Epistemic stance, mentalizing and adolescents' perception of the therapeutic alliance

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DClinPsy Thesis (Volume 1), 2024
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UCL Doctorate in Clinical Psychology
Thesis declaration form

I, Shannon Potter, confirm that the work presented in my thesis is my own. Where information has been derived from other sources, I confirm that this has been indicated in the thesis.

Overview

Part one of this thesis presents a systematic review, which was conducted as part of a joint project. The review explores the association between mentalizing and attachment security in a clinical population. 15 papers were synthesised, and meta-analyses were used to provide an estimation of the effect size between mentalizing and insecure attachment, and mentalizing and secure attachment. The results found a significant positive association between attachment security and stronger mentalizing ability, and no significant associations between attachment insecurity and mentalizing ability. Additionally, high heterogeneity was revealed between studies. Exploring this highlighted operational and methodical inconsistencies in the way that mentalizing and attachment are measured.

The empirical project in part two examines whether epistemic stance and mentalizing ability influence perceptions of the therapeutic alliance. This study employed a cross-sectional design. The sample included both adolescents' currently receiving psychology therapy, and their therapists. Three perceptions of the therapeutic alliance were captured: the adolescents' own perspective, the therapists own perspective, and finally adolescents were also asked to take their therapists perspective. An interaction between higher mentalizing ability and capacity for epistemic trust, appeared to be associated with a higher rating of the therapeutic alliance by adolescents. This empirical project was also conducted as a joint project

Part three provides a critical appraisal of the thesis. Here, reflections are shared on the research process, from previous clinical experiences that influenced the selection of this project, through to the experience of holding the role of both researcher and clinician within one clinical service. Finally, implications of the research are explored, to both personal clinical practice and in considering future directions for this area of research.

Impact statement

The findings presented in this thesis have key implications for clinical practice and future research. Firstly, the preliminary findings in part two indicate that an adolescent is more likely to judge the therapeutic alliance to be positive if a stance of epistemic trust is established and their capacity to mentalize has been fostered. This has important implications for clinical practice, as it builds on consistent evidence showing that a patient's perception of the alliance is an accurate predictor of treatment outcomes. Crucially, it appears to be the presence of both mentalizing and epistemic trust that influences alliance judgements, and not either factor alone. This highlights the importance of the therapist's role in activating the adolescent's mentalizing capacity and fostering epistemic trust within the therapeutic relationship.

The therapeutic process required to achieve this appears to be relevant across all psychological approaches, as conceptualised within the model of three communications systems. Establishing epistemic trust appears to be important at an early stage of therapy, as the benefits of a strong therapeutic alliance are likely to be realised only if epistemic trust has been established.

Secondly, the findings in paper two also evidence that adolescents and professionals tend to perceive the alliance differently. This corroborates with previous research, which also shows that the adolescent's perception of the alliance more accurately predicts treatment outcomes than the therapist's. This highlights to professionals the importance of engaging authentically with patient feedback and using appropriate methods that facilitate this. Again, this appears to be relevant in early sessions, and not only at the end of treatment.

This thesis identifies a need for future empirical research to take a longitudinal approach to elucidate how epistemic stance, mentalizing, and the therapeutic alliance develop

over time. Further research is also required to explore how the interplay between epistemic stance and mentalizing varies in relation to psychological difficulty, particularly for individuals with a diagnosis of borderline personality disorder.

To continue this area of research, it will be beneficial to address the methodological and operational inconsistencies in key constructs, which have been highlighted in paper one of this thesis.

Specifically, a more organized approach to the operationalization of insecure adult attachment is required, which would lead to better refinement of measurement tools in studies of insecure attachment. Researchers should also carefully select measures of mentalizing, ensuring they account for attachment-related stress, which appears to be crucial for individuals with insecure attachment styles to experience mentalizing difficulties.

Overall, this field offers important opportunities for research aimed at bridging the gap between theory and practice, enhancing clinical outcomes for young people and improving understanding of key constructs in both an adult and adolescent population.

This research is ongoing as part of a wider project. The findings from this project will be shared with the clinical services that participated. These findings will also be prepared for publication in relevant journals. Specifically, the study in paper two will be written up as part of a wider project with my two research colleagues, to produce a meta-structural equation model, with a view to pursuing publication in a scholarly journal.

Acknowledgements

Firstly, I would like to thank the adolescents and professionals who generously provided their time and thoughtful contributions for this project. Your participation is hugely appreciated and has enabled this thesis to take place.

I wish to thank my supervisors, Professor Peter Fonagy and Tobias Nolte MD for sharing your wisdom and thoughtful feedback. Additionally, I would like to thank Dr Rob Saunders and Dr Ciaran O'Driscoll for your knowledge and helpful reassurance.

Thank you also to the three clinical services that kindly agreed to join us in this project and facilitated recruitment and participation. In particular, I would like to express sincere thanks to two of my previous clinical supervisors, who not only generously gave their time to support with this project in their respective services but have also taught me so much about working therapeutically with young people.

Thank you so much to my parents, the belief you have in me keeps me steady, and your encouragement and support keeps me going. To my sisters, your drive to pursue careers that your love inspires me to continue pursuing my own. To my amazing friends, thank you for knowing that I am reward-motivated and being so diligent in your support of this. To my DClin friends, thank you for your advice, your encouragement, and the wonderfully meandering voice notes that kept me motivated and became the background track for my writing. Thank you also to my fellow researchers, Sally and Susie – I feel so grateful to have been part of such a thoughtful, encouraging and committed research team.

Finally, to Tom, you have spent many months meeting me where I am at on our dance of reciprocity. The depths of your patience and willingness to listen are evidenced most clearly by the fact that you know what a dance of reciprocity is. Thank you.

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Part 1: Literature Review

The association between attachment security and mentalizing ability in a clinical population.

Abstract

AIM: Disruptions to attachment security and mentalizing difficulties have been posited as key transdiagnostic factors underlying psychological difficulty. No existing review has examined the literature which explores how attachment and mentalizing interact in a clinical population. This review provides a quantitative synthesis of the strength and direction of the associations between attachment styles and mentalizing ability.

METHOD: A systematic search of the literature was conducted to identify studies which examined the constructs of attachment security and mentalizing ability in clinical samples. The electronic databases: Web of Science, PsycINFO, Embase, CINAHL, Scopus, and PubMed were searched. Meta-analyses were used to provide an estimation of the effect size of the relationship between mentalizing and both insecure attachment and secure attachment, in a clinical population.

RESULTS: The search revealed fifteen studies that met inclusion criteria. Secure attachment was positively associated with higher mentalizing abilities ($r = 0.31$), while evidence was not found for the association between insecure attachment and mentalizing ability. Substantial heterogeneity was also revealed between studies. In exploring this heterogeneity, the significant influence of the type of mentalizing measure used was revealed and inconsistencies in the operationalisation of attachment were highlighted.

CONCLUSION: The significant finding here draws attention to positive associations between mentalizing and attachment security in a clinical sample – an area that tends to receive less consideration in literature, compared to attachment insecurity. This review also underscores methodological inconsistencies related to attachment and mentalizing constructs, which will be important to refine as part of future research.

Introduction

Attachment

First developed by John Bowlby (1969/1982), attachment theory describes a universal and biologically underpinned process in which the infant forms a relational bond with their primary caregiver, developing mental representations of the self and others based on the quality of exchanges with this caregiver. Healthy emotional development depends on the presence of a consistently available and responsive caregiver. These mental representations are 'internal working models' (IWM's; Bowlby, 1973), which provide a largely enduring template for personality development and relational functioning (Cassidy & Shaver, 1999; Fonagy & Campbell, 2016).

Attachment was first operationalised in infants by Ainsworth et al. (1978) using the Strange Situation paradigm. Based on observations of the individual differences in infant's interactions with their mothers at times of separation and reconnection, Ainsworth identified three attachment types. An infant with a 'secure' attachment is distressed when separated from their caregiver, and signals distress to the parent on their return but is quickly calmed following contact. The 'insecure avoidant' infant does not outwardly show distress on separation with the caregiver and shows little interest when they return. The 'insecure ambivalent/resistant' infant shows intense distress on separation with the caregiver, and although they signal reconnection with the caregiver, they will resist contact.

Adult attachment research revealed that although early attachment styles provide long-lasting IWMs, they are not immutable. A recent longitudinal study of over 4,000 participants demonstrated that while the natural occurrence of most life events led to temporary changes in attachment styles, some events - such as getting in a fight with a partner – did result in an enduring change to the adult's style of attachment (Fraley et al., 2021). Evidence such as this has led to the current understanding that adult attachment is rooted in infant-caregiver

attachment models and remains relatively stable across the lifespan; however, it is dynamic in nature and can remain open to influence by life experiences (Waters et al., 2000; Zhang & Labouvie-Vief, 2004).

Within adult attachment research, two independent traditions of theory and measurement have evolved, both with their own assessment methodology. Main, Cassidy, & Kaplan (1985), developed the Adult Attachment Interview (AAI) which focusses on current adult mental representations of early working models of caregiver relationships, to assess unconscious attachment states. The AAI recommends the classification of attachment styles as: secure/autonomous, avoidant/dismissing, anxious/preoccupied, and unresolved/disorganised. The second tradition emerged from social psychology: Hazan & Shaver (1987) proposed that attachment patterns in infancy would emerge in adolescence and adulthood as interpersonal styles; influencing how the individual thinks, feels and behaves in close relationships. Hazan & Shaver initially identified four distinct categories of attachment in adulthood, which built on the work of Ainsworth - secure, anxious, avoidant, and dismissing.

Subsequent literature then argued for a move toward a dimensional conceptualisation of attachment styles rather than categorical, particularly for use in research as subtle individual differences can be detected. According to this model, attachment anxiety and attachment avoidance are identified as two independent dimensions of an insecure attachment style (Brennan, Clark, & Shaver, 1998; Fraley & Waller, 1998). Attachment avoidant individuals are prone to fierce self-reliance and are more likely to de-value intimacy in close relationships, while attachment anxious individuals tend to understand themselves as unworthy, and be highly dependent on others, fearing rejection. An individual who is low on both of these dimensions is understood to have a secure attachment, these individuals tend to understand themselves as lovable and capable, and others as supportive and available

(Mikulincer & Shaver, 2007). This dimensional conceptualisation has received criticism when applied to the development of measurement tools, for example the Experience of Close Relationship scale (Fraley et al., 2000). Researchers argue that secure attachment represents the presence of an inner resource enabling the individual to cope with interpersonal stressors - not merely the absence of attachment anxiety or avoidance (Raby et al., 2021; Justo-Núñez et al., 2022). There are therefore many approaches to measuring attachment which are based on varying conceptualisations of attachment. However, all of the available measurement tools differentiate between secure attachment and subtypes of insecure attachment (Ravitz et al., 2010)

Mentalizing

Related to attachment theory is the concept of mentalization, defined by Fonagy and colleagues as one's imaginative capacity to interpret and understand the behaviour of the self and others, in terms of intentional mental states, such as their needs, affects, beliefs and goals (Fonagy & Target, 1997; Fonagy & Target, 2006). The capacity to mentalize was operationalised as reflective functioning (RF; Fonagy, Steele, Steele & Target, 1998), itself defined as the ability to think about and reflect on the mental states of the self and others when appraising attachment experiences (Fonagy & Target, 1997).

