasted until the end of the infant's first year of life (Brisch, 2010/2024). The program consisted of 10 full-day group sessions (four pre- and six postnatal) and three individual sessions with the mother or father (one pre- and two postnatal). Once the infants were born, they took part in the group sessions. Two female "SAFE facilitators", both experienced professionals working in social services, led closed groups of five to eight couples or single mothers. Soon after birth, the infants participated in the sessions. The facilitators received 4 days of training and were supervised. Up until the end of the intervention, mothers and fathers were allowed to ask the facilitators for support via an emergency hotline. During the program, there was a strong focus on group discussions to reflect on the mothers' and fathers' expectations, concerns, difficulties and emotions. The facilitators intensively promoted group cohesion from the outset; the group format permitted the sharing and normalization of one's experiences. Social support was provided by the two facilitators and the group. Furthermore, mothers and fathers (-to-be) were able to use the group and facilitators as a source of comfort and safety, and for joint exploration of the new tasks, as a secure base.

The program was semi-structured; especially during the postnatal sessions, the facilitators adapted the contents to the participants' needs, and served as a role model guiding the mothers and fathers in terms of adapting to their infants' rhythms. The contents of the sessions were summarized in a manual with a pre- and a postnatal section. The prenatal contents included psychoeducation about attachment theory (e.g., benefits of secure attachment, determinants of secure attachment, co-regulation, and the intergenerational transmission of attachment), and information about the infants' basic needs and the psycho-social changes that occur during the transition to parenthood. To address the transmission of insecurity and trauma, we screened the participants for unresolved trauma during individual sessions; the mothers- and

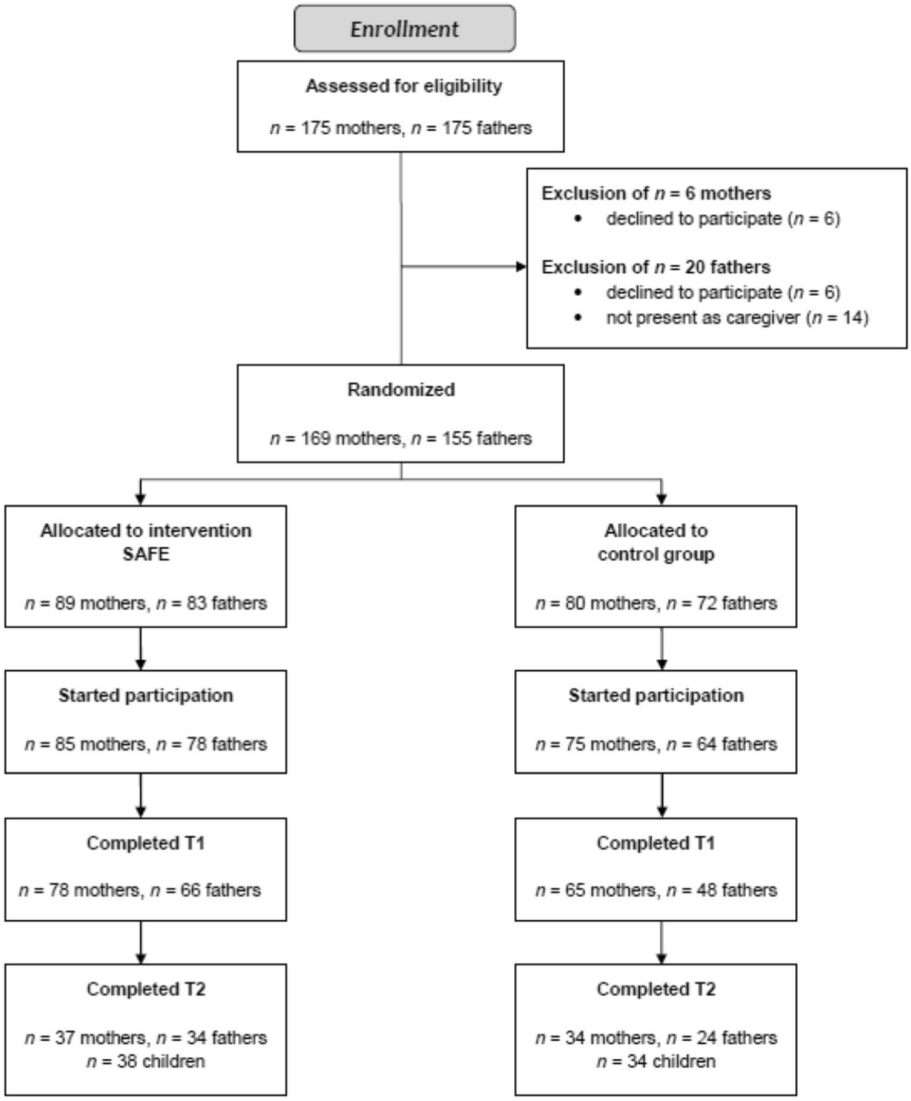

Fig. 1 Overview of the SAFE program

fathers-to-be filled out two trauma questionnaires (PDS & TAQ; Ehlers et al., 1996; Foa, 1995; Hofmann et al., 1997; van der Kolk, 1997), and the facilitators conducted the Adult Attachment Interview (AAI; George et al., 1996) with the parents-to-be on an individual basis. As well as encouraging reflection on the mothers' and fathers' own childhood attachment experiences, the facilitators offered additional support to those who had answered in a dismissive (e.g. idealized or no memory of attachment experiences) or preoccupied manner (e.g. confused or angry narrative), and to those showing signs of unresolved trauma. If necessary, the facilitators helped arrange further counseling.