Mentalizing is believed to be central to the consolidation of one's sense of agency and self-regulation and allows the behaviour of others to be experienced as predictable and meaningful (Badoud et al., 2018). As an adaptive human capacity, the transtheoretical nature of mentalizing has been increasingly understood; its disruption has been associated with the development of psychological difficulties across diagnoses, and similarly the therapeutic goal of fostering an individual's mentalizing capacity has been revealed as a common factor across psychotherapies to support recovery (Fonagy & Allison, 2014).

Mentalizing represents a spectrum of capacities, and has been conceptualised as comprising four dimensions, each with two poles that represent distinct underlying neural circuits (Fonagy & Luyten, 2009; Frith & Frith, 2021). 1) Mentalizing in relation to the self and to others, 2) mentalizing based on external or internal features of self and others, 3) cognitive versus affective mentalizing and, 4) automatic versus controlled mentalizing. Automatic mentalizing is reflexive and quick, requiring little conscious effort and connected to older neural circuits that primarily rely on sensory information. Controlled mentalizing is a conscious and reflective process, subserved by newer brain circuits that rely on linguistic processing (Luyten et al., 2020). These polarities can usually be used flexibly, depending on the processing needs of the context or situation.

Mentalizing and attachment

Mentalizing and attachment are understood to be deeply entwined constructs across the lifespan and between generations (Camoirano, 2017; Fonagy & Target, 1997;Fonagy & Bateman, 2016). The theory of mentalizing was initially founded within attachment research, and early formulations (Fonagy et al., 1991a; Slade et al., 2005) focussed on the role of the infant-caregiver attachment in fostering the development of mentalizing capacities. This was first empirically demonstrated in the London Parent-Child Project (Fonagy et al., 1991b) in which security of attachment was associated with stronger mentalizing abilities in infants (Fonagy & Target, 1997). Continued research highlighted that the caregiver's mentalizing capacity is dependent on their own attachment history. A caregiver with high levels of attachment security who has developed coherent mental representations of the self, is able to better understand and be sensitive to their infant's mental states, which in turn fosters this capacity in the infant (Camoirano, 2017; Fonagy & Luyten, 2018).

More recently, wider socio-cultural factors and the interaction with others outside of the attachment dyad, have been increasingly recognised as important influences of both

attachment security and mentalizing (Fraley et al., 2021; Verhage et al., 2016). This has prompted a shift from the developmental understanding toward a broader social-evolutionary communication model of mentalizing. According to this model, while parental mentalizing plays a key role, it is acknowledged that this process is embedded within a rich array of factors including peer and family relationships and cultural contexts (Campbell & Allison, 2022). These influences can disrupt or foster an individual's developing capacity to mentalize and their openness to social learning from others, into and throughout adulthood (Fonagy et al., 2022; Luyten et al., 2020).

Understanding mentalizing and attachment in clinical populations

Evidence has shown that disruptions to both attachment (e.g. Parada-Fernández et al., 2021; Zhang et al., 2022), and mentalizing ability (Belvederi Murri et al., 2017; Musetti et al., 2022) are transdiagnostic vulnerability factors to poor mental health outcomes. In clinical samples, a close association has been evidenced between insecure attachment styles and mentalizing difficulties, for example for individuals with eating disorders (Cortés-García et al., 2021), and personality disorders (Ball Cooper et al., 2021; Levy, 2006).

An individual's attachment security and their mentalizing ability are factors that both play a key role in the development of psychological difficulties, additionally mentalizing and attachment security are often important targets for therapeutic intervention. There is however currently little clarity on the relationship between attachment style and mentalizing ability in clinical populations. It would therefore be beneficial to understand more clearly the relationship between these two constructs, in a clinical sample specifically.

Current literature suggests that securely attached individuals tend to have positive relational expectations, based on consistent positive attachment experiences in early life. When facing perceived stress, they are able to regulate their affective state by relying on these positive relational expectations and flexibly mentalize the self and other. Meanwhile,

insecurely attached individuals, who are not able to rely on positive relational experiences, are more prone to experience mentalizing difficulties when faced with stressful conditions, fostering emotion dysregulation and a reliance on less helpful strategies to cope with stress (Fuchs & Taubner, 2019; Mikulincer & Sheffi, 2000). This in turn can increase vulnerability to psychological difficulties.

Automatic and controlled mentalizing processes appear to play a key role here (Luyten et al., 2020). In the presence of increased stress, patterns of brain activity switch from the use of neural systems associated with controlled mentalizing, to those associated with the fast, automatic mentalizing which would usually benefit the fight/flight response (Lieberman, 2007).This results in the individual attempting to rapidly make sense of their own mental states and those of others, for example by relying on external cues (such as facial expression, rather than internal cues via perspective taking). This can leave the individual vulnerable to core features of psychopathology, such as difficult interpersonal interactions, emotion dysregulation and poor impulse control (Cortés-García et al., 2021; Nolte 2013). An insecure attachment has been associated with a low threshold to 'switch' toward automatic and impulsive processes of mentalizing in the presence of stress, and an inflexibility in thinking about others' mental states, which in turn increases vulnerability to psychological difficulties (Fernández et al., 2021; Fonagy & Luyten, 2016; Santoro et al., 2024)**.**

Meanwhile, a person with a secure attachment style is more likely to use flexible mentalizing and constructive strategies to regulate negative emotional states linked with stress, and so attachment security appears to raise the threshold at which this switch to automatic mentalizing occurs (Green et al., 2021; Santoro, 2021). Although this has been more frequently explored in non-clinical samples, this association between attachment security and higher mentalizing capacity has also been evidenced in clinical samples (Condino et al., 2022; Fisher, 2011).

Furthermore, recent empirical evidence indicates that there may be differences in the severity of mentalizing difficulties between individuals with an avoidant-attachment style and individuals with an anxious-attachment style. Anxious-attachment styles are more strongly associated with impairments in mentalizing, and subsequent vulnerability to stress and the risk of psychological difficulty (Molnár & Szabó, 2024; Santoro et al., 2024; Schwarzer at al., 2023), however this finding is not consistent in the literature (Ball Cooper et al., 2021; Green et al., 2021).

Current review

Researchers have outlined a theoretical basis from which to understand the relationship between mentalizing and attachment; drawing on an existing understanding of attachment theory, developmental psychopathology, and neurobiology (Luyten et al., 2020; Target and Fonagy, 2008). With the increasing availability of measurement tools related to these constructs, empirical research examining the association between mentalizing and attachment in clinical populations has been growing in prevalence. This has enabled an increasing understanding of the interactions between disruptions in attachment and mentalizing, and how they can be applied as key transdiagnostic factors underlying psychological difficulties. Understanding more about the associations between these constructs in a clinical population specifically would be helpful, as mentalizing and attachment security are proposed as key targets for therapeutic intervention.

There are however currently no reviews which examine this literature on the relationship between mentalizing and attachment in clinical populations. Only two existing reviews were found that explored attachment and mentalizing together, however they both explored the separate influence of mentalizing and attachment on specific areas of clinical interest, in child and adolescent clinical groups (Caldarera et al., 2022; Jewell et al., 2016). This review therefore sought to address this gap by synthesising the available literature, with

an aim to provide an estimation of the effect size of the proposed association between attachment styles and mentalizing ability in a clinical population[1]. In line with current operationalisations of attachment and the available attachment measurement methods which distinguish between patterns of secure attachment vs insecure attachment, in this review secure attachment and insecure attachment sub-types will be analysed separately.

The primary objective was to conduct two meta-analyses with the following research questions in mind:

1. Is there an association between the capacity to mentalize and insecure attachment in a clinical population?
2. Is there an association between the capacity to mentalize and secure attachment in a clinical population?

It was hypothesised that insecure attachment would be negatively associated with a higher mentalizing capacity and that secure attachment styles would be positively associated with higher mentalizing capacities.

Given the aforementioned recent findings indicating a difference in the way mentalizing is related to avoidant and anxious attachment, sub-group analysis was also planned as a secondary objective to see if the association between mentalizing and insecure attachment differed by the specific domains of insecure attachment styles (insecure-anxious and insecure-avoidant).

A transdiagnostic perspective was taken for this review given the literature highlighting the transdiagnostic and transtherapeutic nature of mentalizing (Luyten,

[1] This aim is devised in the context that this review has been conducted as a precursor to a wider project, which will aim to use a meta-structural-equation model to explore the direct and indirect associations between attachment style, mentalizing, and the therapeutic alliance, for a clinical population in any type of psychological treatment.

Campbell, Allison & Fonagy 2020; Luyten et al., 2024). This meant that the systematic search would not be limited by specific clinical diagnosis or treatment approach, however where available, diagnosis information was collected so that it could be explored as a moderator.

Information on age and measurement type was also be collected where available to be included as moderators in the primary meta-analyses. The rationale for including age is that literature currently suggests that attachment style may become increasingly stable with age (Fraley & Dugan, 2021), and longitudinal studies find that mentalizing tends to improve into adulthood (Desatnik et al; 2023; Poznyak et al., 2019). It was therefore expected that an increase in age would be associated with a stronger association between secure attachment and mentalizing, and a weaker association between insecure attachment and mentalizing.

Method

This review was conducted as part of a wider project with two other UCL Clinical Psychology doctoral students (Bell, 2024; Taplin, 2024). The wider project aims to conduct a meta-structural-equation model to explore the direct and indirect associations between attachment style, mentalizing and the therapeutic alliance in clinical samples in any type of psychological treatment (PROSPERO registration: CRD42023447454) (See Appendix A for a joint project statement). The current review takes one 'arm' of this model, and specifically explores the association between attachment style and mentalizing in a clinical sample.

Search strategy

A systematic review was conducted by searching the following electronic databases until October week 1 2023 for peer-reviewed articles on attachment and mentalizing or reflective functioning: Web of Science, PsycINFO, Embase, CINAHL, Scopus, and PubMed. The search strategy included the terms*:* attach* AND mentalis* OR mentaliz* OR "reflective function*".