The contents of the postnatal sessions included the processing of the birth, attachment versus exploration (Powell et al., 2012), the infants' socio-emotional and physiological development, feeding, sleeping, and techniques to provide comfort.

The following topics were intensively discussed both pre- and postnatally: the quality of the couple's relationship, mutual expectations ('the ideal partner'), needs within the dyad, and the expansion of roles (from being a part of a couple to additionally being a component of the mother-father-infant-triad). The couples learned about communication skills, as well as constructive and cooperative conflict strategies. By creating a list of one's own competences as a parent, and through stabilizing exercises (e.g. imaginary journeys, inner safe place (Reddemann, 2001)), the mothers' and fathers' self-esteem and resilience were promoted, respectively. The video-based sensitivity training was a key element in all group sessions. The mothers and fathers learned about the four elements of sensitivity: (a) parental awareness, (b) accurate interpretation, (c) appropriate response, and (d) prompt response to the infants'

signals (Ainsworth et al., 1978). During the training, the mothers and fathers watched video clips displaying positive infant-parent interactions and were encouraged to reflect on the types of actions, motives, emotions and empathy. In the two postnatal individual sessions, the mothers and fathers received only positive feedback on interaction scenes with their infants, to reinforce their sensitive behavior and strengthen their self-esteem as parents.

Control condition

The control group intervention (CG) consisted of a closed group of 8–10 couples or single mothers; the groups met during 10 full-day sessions (four pre- and six postnatal) that started before the third trimester of pregnancy and ran until the infants' first birthday. After birth, the infants also participated in the group sessions. There were no individual sessions. Two trained female facilitators, both experienced professionals working in social services, led the program, the processes and contents of which were summarized in a manual. The main focus was on teaching practical skills and the topics covered included birth preparation, nursing counseling, and infant care.

Measures

Children's Attachment: German Attachment Story Completion Procedure (GASCP)

We assessed the children's attachment representations using the German Attachment Story Completion Procedure (GASCP; Gloger-Tippelt & König, 2009) at Time 2. The doll play story completion procedure is based on the Attachment Story Completion Task (Bretherton et al., 1990); children are instructed to complete the beginning of five stories with attachment-related themes using a doll figure of the same sex. On the basis of verbal transcripts and videotapes, the attachment representation is classified as secure (B), insecure-avoidant (A), insecure-ambivalent (C), or disorganized (D). Inter-rater reliability, and convergent and discriminant validity, have all been shown to be good (Gloger-Tippelt & König, 2009). One GASCP in this study could not be coded. A reliable coder evaluated all cases, and 22.5% of the cases were coded by a second reliable and senior coder. Both coders were blinded to treatment group. Cohen's Kappa was substantial and significant ($\kappa = 0.73$, $p = 0.00$).

Mothers' and fathers' attachment: Attachment Assessment Projective Picture System (AAP)

We used the Attachment Assessment Projective Picture System (AAP; George & West, 2012) to assess the mothers' and fathers' attachment representations. We used the AAP at Time 1. In the AAP, adults describe, by way of standardized questions, the scenes in seven pictures designed to activate the attachment system. The transcribed narratives are analyzed and the attachment representation is coded as secure (F), dismissing (DS), preoccupied (E), or unresolved (U). The AAP has excellent inter-rater reliability, test-retest reliability and concurrent validity with the Adult Attachment Interview (George et al., 1996; George & West, 2011). The AAPs were coded by a reliable coder trained by Carol George. The coder was blinded to treatment group.

Mothers' and fathers' couple discord

Mothers and fathers who were in a permanent partnership filled out the German "Zweierbeziehungsbogen (FB-Z)" ('*questionnaire to assess couple functioning*') at Time 1 and Time 2. The FB-Z assesses their self-rated couple discord. The FB-Z consists of 28 items, scored using a 4-point Likert scale, assessing problems within couples; higher scores indicate more problems (Cierpka & Frevert, 1995). The questionnaire includes seven subscales: (a) *Task Fulfillment* taps the partners' flexibility concerning fundamental demands and the ability to solve problems collaboratively; (b) *Role Behavior* assesses agreement with respect to role expectations and fulfillment; (c) *Communication* assesses the exchange of information and mutual understanding; (d) *Emotionality* assesses the expression of emotions; (e) *Affective Composition* measures the degree of relatedness, mutual support, and trust; (f) *Control* pertains to flexibility and predictability; and (g) *Values and Norms* assesses similarities and the shared perspective of the future. The questionnaire has been validated in a German non-clinical sample and has demonstrated good psychometric properties (Cierpka & Frevert, 1995).

Mothers' and fathers' partnership quality

The mothers and fathers who were in a permanent partnership filled out the German "Partnerschaftsfragebogen (PFB)" ('*partnership questionnaire*') (Hahlweg, 1996) at Time 2. The quality of the partnership was assessed by 20 items using a 4-point Likert scale, with higher scores indicating higher partnership quality. Joint activities, future plans, connection, openness of communication and constructive conflict behavior are assessed. Six experts for couple therapy developed the questionnaire. Empirical findings on the determinants of partnership quality served as the basis. The items were selected based on the results of a factor analysis. The questionnaire has been validated in a representative German sample and has good psychometric properties, namely objectivity, reliability, internal consistency and construct validity (Hahlweg, 1996; Hinz et al., 2001). The sum score correlated significantly with all sub-

scale scores and the sum score of the FB-Z. The correlation coefficients ranged from −0.63 to −0.92.

Ratings of the perceived benefit of the programs to mothers and fathers

To explore the perceived benefit of the SAFE and control group intervention, we asked the mothers and fathers to answer a series of questions scored on a 7-point Likert scale (0 = "*not at all*"; 6 = "*absolutely*") at Time 2. Higher scores indicate a better rating, i.e. more perceived benefit. We wanted to know how the parents perceived the personal *importance* and personal *benefit* of program participation. We asked whether they were able to put into practice (*realization*) what they had learned during the programs, whether they were able to recall (*recollection*) the contents at a later date, and whether they would have preferred a subsequent *refreshment* of the contents. We also wanted to know whether program participation changed their view of parenting (*change of attitudes*), and whether they felt motivated to reflect on their own family of origin and attachment experiences (*reflection*).

Statistical analyses

For the statistical analyses, we used IBM SPSS Statistics software (version 26.0; IBM Corp, Armonk, NY, USA). First, we performed a drop-out analysis. We compared the final sample with the sample that dropped out after Time 1 in terms of demographic characteristics and mothers' and fathers' attachment representations. Next, we performed group comparisons (SAFE vs. CG) of the final sample in terms of demographic characteristic and mothers' and fathers' attachment representations. According to the scale level, we used chi-squared tests, Mann-Whitney-U tests or independent t-tests. We performed Pearson correlation analyses between the main outcome variables and the demographic variables. Next, we performed assumption checks. Our analyses were per protocol. We included the participants that had both time points of data. To test the first hypothesis, we used Fisher's exact test. To test the second hypothesis, we performed Fisher's exact tests with maternal and paternal attachment representations as covariates. To test the third hypothesis, pertaining to the effect of the intervention on the mothers' and fathers' couple discord, we first calculated the change of the FB-Z subscales over time (Δ). Next, we conducted ANCOVAs on Δ FB-Z subscales, controlling for FB-Z scores at Time 1. We adjusted the *p*-values for multiple testing according to Benjamini and Hochberg (1995). Using independent t-tests, we compared the groups in terms of the mothers' and fathers' partnership quality. To test the fourth hypothesis, we performed t-tests. The level of significance was set at $p < 0.05$. Effect sizes are reported, as studies with small sample sizes in particular may fail to detect results that are highly clinically relevant. Effect sizes can be interpreted according to Lovakov and Agadullina's (2017) criteria for small ($d = 0.15$), medium ($d = 0.36$), and large ($d = 0.65$) effects, and Cohen's (1988) criteria for small ($\eta^2_p > 0.01$), medium ($\eta^2_p > 0.06$), and large ($\eta^2_p > 0.14$) effects.

Results

Pre-analyses

Mothers ($t(139) = -4.42$, $p = 0.00$) and fathers ($t(112) = -2.24$, $p = 0.03$) who completed Time 2 had a significantly higher education level than parents who dropped out. Mothers who completed Time 2 were significantly older ($t(136) = -2.15$, $p = 0.03$) than those who dropped out. The groups (SAFE vs. CG) in the final sample did not differ significantly in any demographic characteristic, or in the parents' attachment representations.

Main analyses

Table 1 shows the distribution of the child attachment classifications (GASCP) at Time 2. As expected, more children in the SAFE group were classified as secure (51.4%) compared to the CG (38.2%), but the group difference was statistically non-significant ($\chi 2$ (1, $N = 71$) = 1.23, two-tailed $p = 0.27$, $OR = 1.71$). The relative chance of children in SAFE being classified as secure were 1.71 times higher compared to children in the control intervention. The proportion of secure attachment was higher in the intervention group compared to a meta-analysis of 14 middle-class samples including 642 children in middle childhood (36.6% secure attachment rate) (Gloger-Tippelt & Kappler, 2016). Regarding disorganization, as expected, more children in the SAFE group (94.6%) were classified as organized compared to the CG (88.2%), but the group difference was again not statistically significant ($\chi 2$ (1, $N = 71$) = 0.93, two tailed $p = 0.34$, $OR = 2.33$). The relative chance of children in SAFE being classified as organized was