Eligibility criteria

Inclusion criteria: were (i) empirical papers, that included (ii) a validated measure of attachment, (iii) a validated measure of mentalizing, (iv) English language sources, (v) and a sample size of at least $N = 10$. Inclusion criteria related to the participant characteristic were also imposed. Papers must include a clinical sample with participants who: have a psychological disorder or difficulty, in any type of psychological intervention, with a minimum age of 12 set. To reduce the potentially confounding effects of treatment type (indicated by studies, such as Compare (2018) that find psychological treatment influences attachment style) this review only includes studies with clinical samples where data taken at baseline of treatment was available.

Exclusion criteria: were (i) qualitative studies, (ii) single case studies (iii) non-peer-reviewed studies and dissertations.

Screening

The search was conducted according to PRISMA guidelines (Page et al., 2021), see Figure 1. Duplicates were removed using Zotero's duplicate identification strategy, followed by manual searching. Using eligibility criteria, titles and abstracts of papers were then screened, followed by a full article text screen. At the full-text screen stage a random 10% sample of identified studies were reviewed independently by a doctoral student (ST) from the research team. Authors of relevant articles were contacted by email to request unpublished data that met the inclusion criteria and reference lists were manually searched.

Assessment of bias

Two independent reviewers (SP and SB), both doctoral trainees and research partners, assessed the risk of bias of the included studies using the Joanna Brigg's institute checklist (JBI; Moola et al., 2020) for analytical cross-sectional studies, and an adapted version of the Newcastle-Ottawa Scale (NOS; Bawor et al., 2015) for the longitudinal studies. Any

disagreement in the assessment process was resolved by discussion with a third reviewer (ST).

The NOS was adapted for use to evaluate the quality of any observational design (Bawor et al., 2015) and has been used in previous systematic reviews (Martinez-Calderon et al., 2020; Perera et al., 2015). This adapted version comprises of seven questions, across four domains of evaluation: selection bias, performance bias, detection bias, and information bias. Risk of bias is rated on a scale from 0 (high risk of bias) to 3 (low risk of bias).

The JBI checklist is designed for assessing the quality of cross-sectional studies for the purpose of systematic reviews. Risk of bias is assessed by identifying whether the study meets 'yes', 'no' or 'unclear' for each item. There should be at least five 'yes' items to meet minimum quality (e.g., Apóstolo et al., 2018). This tool comprises of eight items, however item 3 from the original checklist ("was the exposure measured in a valid and reliable way?") was excluded due to non-applicability to the included studies. To ease comparison of assessment ratings across the two tools, the seven JBI items have been organised within the same four domains of evaluation used by the NOS, when presented in the results section.

Data extraction

The following data was extracted from the full text articles of included studies: sample size, year published, age (mean and SD), gender (% female participants), ethnicity (% global majority), sample type, primary mental health need, measure of attachment, measure of mentalizing. In the case of longitudinal papers reporting multiple time-points, only the earliest time point was extracted. Details of measurements used for the attachment and mentalizing variables were also coded, this included the type of instrument and the direction of measurement (i.e., whether higher scores indicate higher or lower mentalizing). Where instruments were used that measure the same construct of attachment or mentalizing, but the direction of measurement was the opposite to the rest of the measures in included studies,

correlations were inverted for the purpose of the analysis. In these cases, a sensitivity analysis will be run to clarify whether this methodological decision influences the findings.

Pearson's correlation coefficients between mentalizing and attachment variables were extracted. In line with the primary aims of the review two groups were applied: 1) secure attachment and mentalizing, and 2) insecure attachment and mentalizing.

Some attachment measures, for example the Experience of Close Relationship scale (ECR), produce separate coefficients for both avoidant and anxious attachment styles. These each represent separate but related types of insecure attachment and could both be grouped within insecure attachment. In studies where this occurred, all available correlation coefficients were extracted. However, the separate coefficients for attachment anxiety and attachment avoidance could not both be included in the primary meta-analysis (exploring insecure attachment and mentalizing ability). This is because reporting multiple effect sizes from the same sample would violate the assumption of independence needed to carry out a meta-analysis. Therefore, to ensure that studies using the ECR could be included within the primary meta-analysis, only the coefficient between *avoidant* attachment and mentalizing was used. The avoidant attachment sub-scale was selected here as it tends to have slightly better psychometric properties than the anxious attachment dimension of the ECR (Spruit et al., 2020). For clarity, in studies that used the ECR the coefficients for both the anxious attachment and avoidant attachment sub-scale were collected, to be used in the planned sub-group analyses.

Where a Pearson's correlation coefficient was not presented in the data, the first and last authors were contacted to request this. In the case that a paper reported an effect size between variables that was not a correlation coefficient, for example a regression coefficient, this was also extracted with the intention of imputing this into a correlation coefficient where possible.

Analytic Strategy

As both the mentalizing and attachment constructs are dimensional, the Pearson's correlation co-efficient was used as the effect size of the current review. In line with the review hypotheses, two primary meta-analyses were conducted using Meta-Essentials 1.5 (Suurmond, van Rhee, & Hak, 2017) to examine: 1) the relationship between mentalizing and secure attachment, and 2) the relationship between mentalizing and insecure attachment.

Subsequent analyses were carried out on the sub-groups of insecure attachment styles based on the available data: 3) the relationship between mentalizing and anxious-insecure attachment, and 4) the relationship between mentalizing and avoidant-insecure attachment.

To control for variance being influenced by the correlation coefficient, Meta-Essentials automatically recodes correlation coefficients *r* into Fishers z-values for analysis, and back to *r* for interpretation (Borenstein et al., 2011). Values for meta-analytic estimates, *k,* and significance testing information are presented in the results for each analysis. All analyses are two-tailed. 95% confidence intervals (CI) are presented for each analysis, describing the range of values within which we can be reasonably sure the truth lies. Interpretation of CI's are particularly relevant where there is moderate and high heterogeneity (Dettori et al., 2021).

Assessment of heterogeneity

Higgins and Thompson I^2 is used to measure heterogeneity in this analysis, with the thresholds 25%, 50%, and 75% representing low, moderate, and high heterogeneity (Higgins et al., 2003). I^2 measures the proportion of variability, which is accounted for by true heterogeneity, rather than sampling error. Although the classic measure of heterogeneity is Cochran's Q, the I^2 statistic has the benefit of being less dependent on the number of included studies than Cochran's Q and therefore has more power in a small dataset (Fletcher, 2007). Despite this benefit, it is acknowledged that I^2 is still affected by bias, and should be

interpreted with caution (von Hippel, 2015)**.** It was anticipated that there would be substantial between-study heterogeneity, and so a random-effects model was used in analyses (Riley et al., 2011). Anticipated sources of heterogeneity included: sample characteristics, recruitment strategy, study setting, administration of measurements, therapeutic delivery and sources of study bias. Where the data allowed, the influence of possible sources of heterogeneity were investigated using moderator analyses.

Sensitivity analysis

The following sensitivity analyses were used to assess whether findings were influenced by methodological decisions made during the review process:

1. Studies were assessed for risk of bias, with the intention of excluding studies that indicated a high risk of bias.
2. Funnel plots were visually inspected for outliers. In the case of outliers, individual studies were removed, and the meta-analysis was re-run to assess the impact of the outlier study on the combined effect.

Results

Following a systematic search of the identified 15 papers, two meta-analyses were conducted to examine the association between mentalizing abilities, with both secure and insecure attachment styles, within a clinical population. Sub-group analyses were also conducted between mentalizing ability and attachment anxious-insecure, and mentalizing and attachment avoidant-insecure subgroups.

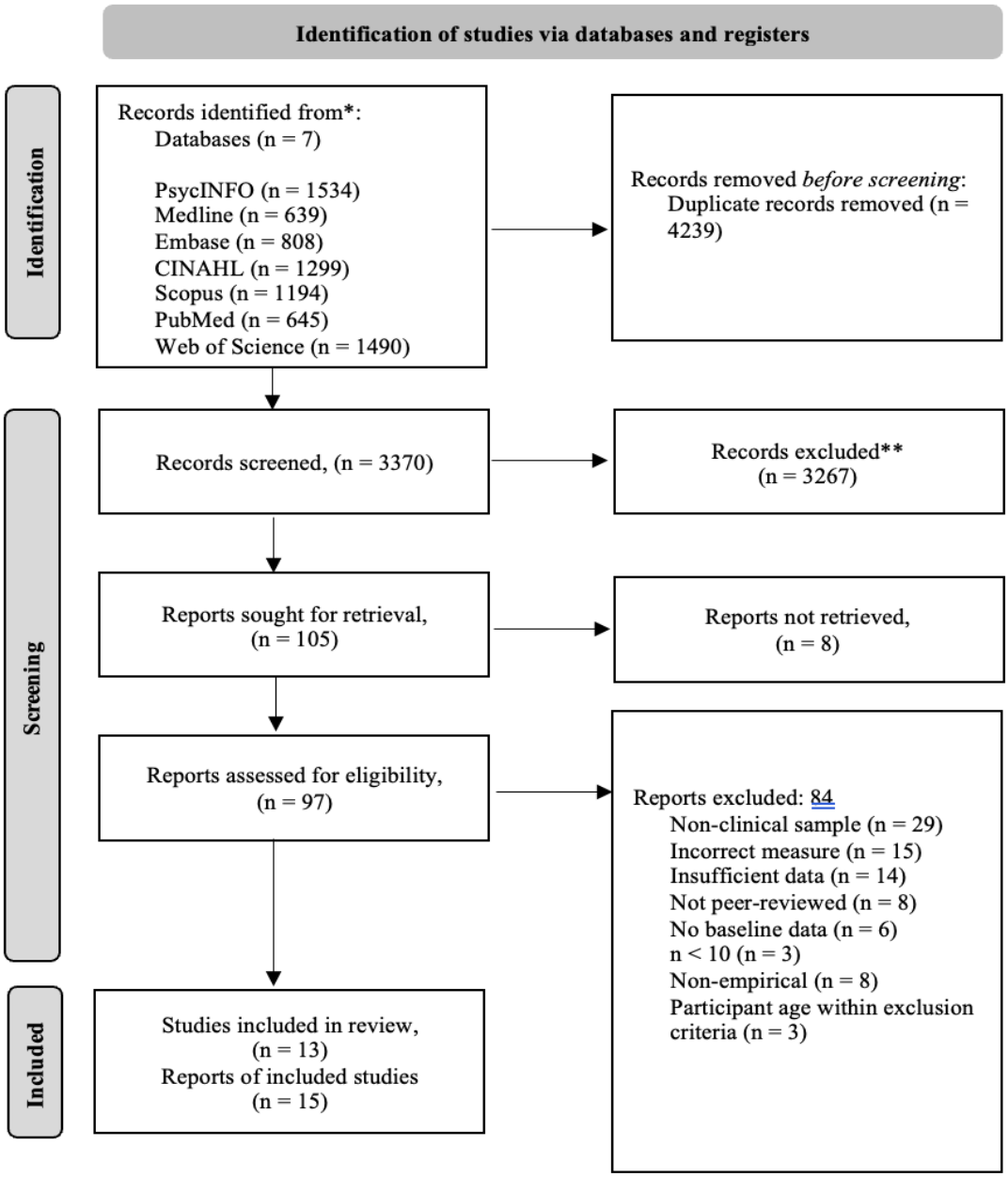
Literature search

The initial online search yielded 7608 results. Following de-duplication, the abstract and titles of 3369 studies were screened, and 104 studies were identified as being potentially suitable. Eight of these papers could not be retrieved as full text or were not available as an

English language version. 96 papers were therefore submitted for full paper screening. Reasons for excluding studies during full paper screening, can be found in Figure 1. Following full paper screening, 12 studies were identified as meeting criteria. Two additional studies (Griffiths, 2019; Sharp, 2016) were identified following manual searches of reference lists, and one study was included following requests for unpublished data from authors (Maxwell, 2018*).* Therefore, the final sample was 15 studies.

Figure 1

PRISMA Flow Diagram of Study Selection



Study Characteristics

Details of characteristics of selected studies can be found in Table 1. There were 2,645 participants in the fifteen included studies, from seven countries. Participants' mean

age was 26 and most were female (67%). Percentage of participants from a global majority background ranged from 0% - 38%.

Measures

Detailed information about the measurement methods used for both attachment and mentalizing by the included studies can be found in Appendix B. As a range of measures were used to capture attachment - varying in both their delivery and conceptualisation of attachment - this information has been summarised briefly for the reader in table 1.
Seven studies used self-report measures of attachment, with eight using an interview-based assessment of either the Child Attachment Interview (CAI; $k = 3$) or Adult Attachment Interview (AAI, $k = 5$).

To measure mentalizing capacity, five of the included studies used the Reflective Functioning Scale (RFS; Fonagy et al., 1998). One study used the The Movie for the Assessment of Social Cognition (MASC; Dziobek et al., 2006): a computerised test in which participants watch a video and respond to multiple choice questions. Seven of studies used the reflective functioning questionnaire adapted for youth (RFQ-Y; Sharp et al., 2009), one study used the Reflective Functioning Questionnaire (RFQ; Fonagy et al., 2016), and one study used the Mentalization Questionnaire (MZQ; Hausberg et al., 2012).

Table 1

Summary of Attachment Measures Used in Included Studies

Measure and author	Type	Measurement scales and/or dimensions/classifications	Focus of measure	Target	# of studies
Adult Attachment Interview (AAI; George, Kaplan, & Main 1985).	Interview-based	Experience (e.g. loving/ unloving); states of mind regarding parents (e.g. idealising); state of mind with respect to attachment (e.g. coherence)	Adult attachment status	Adults	5
Child Attachment Interview (CAI; Target et al., 2003).	Interview-based	Emotional openness, balance of positive and negative reference to attachment figures, use of examples, preoccupied anger, idealization, dismissal, resolution of conflicts, and overall coherence.	Child-caregiver relationships	Youth	3
The Experience of Close Relationships Scale-Revised (ECR-R; Fraley et al., 2000).	Self-report	Avoidance Anxiety	Adult romantic relationship	Adult	1
The ECR-Short form (ECR-SF; Wei et al., 2007)	Self-report	Avoidance Anxiety	Adult romantic relationship	Adult	1
ECR-Revised Child Version (Brenning et al., 2011)	Self-report	Avoidance Anxiety	Child-caregiver relationship	Youth	1
The Inventory of Parent and Peer Attachment-Revised (IPPA-R; Gullone & Robinson, 2005).	Self-report	Communication Trust Alienation	Parent and peer relationships	Youth	3
The Attachment Style Questionnaire (ASQ; Feeney et al., 1994).	Self-report	Relationships as Secondary and Discomfort with closeness (attachment avoidance) Need for Approval and Preoccupation with Relationships (Attachment anxiety) Confidence (Attachment security)	Adult attachment status	Adult	1

Table 2.
Study Characteristics

Author (date)	#	N	Mean age (SD)	Gender (% female)	Ethnicity (% global majority	Setting	Primary mental health need	Location of recruitment site	Attachment measure	Mentalizing measure	Attachment style reported
Levy (2006)	1	90	31	93.30%	38%	Community clinical and outpatient	BPD diagnosis	United States (New York City)	AAI	RFS	Secure
Talia (2019)	2	160	32.4 (20)	72.50%	9.60%	Outpatient	Various mental disorders	Denmark, United States (New York), Italy	AAI	RFS	Secure
Lind (2020)	3	70	15.37, (1.37)	80%	20%	Inpatient psychiatric hospital	Severe behavioural and emotional disorder	United States	CAI	RFQY	Secure
Kuipers (2015)	4	51	23.6 (6.7)	98.04%	1.96%	Outpatient and day clinic	Eating disorder	Netherlands	AAI	RFS	Secure
Sharp (2016)	5	259	15.42 (1.43)	63.10%	8.20%	Tertiary care inpatient treatment facility	Various psychiatric disorders including mood disorder	Data not available	CAI	MASC	Secure
Compare (2018)	6	118	51 (5.12)	51.69%	0%	Outpatient hospital clinical sample	Binge Eating Disorder	Italy	AAI	RFS	Secure
Maxwell (2018)	7	102	44.32 (11.79)	100%	10.80%	Outpatient and community-based clinic	Binge Eating Disorder	Canada	AAI	RFS	Secure
Jewell (2023)	8	173	14.69 (1.54)	88.40%	12.72%	Community-based clinic	Anorexia Nervosa or Other Specified Feeding or Eating Disorder	United Kingdom	ASQ	RFQY	Secure and insecure
Bo (2017)	9	109	16.1 (1.1)	59.60%	Data not available	Adolescent outpatient psychiatric clinic	Clinical group with BPD diagnosis, comparison group with psychiatric	Denmark	IPPA-R	RFQ-Y	Insecure

Table 2.
Study Characteristics cont.

Author (date)	#	N	Mean age (SD)	Gender (% female)	Ethnicity (% global majority	Setting	Primary mental health need	Location of recruitment site	Attachment measure	Mentalizing measure	Attachment style reported
Beck (2017)	10	110	15.78 (1.04)	100%	Data not available	4 psychiatric outpatient clinics	BPD	Denmark	IPPA-R	RFQ-Y	Insecure
Borelli (2019)	11	265	15.38 (1.43)	49.4%	12.60%	Adolescent inpatient facility	Emotional and behaviour symptoms	United States	CAI	RFQY	Insecure
Hayden (2019)	12	89	44.02 (9.79)	52.80%	Data not available	Two psychiatric rehabilitation inpatient centres	Various ‘ mental disorders	Austria	ECR-SF	MZQ	Insecure
Jørgensen (2021)	13	89	15.98 (1.06)	100%		Adolescent psychiatric outpatient clinic	participants had to meet a minimum of four DSM-5 BPD criteria	Denmark	IPPA-R	RFQ-Y	Insecure
Griffiths (2019)	14	48	15.5	79.17%	31.25% (are not White Scottish)	Adolescent inpatient and outpatient service	Self-harm	United Kingdom	ECR-RC	RFQ-Y	Insecure
Stagaki (2022)	15	907	30.7 (10.3)	69.20%	33.40%	Outpatient clinic and community setting	Anti-social personality disorder, depressive and anxiety disorders	United Kingdom	ECR-R	RFQ	Insecure

Risk of bias

See Table 3 for the bias ratings of the longitudinal studies and Table 4 for risk of bias ratings of cross-sectional studies. All studies met minimum quality. Two studies met the minimum cut-off score for adequate bias, this reflects a lack of methodology reporting, for example not providing information about diagnostic procedures (Lind, 2020) and the influence of confounding factors that were not identified nor explored (Beck, 2017).

Using the NOS tool, most of the papers were found to show risk of selection bias. This was due to a non-representative sample of the stated population. All but one paper were also found to show risk of performance bias. For one paper (Griffiths, 2019) this was due to an insufficient sample, for the remaining papers this bias reflects influence of confounding factors that was not explored

Table 3
Risk of Bias Assessment Using the Adapted NOS

Authors	Selection bias	Performance bias		Detection bias		Information bias		Total score (/21)
	NOS 1	NOS 2	NOS 3	NOS 4	NOS 5	NOS 6	NOS 7	
Levy (2006)	2	3	1	2	2	3	2	15
Maxwell (2018)	1	2	2	3	1	3	2	14
Jewell (2023)	1	2	1	2	3	2	2	13
Griffiths (2019)	3	1	2	3	2	2	2	15
Talia (2019)	2	2	2	3	3	2	2	16
Jorgensen (2021)	1	2	1	3	2	2	2	13
Compare (2018)	1	2	1	2	2	2	2	12

Note. NOS Scale: 3 = low risk of bias, 0 = high risk of bias). NOS 1 = Is the source population appropriate and representative of the population of interest?; NOS 2 = Is the sample size adequate and is there sufficient power to detect a meaningful difference in the outcome of interest?; NOS 3 = Did the study identify and adjust for any variables or confounders that may influence the outcome?; NOS 4 = Did the study use appropriate statistical analysis methods relative to the outcome of interest?; NOS 5 = Is there little missing data and did the study handle it accordingly?; NOS 6 = Is the methodology of the outcome measurement explicitly stated and is it appropriate?; NOS 7 = Is there an objective assessment of the outcome of interest?

Table 4
Risk of Bias Assessment Using the JBI

Authors	Selection bias		Performance bias		Detection bias	Information bias		Overall (/7)
	JBI 1	JBI 2	JBI 3	JBI 4	JBI 5	JBI 6	JBI7	
Bo (2017)	1	1	1	1	1	1	1	7
Beck (2017)	1	1	0	0	1	1	1	5
Borelli (2019)	1	1	1	1	1	1	1	7
Hayden (2019)	1	1	1	1	1	1	1	7

Lind (2020)	1	0	1	1	1	1	0	5
Kuipers (2015)	0	1	1	1	1	1	1	6
Stagaki (2022)	1	1	1	1	1	1	1	7
Sharp (2016)	1	0	1	1	1	1	1	6

Note. (JBI scale: 1= 'Yes', 0 = 'No'/'Unclear'.) JBI 1 =Were the criteria for inclusion in the sample clearly defined?; JBI 2 = Were the study subjects and the setting described in detail?; JBI 3 = Were confounding factors identified?; JBI 4 = Were strategies to deal with confounding factors stated?; JBI 5 = Was appropriate statistical analysis used?; JBI 6 = Were the outcomes measured in a valid and reliable way?; JBI 7 = Were objective, standard criteria used for measurement of the condition?