Table 1 Distribution of child attachment representations in the German Attachment Story Completion Procedure at Time 2 by groups

	SAFE $n = 37$ (%)	CG $n = 34$ (%)	Total $n = 71$ (%)
Security of Attachment			
Secure	19 (51.4)	13 (38.2)	32 (45.1)
Insecure	18 (48.6)	21 (61.8)	39 (54.9)
Attachment Disorganization			
Organized	35 (94.6)	30 (88.2)	65 (91.5)
Disorganized	2 (5.4)	4 (11.8)	6 (8.5)

Table 2 Correspondence between mothers' (AAP) at Time 1 and child's (GASCP) attachment representations at Time 2 by groups

		GASCP: Security			GASCP: Disorganization		
AAP: Security		Secure *n* (%)	Insecure *n* (%)	Total *n*	Organized *n* (%)	Disorganized *n* (%)	Total *n*
Secure	SAFE	4 (57.1)	3 (42.9)	7	7 (100)	0	7
	CG	6 (100)	0 (0)	6	6 (100)	0	6
	Total	10	3	13	13	0	13
Insecure	SAFE	15 (50)	15 (50)	30	28 (93.3)	2 (6.7)	30
	CG	7 (25)	21 (75)	28	24 (85.7)	4 (14.3)	28
	Total	22	36	58	52	6	58
Total		32	39	71	55	6	71
AAP: Trauma and Loss							
Resolved	SAFE	16 (57.1)	12 (42.9)	28	26 (92.9)	2 (7.1)	28
	CG	10 (40)	15 (60)	25	21 (84.0)	4 (16.0)	25
	Total	26	27	53	47	6	53
Unresolved	SAFE	3 (33.3)	6 (66.7)	9	9 (100)	0	9
	CG	3 (33.3)	6 (66.7)	9	9 (100)	0	9
	Total	6	12	18	18	0	18
Total		32	39	71	65	6	71

AAP Attachment Assessment Projective Picture System, *GASCP* German Attachment Story Completion Procedure

2.33 times higher compared to children in the control intervention. In the sample of Gloger-Tippelt and Kappler (2016) 11.7% of the children were classified as disorganized. The meta-analysis of van Ijzendoorn et al., 1999 reported 15% children classified as disorganized in a comparable sample (n = 492, age > 24 months, middle-class and non-clinical). At 5.4%, the proportion of disorganized attachments was lower in the intervention group than in both meta-analyses.

Table 2 shows the correspondence between mothers' attachment classification (AAP) at Time 1 and child's attachment representations (GASCP) at Time 2, Table 3 shows the correspondence between fathers' attachment classification (AAP) at Time 1 and child's attachment representations (GASCP) at Time 2. In the subsample of children with mothers classified as insecure ($n = 58$), 50% ($n = 15$) of the children in the SAFE group were classified as secure, compared to only 25% ($n = 7$) of those in the CG. The group difference was statistically significant ($\chi 2$ (1, $N = 58$) = 0.3.85, two-tailed $p = 0.05$, $OR = 3.03$). The relative chance of children in SAFE being classified as secure was 3.03 times higher compared to children in the control intervention. Of the $n = 18$ mothers classified as unresolved in both groups, no child was classified as disorganized. Regarding the correspondence between father and child attachment, we found no statistically significant results.

Table 4 shows mothers' and fathers' couple discord (FB-Z). In both groups, most mothers' and fathers' mean FB-Z scores increased over time (Time 1 to Time 2), indicating an increase in couple discord. For the following FB-Z subscales, the group differences in Δ were statistically significant for the mothers: *sum score* ($F(2,53) = 8.21$, $p = 0.03$, $\eta^2_p = 0.14$), *emotionality* ($F(2,53) = 6.51$, $p = 0.03$, $\eta^2_p = 0.12$), *affective composition* ($F(2,53) = 6.98$, $p = 0.03$, $\eta^2_p = 0.12$), *control* ($F(2,53) = 5.41$, $p = 0.03$, $\eta^2_p = 0.10$) and *values and norms* ($F(2,53) = 6.60$, $p = 0.03$, $\eta^2_p = 0.16$). The results indicate a larger increase in marital discord over time, as rated by mothers in the CG compared to the SAFE group. There were no statistically significant group differences in the change in couple discord as rated by fathers. Table 5 shows the mean scores of mothers' and fathers' marital quality ratings on the PFB at Time 2. As expected, mothers' in the SAFE group ($M = 43.45$; $SD = 8.9$) reported significantly higher marital quality ($t(53) = -2.06$, $p = 0.04$, $d = 0.55$) compared to mothers in the CG ($M = 38$; $SD = 10.69$). The PFB ratings were higher for fathers in the SAFE group ($M = 38.93$; $SD = 10.7$) compared to the CG ($M = 36.7$; $SD = 11.83$), but the difference was not statistically significant.