Moderator analysis

To assess for the influence of potential moderator variables, separate analyses were run for each categorical variable (Wang & Ware, 2013), and moderator analyses were included for continuous variables. As planned, age and measurement type were explored as moderator variables. It was unfortunately not possible to explore diagnosis as a moderator due to data not being available. Sample setting was explored as a moderator where possible, to understand the unexplained variance, indicated by high heterogeneity.

Moderator analyses are reportedly only relevant when subgroups each comprise of three studies or more (Dries et al., 2009), therefore subgroups consisting of less than three studies were not included in the moderator analyses. In cases where there were fewer than three subgroups, visual examination of 95% confidence intervals was used in place of a formal test, this method has previously been employed in meta-analyses (Dries et al., 2009; Bakermans-Kranenburg et al., 2003). The overlapping of confidence intervals indicates that there may be a similarity between the effects of the subgroups, while non-overlapping confidence intervals suggests that the effects are likely to be different (Goldstein & Healy,

1995). In general, as there a limited number of studies, the moderator analyses must be interpreted with caution.

Secure attachment and mentalizing

Eight studies, with a total of 1023 participants, reported data comparing secure attachment and mentalizing within a clinical group. A significant medium correlation was found between secure attachment styles and higher mentalizing abilities (k=8, r=0.31, [95% CI=0.19, 0.42], z=5.93, p=<.001. Individual study correlations are outlined in Table 5, with the forest plot displayed in Figure 2. Notably, the analysis displayed substantial heterogeneity for samples in those studies reporting secure attachment styles (I^2 = 63.54%), indicating statistical inconsistency in effect sizes across studies (Higgins et al., 2003).

Table 5

Meta-Analysis of Secure Attachment and Mentalizing

#	Paper	Correlation	CI Lower limit	CI Upper limit	Weight
1	Levy (2006)	0.48	0.30	0.63	8.71%
2	Talia (2019)	0.46	0.33	0.57	15.72%
3	Lind (2020)	0.16	-0.08	0.38	6.71%
4	Kuipers (2016)	0.43	0.17	0.64	4.80%
5	Sharp (2016)	0.21	0.09	0.32	25.63%
6	Compare (2018)	0.35	0.18	0.50	11.51%
7	Maxwell (2018)	0.23	0.03	0.41	9.91%
8	Jewell (2023)	0.16	0.01	0.30	17.02%

Moderator analyses are presented below to explore whether variables could account for the unexplained variance, given the high heterogeneity (Borenstein et al., 2011; O'Dea et al., 2021).

Age

For secure attachment and mentalizing, age did not have a statistically significant moderation effect $F(1, 7) = 1.49$, $\beta = 0.45$, CI = 0.00, -0.01 $p = .213$.

Sample setting

For the association between secure attachment and mentalizing, only two studies in the dataset used inpatient samples, the contrast between inpatient and outpatient settings was therefore not tested. The 95% CIs around the point estimate for inpatient (CI [-0.11, 0.46]) and outpatient (CI [0.35, 0.20]) overlap, suggesting that the studies based in inpatient settings have comparable associations, between mentalizing and secure attachment, to those that were based in outpatient settings. A forest plot can be found in Appendix C (Fig. C1).

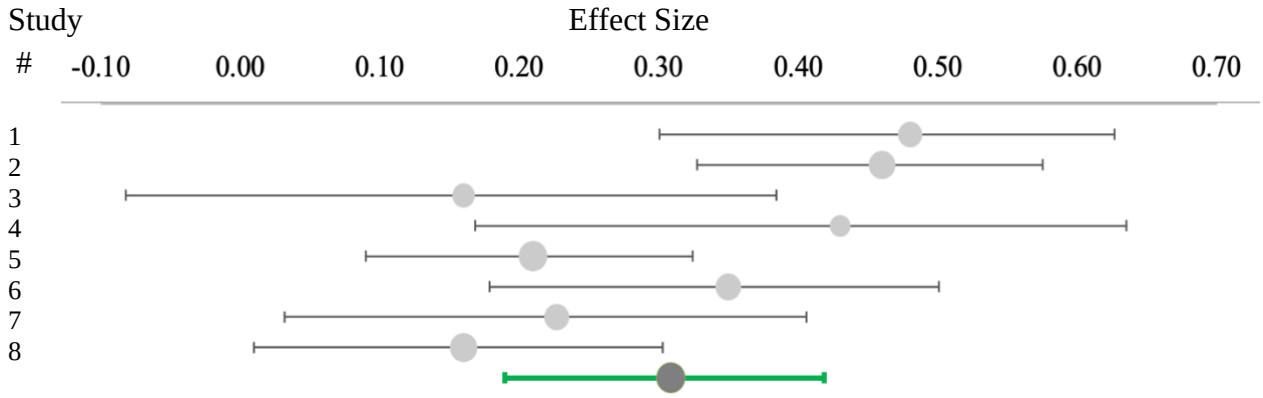
Measurement type

Attachment measurement method was not explored due to an insufficient number of studies per group to conduct further analysis. Using subgroup analysis, the method used to measure mentalizing ability was explored as a moderator variable of the relationship between secure attachment and mentalizing. Studies were separated into two groups. Due to limited number of studies, those that used the MASC and the RFQ-Y were grouped under 'other instruments', and compared to studies that used an interview-based method, specifically the RFS. The significant moderating effect of mentalizing assessment method on the relationship between secure attachment and mentalizing capacity was established (Q = 19.10, $p < .05$). A forest plot for this analysis can be found in Appendix C (Fig. C2). The moderation analysis indicated that the correlation between secure attachment and mentalizing capacity was more pronounced in studies that used the RFS as a mentalizing measure (r = 0.39, CI [0.26, 0.51), compared to those studies using other instruments ($r = 0.19$, CI [0.19, 0.11). The RFS sub-

group showed moderate heterogeneity (I^2 = 31.12%), while the questionnaire-based method showed none (I^2 = 0%).

Figure 2

Forest Plot of Studies Reporting the Overall Effect Sizes of the Association Between Mentalizing Ability and Secure Attachment.



Note. Effect sizes and confidence intervals are shown. Predictive interval (green line) is also displayed for overall effect size.

Insecure attachment and mentalizing

The findings for the primary analysis exploring insecure attachment and mentalizing ability are first presented here along with moderator analyses, then the findings for the secondary analyses exploring the sub-groups of anxious-insecure and avoidant-insecure with mentalizing ability will be presented.

With regards to the relationship between insecure attachment and mentalizing abilities, the analyses were based on effect sizes from eight studies with a total of 1759 participants. A small, non-significant correlation was found between insecure attachment styles and higher mentalizing abilities (k = 8, r = -0.12, CI = [-0.38, 0.16], z = -1.00, p = 0.316). Individual study correlations are outlined in Table 6 and the forest plot is displayed in

Figure 3. This analysis displayed considerable heterogeneity for samples in those studies reporting insecure attachment styles (I^2 =92.27%), indicating significant statistical inconsistency in effect across studies. Given the substantial heterogeneity found in this analysis, moderator analyses are presented below.

Age

For insecure attachment and mentalizing, age did not have a statistically significant moderation effect $F(1, 7) = 1.95$, $\beta = -0.50$, CI = [-0.04, 0.01], $p = .09$.

Sample setting

For the association between insecure attachment and mentalizing, only two studies in the dataset used samples from an inpatient setting - one paper (Griffiths, 2019) was not included as the sample included both inpatient and outpatient settings - the contrast between inpatient and outpatient settings was therefore not tested. However, visual inspection of the 95% CIs around the point estimate for inpatient (CI [-0.24, -0.99]) and outpatient (CI [-0.12, -0.54]) overlap. This suggested that the studies based in inpatient settings had comparable associations between mentalizing and insecure attachment to those that were based in outpatient settings. A forest plot can be found in Appendix C (Fig. C3).

Measurement type for mentalizing capacity

Measurement type for mentalizing was not explored as a moderator between insecure attachment and mentalizing, as all of the studies used a self-report method.

Attachment measurement method was not explored as a moderator due to an insufficient number of studies per group to conduct further analysis.

Table 6

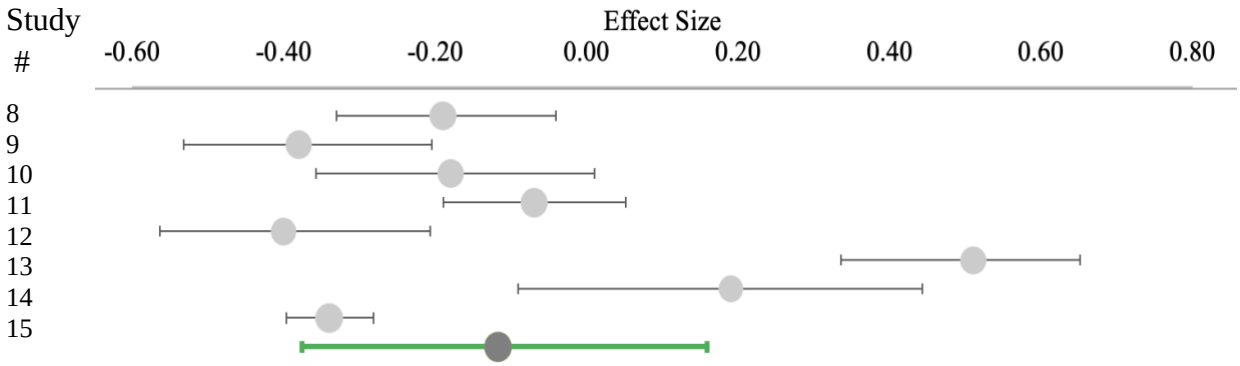
Meta-Analysis of Insecure Attachment and Mentalizing

#	Paper	Correlation	CI Lower limit	CI Upper limit	Weight

8	Jewell (2023)	-0.19	-0.33	-0.04	12.98%
9	Bo (2017)	-0.38	-0.53	-0.20	12.39%
10	Beck (2017)	-0.18	-0.36	0.01	12.40%
11	Borelli (2019)	-0.07	-0.19	0.05	13.36%
12	Hayden (2019)	-0.40	-0.57	-0.21	12.04%
13	Jorgensen (2021)	0.51	0.33	0.65	12.04%
14	Grifftiths (2019)	0.19	-0.09	0.44	10.90%
15	Stagaki (2022)	-0.34	-0.40	-0.28	13.88%

Figure 3

Forest Plot of Studies Reporting the Overall Effect Sizes of the Association Between Mentalizing Ability and Insecure Attachment



Note. Effect size and confidence intervals are shown. Predictive interval (green line) is also displayed for overall effect size.