Table 5 shows the mothers' and fathers' mean scores for the perceived benefits of the programs at Time 2. In the following domains, mothers in the SAFE group reported significantly higher perceived benefits of program participation compared to mothers in the CG: *importance* ($t(63) = -2.20$, $p = 0.03$, $d = 0.57$), *benefit* ($t(63) = -2.62$, $p = 0.01$, $d = 0.70$), *realization* ($t(63) = -2.01$, $p = 0.05$, $d = 0.52$), *recollection* ($t(63) = -2.07$, $p = 0.04$, $d = 0.55$), and *reflection* ($t(63) = -5.01$, $p = 0.00$, $d = 1.31$). For the fathers, the following domains were rated as statistically significantly more beneficial by the SAFE group compared to the CG: *change of attitudes* ($t(47) = -2.89$, $p = 0.01$, $d = 0.85$) and *reflection* ($t(63) = -2.89$, $p = 0.01$, $d = 0.86$).

Table 3 Correspondence between fathers' (AAP) at Time 1 and child's (GASCP) attachment representations at Time 2 by groups

		GASCP: Security			GASCP: Disorganization		
		Secure	Insecure	Total	Organized	Disorganized	Total
AAP: Security		*n* (%)	*n* (%)	*n*	*n* (%)	*n* (%)	*n*
Secure	SAFE	6 (50)	6 (50)	12	12 (100)	0 (0)	12
	CG	3 (42.9)	4 (57.1)	7	7 (100)	0 (0)	7
	Total	9	10	19	19	0	19
Insecure	SAFE	13 (52.0)	12 (48.0)	25	23 (92.0)	2 (8.0)	25
	CG	10 (47.6)	11 (52.4)	21	18 (85.7)	3 (14.3)	21
	Total	23	23	46	41	5	46
Total		32	33	65	60	5	65
AAP: Trauma and Loss							
Resolved	SAFE	15 (55.6)	12 (44.4)	27	27 (100)	0 (0)	27
	CG	12 (48.0)	13 (52.0)	25	23 (92)	2 (7)	25
	Total	27	25	52	50	2	52
Unresolved	SAFE	4 (40.0)	6 (60.0)	10	8 (80)	2 (20)	10
	CG	1 (33.3)	2 (66.7)	3	2 (66.7)	1 (33.3)	3
	Total	5	8	13	10	3	13
Total		32	33	65	60	5	65

AAP Attachment Assessment Projective Picture System, *GASCP* German Attachment Story Completion Procedure

Table 4 Mothers' and fathers' couple discord (FB-Z) by groups

	Mothers		Fathers	
	SAFE	CG	SAFE	CG
	M (*SD*)	*M* (*SD*)	*M* (*SD*)	*M* (*SD*)
FB-Z scales	$n = 30$	$n = 23$	$n = 29$	$n = 21$
Δ Sum score	3.33 (7.57)	10.57 (10.47)	7.97 (10.47)	10.90 (16.31)
Δ Task Fulfillment	0.90 (1.67)	1.52 (2.13)	1.31 (2.21)	1.67 (2.94)
Δ Role Behavior	0.70 (1.58)	1.70 (2.05)	0.79 (2.19)	1.33 (2.11)
Δ Communication	0.57 (1.45)	1.35 (2.21)	0.79 (1.90)	1.62 (2.56)
Δ Emotionality	−0.03 (2.03)	1.52 (2.19)	0.83 (2.00)	1.24 (2.55)
Δ Affective Composition	0.90 (1.47)	2.26 (2.14)	1.55 (1.99)	2.29 (3.07)
Δ Control	−0.03 (1.65)	0.78 (2.61)	1.41 (2.24)	1.24 (2.64)
Δ Values and Norms	0.33 (1.27)	1.43 (1.97)	1.28 (2.14)	1.52 (2.48)

FB-Z = questionnaire to assess couple functioning; Δ = change of FB-Z scales over time (Time 1 to Time 2)

Discussion

The goal of this study was to assess the long-term effects of the attachment-based SAFE program on children's attachment representations at the age of 7 years, the intergenerational transmission of insecure attachment and trauma, and the mothers' and fathers' couple relationship. The study is particularly relevant due to the inclusion of both mothers and fathers in the intervention. Since secure attachment is a protective factor over the entire lifespan, it is also an important factor for prevention (Bowlby, 1969/1997).

The main findings of our study were as follows. Concerning the intergenerational transmission of attachment, we found that in the group of children of mothers classified as insecure, significantly more children in the SAFE group were classified as secure compared to the children in the control group. Regarding the quality of the couple relationship, we observed that the SAFE mothers' increase in perceived couple discord over time was significantly lower than that of the mothers in the control group. The increases in the sum-score and scores on the following sub-scales were significantly smaller in the intervention group: *emotionality*, *affective composition*, *control*, and *values and norms*. We controlled for ratings of couple discord obtained before the intervention so that we could exclude effects of preexisting couple discord. In the cross-sectional analysis of

Table 5 Mothers' and fathers' marital quality (PFB) at Time 2 and parents' perceived benefit of the programs rated at Time 2 by groups

	SAFE *M (SD)*	CG *M (SD)*	*T (df)*	*p*	*D*
Mothers' PFB	$n = 31$	$n = 24$			
Sum score	43.45 (8.90)	38.00 (10.69)	−2.06 (53)	0.04*	0.56
Mothers' ratings of the benefits	$n = 35$	$n = 30$			
Importance	5.03 (1.12)	4.17 (1.88)	−2.20 (63)	0.03*	0.57
Benefit	5.26 (1.01)	4.23 (1.92)	−2.62 (63)	0.01*	0.70
Realization	4.94 (1.08)	4.23 (1.65)	−2.01 (63)	0.05*	0.52
Recollection	5.89 (1.32)	4.87 (2.40)	−2.07 (63)	0.04*	0.55
Refreshment	4.46 (2.77)	3.90 (3.13)	−0.75 (63)	0.45	0.19
Change of attitudes	3.74 (1.80)	2.97 (1.76)	−1.71 (63)	0.09	0.43
Reflection	4.97 (1.18)	2.87 (2.03)	−5.01 (63)	0.00*	1.31
Fathers' PFB	$n = 29$	$n = 23$			
Sum score	38.93 (10.70)	36.70 (11.83)	−0.71 (50)	0.48	0.20
Fathers' ratings of the benefits	$n = 29$	$n = 21$			
Importance	4.38 (1.68)	3.95 (2.09)	−0.80 (47)	0.43	0.23
Benefit	4.48 (1.84)	4.35 (1.81)	−0.25 (47)	0.80	0.07
Realization	4.17 (1.58)	4.00 (1.72)	−0.36 (47)	0.72	0.10
Recollection	4.96 (2.50)	4.86 (2.10)	−0.16 (47)	0.88	0.04
Refreshment	3.86 (3.03)	4.29 (2.67)	0.52 (47)	0.61	0.15
Change of attitudes	3.79 (1.80)	2.28 (1.74)	−2.84 (47)	0.01*	0.85
Reflection	3.64 (2.04)	2.05 (1.64)	−2.89 (47)	0.01*	0.84

PFB = partnership questionnaire; *$p = 0.05$; D = Cohen's d

the parents' partnership quality at Time 2, 7 years after the intervention, mothers in the intervention group reported significantly higher partnership quality compared to those in the control group. Concerning the perceived benefits of the programs, the mothers in the SAFE group had statistically significantly higher ratings for *importance*, *benefit*, *reflection, realization*, and *recollection*. The fathers in the intervention group had significantly higher *reflection* and *change of attitudes* ratings. The effect sizes were medium to large, which is particularly promising given that effect sizes usually decline with longer follow-up (Giblin et al., 1985).

Concerning our first hypothesis, we found no significant group differences. Nevertheless, the likelihood of being classified as secure and organized for children in the SAFE group was higher compared to children in the control intervention. Furthermore, the proportion of secure and organized attachments was higher in the SAFE group compared to comparable samples in meta-analyses (Gloger-Tippelt & Kappler, 2016; van Ijzendoorn et al., 1999). Our results in terms of children's attachment for the overall sample were in line with comparable long-term studies on attachment-based interventions, which found intervention effects in early childhood but not in middle childhood (Stams et al., 2001; Zajac et al., 2019). The lack of significant long-term intervention effects on children's attachment may result from the children's development. Through the sensitivity training in the SAFE group, mothers and fathers learned to respond to their young infants' signals, i.e., to respond sensitively at the behavioral level. The question of whether the parents were able to generalize their knowledge about sensitive behavior in interactions with their newborns and transfer their skills to meet their older child's needs remains unanswered. Refresher sessions on sensitive parenting emphasizing verbal expression during middle childhood may have improved the long-term outcomes.

The lack of significant group differences in the overall sample might also result from the measurement method. During middle childhood, attachment transitions from the behavioral to representational level (Kerns, 2008; Main et al., 1985). In younger infants, the Strange Situation procedure is the gold standard to assess attachment. During the Strange Situation proximity seeking behavior is displayed by infants towards the caregiver, which is crucial for attachment classification (Ainsworth et al., 1987). In story stem procedures used in middle childhood to assess children's attachment, children are instructed to complete the beginning of stories with attachment-relevant themes, such as pain due to an accident or separation and reunion with the parents. The coherence of the child's narratives, help-seeking child behavior, and maternal or paternal assistance in their narratives are relevant for the attachment classifications. In samples in which the Strange Situation procedure is used, the percentage of secure attachment

classifications is notable higher compared to similar samples in middle childhood using story completion procedures (Gloger-Tippelt & Kapler, 2016; Verhage et al., 2016). Gloger-Tippelt and Kappler (2016) argue that it is likely more demanding to generate a coherent narrative in attachment relevant situations than to initiate and maintain physical contact with the caregiver.