Insecure attachment style sub-group analysis

Anxious attachment and mentalizing. Non-significant associations were found between papers reporting anxious-insecure attachment and higher mentalizing abilities (k = 4, r = -0.27, 95% CI = -0.64 – 0.21, z = -1.80, p = 0.072). This analysis also displayed substantial heterogeneity for samples in those studies reporting insecure attachment styles (I^2 = 89.20%).

Avoidant attachment and mentalizing. Non-significant associations were found between studies reporting avoidant-secure attachment styles and higher mentalizing abilities (k = 4, r = -0.22, 95% CI = -0.56 – 0.18, z = -1.75, p = 0.081). This analysis displayed substantial heterogeneity for samples in those studies reporting insecure attachment styles (I^2 = 83.33%).

Sensitivity analysis

The use of tests such as funnel plots and Eggar's regression test in the presence of high heterogeneity is not meaningful and can lead to false-positive claims of publication bias (Ioannidis & Trikalinos, 2007; Nakagawa et al., 2022). Due to substantial levels of heterogeneity across the analyses, it was not appropriate to test for publication bias. The funnel plots were however visually inspected as part of a sensitivity analysis.

A sensitivity analysis on the association between secure attachment and mentalizing showed that the exclusion of any individual sample resulted in minor fluctuations in effect size fluctuating (0.28 – 0.33), providing some evidence of the robustness of this finding. Notably, the exclusion of Sharp et al.'s effect size, which had been inverted for the purpose of this meta-analysis, did not have a significant influence on effect size (r = 0.33, p< .001) or heterogeneity (I^2 = 63.14%).

For the association between insecure attachment and mentalizing, visual inspection of the funnel plot identified Jorgensen as a potential outlier. Sensitivity analysis was run by excluding this study, this had a notable impact on the overall effect size between insecure attachment and mentalizing (r = -0.21, *p* = .004, [95% CI = -0.38, -0.03]) as well as a slight reduction in heterogeneity ($I^2 \geq$ 82.04%). Exclusion of other individual studies resulted in small fluctuations in effect size of -0.07 (Hayden) to -0.16 (Griffiths), and no notable change in heterogeneity.

Discussion

This meta-analysis of 15 studies summarizes evidence examining the relationship between attachment styles and mentalizing abilities across clinical diagnoses. A statistically significant association was found between secure attachment and mentalizing abilities in clinical populations. Statistical evidence was not found for the association between insecure attachment and mentalizing ability. Substantial heterogeneity was revealed between studies, a moderator analysis revealed the significant influence of the type of mentalizing measure used on the relationship between secure attachment and mentalizing. Potential moderating factors such as age and sample setting were also examined, however no significant moderating effect was found.

The finding of a positive association between higher security of attachment and mentalizing abilities, but no significant findings between insecurity in attachment and mentalizing seems surprising in a clinical sample. Individuals experiencing psychological distress are frequently found to show reduced mentalizing capacity and an insecure attachment style, we therefore might expect this association to be stronger. This may be due to methodological issues which will be explored in this discussion. It may also reflect a limitation in the methodology of this review, for instance in being unable to include a degree of psychological difficulty - this is explored further in the limitation section.

Insecure attachment and mentalizing

A meta-analysis of eight studies did not find evidence of an association between insecure attachment and mentalizing abilities in clinical populations. This finding does not align with the existing literature, which reports that in clinical samples individuals with insecure attachment styles tend to also exhibit a more fragile capacity for mentalizing (Luyten et al., 2012; Cooper et al., 2021). This has been outlined from a neurobiological perspective (Feldman, 2017) and is also consistent with evidenced from non-clinical studies

(Santoro et al., 2024). Several factors may account for the weak association observed, including the small number of papers included and the substantial heterogeneity - this is explored below. Furthermore, statistically significant evidence was not found for an association between mentalizing ability and attachment-avoidance nor attachment-anxiety. It is noted that the negative association between attachment-anxiety and higher mentalizing abilities, was slightly stronger than that for avoidant attachment, which does align with existing literature (Santoro et al., 2024; Molnár & Szabó, 2024). However, this difference is interpreted very cautiously, with awareness of a Type I error.

It was not possible to statistically identify factors that could account for the unexplained variance between studies, therefore this will be further explored by drawing on relevant theory. Considering the methodology of the included papers reporting on a relationship between insecure attachment styles and mentalizing, a range of attachment measures were identified, which varied both in their delivery—self-report versus interview-based—and in their conceptualisation of attachment. This reflects wider discourse in the literature, which highlights related but separate approaches to operationalising adult attachment, carrying both clinical and research implications *(*Bartholomew & Moretti, 2002; Ravitz et al., 2010).

For instance, the ECR is a measure of romantic attachment, based on the two dimensions of avoidance and anxiety. The ASQ also measures these two dimensions but does not assess a specific attachment relationship and was not developed for adolescents (Wilson & Wilkinson, 2012), although it is used with this population in the included study. The CAI, meanwhile, is based on the attachment styles of the AAI, and thus this measure reflects the child's IWM of attachment based on caregiver relationships. Finally, the IPPA-R, although widely used, has been criticised for not measuring attachment according to specific constructs of attachment style (Jewell et al., 2019) and, rather than reflecting IWMs of attachment, it

provides a general assessment of current relationships (Wilson & Wilkinson, 2012; McElhaney et al., 2009). In this way, rather than evidencing the size of the association between insecure attachment and mentalizing, this review may highlight the current methodological inconsistencies, particularly in relation to understanding the insecure attachment style.

Secure attachment and mentalizing

A meta-analysis of a further eight studies revealed a significant positive association between secure attachment and higher levels of mentalizing abilities in a clinical population. Although empirical evidence that explicitly explores security of attachment and mentalizing in clinical samples tends to be sparser than that exploring insecure attachments, this finding is congruous with those existing studies (Condino et al., 2022; Fisher, 2011). In line with a developmental perspective, an individual's mentalizing capacity is understood to be sustained throughout adulthood, having been nurtured within the context of a secure attachment where primary caregivers accurately perceive the infant's mental states (Bo, 2017; Fonagy & Luyten, 2009). Individuals with a secure attachment style therefore tend to exhibit an ability to reflect on their own and others' mental states (Santoro et al., 2024). Finding evidence for this within a clinical sample may remind us that the capacity to mentalize is within the ability of individuals experiencing psychological difficulties, despite evidence tending to focus on the negative – rather than positive – associations of mentalizing within clinical samples (Fisher, 2011).

Considering these results within the context of substantial heterogeneity between studies, the selection of mentalizing measurement method used had a significant influence. The use of the RFS-AAI was associated with a stronger correlation between secure attachment and mentalizing ability, than the correlation found in studies that employed self-report methods to assess mentalizing. This may reflect a methodological issue previously

highlighted in the literature (Katznelson, 2014), where the RF scale was found to be both a strong predictor of categorical attachment security on the AAI and highly correlated with the coherence scale. This interpretation would amplify the cautionary warning made by Fonagy and Bateman (2016) regarding the in-built correlations between some measures of mentalizing and attachment, making it challenging to separate the relationship between the constructs of secure attachment and mentalizing from the methods used to measure them.

Considering the broader implications of the use of mentalizing measures, all studies examining insecure attachment and mentalizing utilised self-report questionnaires to measure mentalizing capacity, and a weak correlation was observed between the constructs. Empirical studies have demonstrated that mentalizing difficulties in insecurely attached individuals only occur in the presence of attachment-related stress during assessment, and not in neutral contexts (Nolte, 2013; Fizke et al., 2013; Taubner et al., 2011). Such findings align with theory related to instability within the dimensions of mentalizing. Where individuals with insecure attachment styles experience difficulty maintaining balanced mentalizing, and transition from a conscious and reflective mode of mentalizing to an automatic mode in times of stress—particularly attachment-related stress (Fonagy & Luyten, 2016; Nolte et al., 2013). Self-report questionnaires do not provoke the attachment system as the AAI does through probing questions about attachment experiences. Thus, these findings could be interpreted in the context of the growing literature which emphasises that the presence of attachment-related stress is necessary for mentalizing difficulties to manifest in insecurely attached individuals (Luyten et al., 2020; Fizke et al., 2013).

Limitations

This review is constrained by the limited availability of studies on the topic, which diminishes the power of the analysis. The review is also affected by substantial heterogeneity, likely arising from multiple sources, including the variety of tasks used to measure

attachment and mentalizing, specific sample characteristics such as the setting, and variance in the operationalisation of key constructs. Reducing heterogeneity by narrowing the focus of the review, for instance by focusing on a specific operationalisation of attachment security and its relationship with mentalizing, is a possibility. However, currently, there are insufficient papers to achieve this.

The fact that psychological difficulty could not be included as a moderator in this review is also a limitation. It would have been interesting to understand how the constructs of attachment and mentalizing interact with the level of severity of psychological difficulty - particularly so for the meta-analysis between mentalizing and insecure attachment, due to the close associations between psychopathology, disrupted attachment security and a breakdown of mentalizing ability. By not including the degree of psychological difficulty, the association between insecure attachment and mentalizing difficulties may have been stronger than identified here. However, perhaps reflective of the increasing interest in the transdiagnostic nature of mentalizing, the included papers reported samples with a wide range of mental health needs and diagnoses, resulting in insufficient papers to examine specific moderator categories of mental health needs or treatment types.

Finally, the exploration of attachment and mentalizing beyond childhood remains an under-researched area. Including adolescents within the same review as adults may raise conceptual and theoretical discrepancies. Adolescence is a period of significant cognitive, biological, and psychological change, as well as transitions in interpersonal relationships as interest in social relationships increases and individuation from caregivers occurs (Jewell et al., 2019). Meanwhile, adult attachment is understood to become more stable (Fraley & Dugan, 2021), and longitudinal studies find that mentalizing performance tends to improve with age (Desatnik et al., 2023). Thus, adulthood and adolescence potentially represent very

different groups. Although age was explored as a moderator, given the limited number of papers, it was not possible to further explore these potential subgroups.