Our second hypothesis was partially confirmed: we found a significant group difference in insecure mothers. In the group of mothers classified as unresolved, no child was classified as disorganized in either group. Concerning the association of insecure father attachment, and insecure child attachment and the association between fathers' unresolved loss and children's disorganized attachment, we found no significant group differences. However, we observed a small trend toward superiority of the SAFE intervention over the control intervention. In a study using the Ulm Model, which is an attachment-based intervention for mothers in Germany, maternal attachment did not influence child attachment, but high risk status of the mothers (e.g. adolescent mother, low education level) moderated the effects of the intervention on mothers (Pillhofer et al., 2015). Mothers at risk have benefited most from the attachment-based intervention (Zwönitzer et al., 2015). Van Ijzendoorn et al. (1995) assumed that interventions may only be effective in samples with mothers with insecure attachments.

We conclude, that attendance of the SAFE program reduced the risk of transmission of insecure attachment in mothers. The insecure mothers might have been more susceptible to new input or more motivated to learn about the mechanisms contributing to secure attachment. Concerning our fourth hypothesis, overall, the mothers' and fathers' perceived benefits of the programs even after 7 years; the significant effects were medium to large in both parents. We think that the following aspects of the SAFE program contributed to these results. The facilitators offered additional support to parents who answered in a dismissive or preoccupied manner, and or to those who showed signs of unresolved trauma during the AAI. During group discussions, the mothers and fathers had the opportunity to explore their own attachment history and reflect on the influence of their experiences of their own upbringing on their impending parenthood. The goal was to promote attachment-friendly parenting attitudes. The sensitivity training provided an opportunity to translate theoretical knowledge into practice. The parents learned to be emotionally available to meet the infant's needs. The focus was on supporting the mothers and fathers and providing emotional support. The two facilitators focused on group cohesion. A trusting atmosphere allowed the parents to experience the group as a secure base. The mothers and fathers were invited to discuss and exchange their attitudes, expectations, concerns and joyful moments in relation to parenthood. Their parenting skills, as well as mothers' and the fathers' self-esteem as parents were strengthened in this manner.

Participation in one of the intervention groups might have reduced the risk of transmission of unresolved loss in mothers. To break the circle of intergenerational transmission of unresolved trauma, we explored traumatic experiences before the program started in all participants. During the individual sessions, the facilitators conducted the AAI with the mothers- and fathers-to-be. In case of signs of unresolved trauma, psychotherapy was recommended. One explanation for the absence of disorganized children in the group comprising mothers with unresolved risk might be that they obtained psychotherapeutic support to work on their unresolved traumatic experiences. Future research on the SAFE program should account for further counseling as a possible moderator effect. Juffer et al. (2005) were able to show that a low-intensity intervention prevented disorganization in adoptive children, who were at particular risk of attachment disorganization. Although our control group had no focus on attachment, the intervention was nevertheless of high intensity. The parents learned a lot about child care during 10 full-day group sessions, which might have helped them to structure or regulate themselves while interacting with their child.

A question remains as to why we saw intervention effects on the correspondence of mother-child attachment but not father-child attachment. The results of previous studies on parenting programs revealed that the efficacy of interventions was usually higher in mothers than fathers (Zemp et al., 2016). Furthermore, we know much more about the mechanisms that contribute to secure mother-child attachments than about those that lead to secure father-child attachments. The mechanisms of parental influence on the child's secure attachment seem to differ between fathers and mothers (Grossmann et al., 2002; Verschueren & Marcoen, 1999). The associations between fathers' attachment and paternal sensitivity and infant attachment were weaker than those between maternal attachment and mothers' sensitivity and infant attachment (De Wolff & van Ijzendoorn, 1997; Lucassen et al., 2011; Van Ijzendoorn et al. (1995). Contextual factors increase the risk of insecure father-child attachments more than they increase the risk of insecure mother-child attachments (Belsky, 2006; Bureau et al., 2017). One of the most important contextual factors for fathers' involvement in parenting, and thus for secure infant-father attachment, is the fathers' perceived satisfaction with the parents' partnership. The probability of secure father-child attachments increases when fathers have a sense of well-being in relation to their partnership with the mother (Fegert et al., 2011; Lickenbrock & Braungarts-Rieker, 2015).

Regarding the effects of the intervention on the parents' couple relationship in our sample, we observed an increase in couple discord over time in mothers and fathers in both groups, as reported previously (Belsky et al., 1983; Mitnick

et al., 2009). In the SAFE group, the mothers' increase in perceived couple discord over time was significantly lower than that of the mothers in the control group. Moreover, they reported significantly higher partnership quality compared to the mothers in the control group. Our results provide strong evidence that the intervention successfully attenuated the generally observed increase in couple discord in mothers and improved maternal partnership quality. However, in contrast to the interventions of Schulz et al. (2006) and Shapiro and Gottman (2005), and the 10-year follow-up study of Cowan et al. (2011), who found significant intervention effects on mothers' and fathers' couple ratings, we found no significant group difference in fathers' couple ratings. However, the increased couple discord perceived by the fathers in our sample showed a trend toward being smaller in the intervention group compared to the control group, while their subjective perceptions of partnership quality showed a trend toward being higher in the intervention group. In the couples-intervention of Shapiro and Gottman (2005), a male and female facilitator ran the course, it may be that the fathers would have benefited more from our attachment-based intervention if there had been also a male facilitator instead of two women. We know from other studies on the effects of interventions on fathers that they can have difficulties in discussing personal concerns in a group setting. Some fathers reported fear of public scrutiny (Scourfield et al., 2016). Fathers also felt excluded and less supported by professionals (Zanoni et al., 2013). Additionally, the fathers in SAFE might have felt uncomfortable in the attachment-based prevention group focusing on group discussions about emotional experiences. This may have been the case for parenting as well as partnership topics.