Future research and implications

This review underscores the methodological inconsistencies which future research into the overlapping nature of mentalizing and attachment constructs should address. Specifically, the inconsistencies found in the operationalisation of insecure attachment reflect a need to clarify and organise the conceptualisation of attachment insecurity. In turn this would lead to better cohesion of the measurement tools and facilitate the appropriate selection of measurement method by researchers and clinicians. Researchers should also be wary of the implications of in-built correlations that exist between measurement methods of attachment and mentalizing, and the confounding influence that these methods are likely to hold.

Against the backdrop of literature that describes and evidences the link between insecure attachment and mentalizing, the lack of a statistical association found in this review has been understood in the context of findings that an individual with insecure attachment only experiences mentalizing difficulties in the presence of attachment-related stress. This highlights the importance of careful selection of methods when measuring mentalizing ability in an insecurely attached population. The use of the RFS may provide a more sensitive measure, though it is recognised that its' use is limited by both cost and time involved.

Finally, the studies in this review included a homogenous sample of predominantly white, female participants from Western countries. Striving for more representative samples should always be prioritised, especially considering the influence of cultural factors on mentalizing capacities recently highlighted in a review (Aival-Naveh et al., 2019), and the shift in research on attachment and mentalizing to take a wider socio-cultural perspective (Luyten et al., 2020). It is arguably a particularly important time to adapt sampling techniques

so that a more representative sample of the population can be achieved, and wider contextual and cultural factors influencing the association between attachment and mentalizing can be appropriately explored.

Conclusions

The current review aimed to provide a quantitative summary of the association between attachment and mentalizing. A meta-analysis of eight studies, selected through a systematic selection process, revealed a significant positive association between secure attachment and higher levels of mentalizing abilities in adults, consistent with existing literature. This result supports the notion that secure attachment may facilitate a greater capacity for mentalizing. Importantly this finding has occurred in clinical samples. This area of research tends to focus on the negative associations of mentalization and disruptions to attachment security when using a clinical sample. Although difficulties in mentalizing tend to be more prevalent in clinical samples, these findings highlight that strong mentalizing is within the ability of individuals experiencing psychological difficulty.

Conversely, a second meta-analysis with a further eight studies found no association between insecure attachment and mentalizing abilities in adults. Given the established association between these constructs within theoretical and empirical literature, coupled with high levels of heterogeneity, this finding underscores the need for further exploration. It highlights a requirement to refine the operationalisation of insecure adult attachment, suggesting that how we define and measure insecure attachment may significantly impact the findings.

Overall, considering the distinct theories underlying measurement types for attachment and mentalizing, the importance of employing a theoretically and empirically sound operationalisation of these constructs in continued research is emphasized. However, given the high variability in the findings, any conclusions drawn should be tentative, and the

generalisability of these findings remains limited. This calls for cautious interpretation and underscores the necessity for ongoing research to clarify these relationships.

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Part Two: Empirical Paper

Epistemic stance, mentalizing and adolescents' perception of the therapeutic alliance

Abstract

AIMS: This study employed a cross-sectional design to investigate whether epistemic stance and mentalizing ability influence adolescents' perceptions of the therapeutic alliance in psychological therapy. Additionally, it examined whether these perceptions vary according to differences in psychological difficulty.

METHOD: Adolescents (n=24) and their therapists completed a series of self-report questionnaires between session 3–5 of therapy. This study captured three perspectives of the therapeutic alliance: the adolescents' perspective, the therapists' perspective, and the adolescents' judgment of their therapists' perspective. Separate linear regression models were utilised to determine the extent to which variations in each of these alliance ratings could be attributed to epistemic trust, mentalizing, and psychological difficulty.

RESULTS: Due to a smaller-than-planned sample size, the study did not achieve statistical power. Consequently, findings were tentatively explored within the context of existing theory and empirical evidence. The results indicate that the interaction between epistemic trust and mentalizing was associated with adolescents' perceptions of the alliance, aligning with existing evidence. Furthermore, psychological difficulty appeared to play an important role in the relationship between epistemic trust and therapists' alliance scores.

CONCLUSION: A higher mentalizing capacity may be associated with higher alliance ratings, provided that epistemic trust has been established. The potential clinical implications of this key preliminary finding are outlined, as well as considerations for future research.

Introduction

Adolescents' experience of the therapeutic alliance

The therapeutic alliance has been established as a key mechanism of change in therapy (Baier et al., 2020). Research consistently shows that therapeutic outcomes are more accurately predicted by the patient's perception of the therapeutic alliance than by the therapist's (Horvath and Symonds, 1991; Horvath, 2000; Bachelor, 2013; van Benthem et al., 2020). This finding is consistent in adolescent samples (Gergov et al., 2021; Martin et al., 2000), underscoring the importance of establishing a strong therapeutic alliance with adolescents for successful treatment outcomes (Castonguay et al., 2006). To achieve this, a clearer understanding is needed of the mechanisms influencing an adolescent's experience of the alliance at the early stages of therapeutic work.

Pan-theoretical definitions of alliance usually converge around three elements: collaborative agreement between patient and therapist on both the goals and the tasks of treatment, and the development of a personal bond (Horvath & Symonds, 1991). Developmental features of adolescence create a unique context for entering therapy, which can influence the formation of these alliance elements (Karver et al., 2019). While establishing autonomy and independence are key tasks during adolescence, many young people begin therapy at the request of other adults (de Haan et al., 2013), such as caregivers or teachers, who may have different ideas about the therapy goals than the adolescent themselves (Karver et al., 2018). This situation may make an authentic bond harder to establish, as adolescents become sensitive to the power dynamics within the therapist-patient relationship (Gibson & Cartwright, 2013). Furthermore, research indicates that therapists and adolescents tend to perceive the alliance differently (van Benthem et al., 2020; Gergov et al., 2021; Ormhaug et al., 2015). However, the adolescent perspective on therapy can be hard to

capture, as adolescents are reportedly likely to express dissatisfaction through silence or disengagement (Stige et al., 2021).

Importantly, while the characteristics of adolescence do present challenges associated with engaging in therapy, this developmental period is also marked by significant plasticity and increased opportunity for growth and building resilience. Understanding the factors that influence the formation of therapeutic alliances is therefore particularly relevant for an adolescent population.

Epistemic stance and mentalizing

Fonagy and colleagues (2014; 2017) posit that epistemic trust (ET) is a key transtherapeutic factor underlying the client's engagement in the therapeutic relationship. Epistemic trust refers to an individual's capacity to consider information from another person as generalisable, trustworthy, and relevant to the self (Wilson & Sperber, 2012; Fonagy et al., 2015). While it would be time-consuming and risky to independently learn the correct use of a tool or culturally relevant customs, an individual who develops ET becomes open to receiving this information from reliable and knowledgeable sources. The capacity for ET therefore provides evolutionary advantages as it sustains an individual's capacity for salutogenesis and reinforces personal resilience (Luyten et al., 2020), by enabling a successful route to learn important cultural knowledge in an ever-changing social context (Csibra and Gergely, 2009; Bateman et al., 2018).

A challenge humans face in the process of communication and learning is that information sources, including customs, objects, and the minds of others, are often opaque; the information they contain is not immediately explicit. Here, the capacity to mentalize is understood to be an essential competence, allowing for the interpretation of others' behaviour as intentional mental states, including goals, attitudes, and beliefs (Bateman & Fonagy, 2016). Through mentalizing, individuals can understand the opaque minds of others and

discern the dependability and trustworthiness of the knowledge they hold (Fonagy & Campbell, 2017).

Importantly, humans are not born with the capacity for epistemic trust. Developmental research suggests that infants are likely born with an appropriate level of epistemic vigilance (Fonagy et al., 2017; Lee et al., 2016) - the natural capacity to identify and guard against irrelevant and inaccurate information (Sperber and Wilson, 1995). This adaptive position serves a self-protective function—it is crucial not to believe everything indiscriminately, and in some social contexts, recognising sources of information as deceitful or misinformed is a key adaptive social response (Campbell & Allison, 2022).

Fonagy and colleagues (2016, 2017b, 2021) have described that early attachment relationships act as key interpersonal strategies which communicate the most adaptive epistemic stance to navigate a particular environment (Luyten et al., 2020). In the context of an adverse social environment, insecure attachment styles communicate to the infant that maintaining epistemic vigilance and greater detachment from others is a necessary response. Meanwhile, secure attachment relationships, characterised by high levels of mentalizing from the caregiver, can provide a fertile environment for an infant to overcome epistemic vigilance. This then facilitates an openness in the infant to learn from their benign social world and assess relevant, trustworthy, and generalisable information (Corriveau et al., 2009). An epistemic stance is believed to remain interactive and may be further reinforced or disrupted by influences including peers, community members, and other sociocultural factors (Luyten et al., 2020).

Disruptions in ET have recently been conceptualised in two ways (Campbell et al., 2021). Epistemic mistrust (EM) refers to a tendency to appraise any source of information as unreliable or ill-intentioned and subsequently reject it. Conversely, epistemic credulity (EC)

describes a naivety and lack of vigilance, rendering the individual vulnerable to misinformation.

Epistemic stance, mentalizing, and psychological distress

While epistemic vigilance is an appropriate adaptive response to a challenging social context, it appears to limit the individual's capacity to benefit from social relationships, as it disrupts the pathway to learning from their environment and community (Fonagy et al., 2015). This can reinforce negative beliefs about the world and a tendency not to encode potentially useful feedback from social networks. Consequently, the individual does not engage in open reflection about their own actions or those of others. Additionally, the experience of insecure attachment relationships is associated with significant impairments in mentalizing capacities, it becomes difficult to access appropriate mentalizing when overwhelmed, particularly in the presence of attachment-related stress (McLaren et al., 2022).

If the individual experiences particularly severe or traumatic social interactions, their vigilance may evolve into an entrenched position of epistemic mistrust, with rigidly held negative appraisals of the world and others (Fonagy & Bateman, 2016; Campbell et al., 2021). This disruption to the development of ET and mentalizing is associated with psychological difficulties, particularly the development of borderline personality features (BPF) (Fonagy & Campbell, 2017). BPF typically include enduring patterns of rigidity, impulsivity, identity challenges and interpersonal instability (Bo, 2017). The processes underlying these features may reflect the individual exercising an appropriate state of epistemic mistrust (Orme, 2019). In this was BPF is understood in terms of a meaningful and adaptive response to challenging social environments including: early traumatic experiences, non-mentalizing professional systems, and insecure attachment relationships (Fonagy et al., 2017b; Bateman et al., 2018). This theory therefore also provides a reminder of the

sociocultural context and history that an individual who may be viewed by services as 'hard-to-reach', is navigating (Fonagy & Allison, 2015).