Overall, it seems to be more difficult to achieve intervention effects in the more distal child domain compared to the proximal parent domain. Two meta-analyses on the effectiveness of early prevention programs in German-speaking countries showed no effects on the child-domain, although there were effects on mother-outcomes (Taubner et al. 2013; Taubner et al., 2015).

Our results can be generalized to similar German samples, that is, to non-clinical and highly educated middle-class samples. The decrease in marital satisfaction after the transition to parenthood is particularly marked in mothers (Shapiro et al., 2000), especially those with a high education level (Twenge et al., 2003). Given that 82.8% of the mothers in our sample had a university degree, they were at high risk of a decrease in partnership quality. The most important implication of this study for clinical practice is the need to support mothers with insecure or unresolved trauma, to reduce the risk of the intergenerational transmission of insecure attachment or trauma in order to promote healthy child development. Furthermore, we think that it is essential to integrate fathers in attachment-based prevention programs. Future studies on the program including larger sample sizes should examine potential moderator effects to understand the underlying mechanisms for both mothers and fathers. Relevant questions for further studies on the SAFE program are as follows: Why have mothers, but nor fathers, benefited in terms of partnership quality and transmission of insecure attachment? Did fathers' program attendance contribute to the effects seen in mothers? How can we adapt the design of the program so that fathers benefit more? The parents' partnership quality and subjective benefits of the program should be examined as moderators of children's attachment. Other potential moderators of children's attachment are parental separation and the sensitivity of their behavior towards their child. Furthermore, we need to evaluate the intervention effect of the SAFE program in different populations (e.g., in samples of parents with low levels of education, or with different ethnical or cultural backgrounds). Investigating the efficacy of SAFE is important in clinical samples, as the children are at particularly high risk for insecure or disorganized attachment.

Limitations

Several limitations of this study should be noted. First, the high drop-out rate was an important weakness. In order to exclude a systematic drop-out effect, we conducted a drop-out analysis including socio-demographic variables and mothers' and fathers' attachment quality. Mothers' and fathers' educational level was significantly higher among those who completed the Time 2 assessment compared to those who dropped out. Mothers who completed Time 2 were significantly older than those who dropped out. Although we also documented the reasons for non-participation, we cannot exclude the possibility that the results were distorted by the drop-outs. A second important weakness was the small size of the sample, which reduced the power to detect significant effects. We should thus be careful when drawing conclusions and making generalizations. Furthermore, we could not apply statistical methods to determine whether the effects on couple relationship quality had any connection to children's attachment representation. Third, we did not assess the quality of the mothers' and fathers' marital relationship in the posttest session, which would have provided more insight into the effects of the intervention on the couple relationship. Fourth, both interventions aimed to support the mothers and fathers during the transition to parenthood, but most parents-to-be wanted to be assigned to the SAFE program. Some mothers and fathers in the control intervention reported disappointment about their group assignment, which may have had a negative impact on their ratings regarding the perceived benefits of the program.

Conclusion

Our study contributes to the field by integrating fathers in primary attachment-based prevention. To our knowledge, no comparable attachment-based intervention in Germany has addressed secure infant-mother and infant-father attachment relationships and the parents' partnership quality. In Germany, parental allowance was introduced in 2007. Since then, parents have been able to freely divide the 14 months of state-sponsored parenting time at home. On the political and state side, this contributes to the process of change of the traditional role models in Western culture; mothers are supported to return to work and fathers have more opportunity to take an active parenting role and care for their children. Research clearly shows that active fatherhood has a positive impact on social, emotional and behavioral child development. The presence of at least one secure attachment person can buffer the deficits of the other person, as well as the effects of negative events such as separation or sickness, and give the child emotional security (Verschueren & Marcoen, 1999). "The parents get along well", the statement had the highest level of agreement, followed by "secure financial circumstances" in a representative German survey assessing the necessary conditions for a good upbringing (Fegert et al., 2011). Therefore, we think that it is clinically important to provide effective prevention programs that integrate fathers and help them establish secure attachments with their children. Attachment-based prevention aims to promote warm and engaged family interactions. It is important to support families through successful prevention to enable children to grow up into healthy adults. Therefore, work should continue to elucidate the mechanisms of attachment-based prevention programs.

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Compliance with Ethical Standards

Conflict of Interest The authors declare no competing interests.

Ethical Approval The study was realized by resources of the University. Approval was obtained from the ethics committee of the Faculty of Medicine, University Hospital LMU Munich. The procedures used in this study adhere to the tenets of the 1964 Declaration of Helsinki.

Informed Consent Written informed consent was obtained from all participants, informed consent was obtained from the children's parents.

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