In adolescence, epistemic mistrust and hypervigilance have also been found to manifest as hyper-mentalizing (Fonagy et al., 2017b), which describe the individual using fast and automatic processes to make sense of social information (Bo et al., 2017; Luyten et al., 2020). Consequently, the individual may jump to conclusions about the mental states of others, and these conclusions are often both inaccurate and negatively biased (Barnow et al., 2009; Herpertz & Bertsch, 2015).

Epistemic stance and mentalizing in the therapeutic context

In a therapeutic context, establishing trust and relaxing epistemic vigilance are crucial components of the patient-therapist relationship. Mentalizing is posited as the key mechanism by which epistemic trust can be established between the patient and therapist (Fonagy & Allison, 2014). The three communications systems theory (Fonagy & Allison, 2014; Nolte et al., 2023) offers a conceptual framework to understand this interactive process.

Within System 1 the therapist mentalizes the patient's position, providing them with the experience of their subjectivity being worthy of engagement by someone who wants to see the world from their standpoint. Epistemic vigilance is relaxed, and social learning is primed, as the patient gains confidence that the therapist understands their subjective experience well enough to provide information that is relevant and helpful. This facilitates the collaborative formation of therapeutic goals and tasks (Jaffrani et al., 2020). In System 2 the patient shows increased interest in the therapist's mind and feelings; strengthening the patient's own mentalizing capacity: "How does this person see me as they do?". A virtuous cycle is developed within the therapeutic bond, as the patient's curiosity in mental states grows and epistemic openness is established (Nolte et al., 2023). Finally, in System 3, the patients' epistemic openness and experience of mentalizing within therapy, is generalised to

their wider social context. This frees the patient from rigidity and social isolation, to benefit from salutogenesis. An extended description of this framework, which explores therapeutic change more broadly, is beyond the remit of this paper which focusses on the therapist-patient dyad. However, the process outlined in these three systems posits the clinical importance of both epistemic trust and mentalizing in generating a helpful and effective alliance in which the patient feels understood.

Empirical evidence supports this understanding. For example, in a qualitative study of individuals with a diagnosis of BPD, sessions rated favourably by patients were those where epistemic trust had evolved through experiences of the therapist engaging with their subjective experience. In contrast, low-rated sessions indicated that the patient felt the therapist had not correctly understood their mental state (Folmo, 2019). Similarly, a single case explorative study by Fisher et al. (2023) revealed that as epistemic trust evolved in therapy, the patient's rating of the therapeutic alliance improved.

Building on these findings, Aisbitt (2020) conducted a quantitative pilot study to explore the related factors of epistemic stance, mentalizing, and perceptions of the therapeutic alliance for adolescents. Although this study was statistically underpowered, it identified preliminary evidence that higher levels epistemic trust were associated with a higher rating by adolescents of what they presumed their therapist thought of the alliance. Aisbitt posited that epistemic trust might play a moderating role in the relationship between mentalizing and the therapeutic alliance, where adolescents with a higher mentalizing capacity were more likely to rate a stronger alliance, but only if epistemic trust was established. Together these findings suggest that the experience of having one's subjectivity understood in the relatively safe context of therapy can help develop epistemic trust, leading to a positive perception of the therapeutic alliance

Conversely, when an individual has developed a self-protective stance of epistemic mistrust, establishing an alliance that feels meaningful and safe enough to relax their vigilance may be more challenging (Li et al., 2023). If the patient does not feel understood, the information transmitted by the therapist may not be perceived as relevant or generalisable to their wider social contexts, making it harder to achieve therapeutic goals or tasks (Fonagy, 2017; Fonagy & Luyten, 2018b). Indeed, the theory of epistemic trust may help to reframe unhelpful labels such as 'resistant to treatment', by contextualising why individuals with a diagnosis of BPD tend to experience relatively high rates of alliance ruptures and drop-out (Kongerslev et al., 2015; Folmo et al., 2021).

Campbell & Simmonds (2011) conducted qualitative interviews with therapists working with adolescents and shed light on the therapist's perspective of the influence of mentalizing and ET on the alliance. They noted that therapists described adolescents as having a specific 'radar' enabling them to detect whether the therapist is an honest and reputable source of information. This 'radar' is reminiscent of a stance of epistemic vigilance in adolescents. The therapists identified that seeing the world through the eyes of the child and being genuine in their attempts to mentalize, were critical factors that led to a trustful alliance. This indicates that therapists value mentalizing as a therapeutic skill and recognise the need to overcome a stance of vigilance. Currently, there is little research on epistemic trust theory exploring the therapist's perspective of the alliance, and indeed this perspective appears to be less predictive of therapeutic outcomes. However, understanding how (and if) a patient's epistemic stance and mentalizing influence the perception of the therapist may provide clearer insights into how these factors interact within the therapeutic dyad.

The current study

Given the evidence that the therapeutic alliance, particularly the client's perspective of the alliance, is crucial in predicting treatment outcomes, it is essential to understand the

factors influencing this perception. There is substantial theoretical groundwork suggesting that epistemic trust and mentalizing are key in establishing a strong therapeutic alliance (Li et al., 2023; Karver et al., 2018; Folmo, 2019). However, empirical evidence in this area remains limited.

In adolescent populations with BPF, establishing epistemic trust may be particularly important. These individuals are likely to enter therapy with an adaptive stance of epistemic mistrust or credulity, which is associated with barriers to forming beneficial therapeutic relationships.

This study aims to build on the existing literature and address whether epistemic trust and mentalizing relate to therapeutic alliance judgments in adolescents undergoing therapy. Additionally, the study aims to consider why the therapeutic alliance varies concerning differences in psychological difficulties, with a focus on BPF.

In light of evidence that therapist and adolescent perspectives hold different weights in treatment outcomes, adolescent patients and their therapists were both invited to provide their perspectives on the alliance within a dyad. The Scale to Assess Therapeutic Relationships (STAR) was used, with both a clinician-rating version (STAR-C) and a patient-rating version (STAR-P). Adolescents were also asked to rate the alliance from their therapist's perspective (using the STAR-C). This approach allowed for the influence of epistemic trust, mentalizing, and psychological difficulty to be understood and compared across these three perspectives.

Clinically, these findings may have implications for supporting the formation of alliances and reducing barriers to adolescent engagement (Li et al., 2022). Additionally, it is hoped that this study will provide further empirical evidence to understand epistemic trust theory.

With these aims in mind, the current study will test the following hypotheses:

1. Higher levels of adolescent ET and mentalizing, and lower levels of BPF, EM, and EC, will be associated with a higher rating of the therapeutic alliance from the adolescents' own perspective.
    a. ET will moderate the influence of mentalizing ability on the adolescent's own perspective of the therapeutic alliance.
2. Higher levels of adolescent ET and mentalizing, and lower levels of BPF, EM, and EC, will be associated with a higher rating of the alliance when adolescents take the perspective of their therapist.
    a. ET will moderate the influence of mentalizing on the presumed therapeutic alliance rating
3. Higher levels of adolescent ET and mentalizing, and lower levels of BPF, EM, and EC, will be associated with a higher rating of the therapist's own therapeutic alliance.
4. Higher levels of ET and mentalizing, and lower levels of BPF, EM, and EC, will be associated with higher convergence between the therapist's own rating of the alliance and the adolescents' alliance rating when they take their therapist's perspective.
5. Higher ET and mentalizing ability, and lower levels of BPF, EM, and EC, will be associated with higher convergence between the therapist's own rating of the alliance and the adolescents' own rating of the alliance.

Method

This study is conducted as part of a wider project, with contributions from two other UCL clinical psychology doctoral students forming the research team. Given that there is currently a limited empirical understanding of the construct of epistemic stance, it is important to note that this wider project also includes a qualitative exploration (Taplin, 2024)

of the potential role of epistemic stance in adolescent's relationships in their professional social network (Appendix A outlines in detail the unique contributions made as part of the wider project).

This research received favourable opinion from the North of Scotland (1) Research Ethics Committee (reference number 23/NS/0064).

Setting

Adolescents (n=24) and their therapists were recruited from three sites in England:

1. Child and Adolescent Substance Use Service in the Midlands (n=5)
2. NHS Children's Community Psychology Service (CCPS) in North London (n=7)
3. NHS Mental Health Support Team (MHST) in South London (n=12).

CASUS was an existing recruitment site for this research project. To extend the reach of recruitment, the core research team (three DClinPsy trainees) presented the project to the CCPS and the MHST, both of which joined the project as recruitment sites.

Participants

The participants for this project were adolescents in psychological therapy and their therapists. Participation by both was voluntary. The psychological needs and treatment of patients varied with the service context. Clinicians in the CCPS offer brief early intervention psychology support to children and young people (CYP), who are experiencing mild to moderate mental health difficulties. This usually involves up to 6 or 10 sessions, depending on the treatment pathway. Clinicians in the substance-use service typically provide long-term integrated psychological support to CYP experiencing drug and alcohol difficulties. The MHST typically offer brief CBT-based interventions of 6 – 8 sessions to CYP experiencing mild to moderate mental health difficulties, clinicians are usually based within the young person's school. Clinical psychologists in these services also provide therapies such as

EMDR or CBT. Therapists invited to participate included both qualified and training clinicians working with an adolescent.

Across all three recruitment sites, the research team provided information about the study to clinical teams. The therapists in those clinical teams were asked to share the study advertisement and researchers' contact details with patients. To address a limitation highlighted by Aisbitt (2020), which suggested a possible sampling bias due to therapists potentially referring only patients with whom they had a good alliance, the research team explicitly encouraged therapists to share information with all adolescents they were working with that met inclusion criteria (below) and provided rationale to this. Adolescents who heard about the study through word of mouth could also volunteer to participate.

Due to unforeseen circumstances regarding the ethics application, recruitment for this project started later than initially planned, active recruitment started in November 2023 and ended in May 2024.

Inclusion and Exclusion Criteria

The following inclusion and exclusion criteria were applied. Therapists received these criteria and were asked to only introduce the project to the adolescents they were working with who met them. Additionally, when researchers received contact details for an adolescent who had expressed interest in the project, they contacted the adolescent (and their parent/carer if the adolescent was under 16) to perform screening.

Inclusion Criteria for Adolescents

- Aged 12-18 years
- Currently undertaking a course of one-to-one psychological therapy of any modality
- Attended at least three therapy sessions
- Sufficient proficiency in English to consent and complete questionnaires

Exclusion Criteria for Adolescents

- Acute risk of suicidality
- Acute psychotic episode
- Severe neurological disorder
- Moderate to severe learning disability

This information was provided on the study advertisement and was also screened by the researchers when the therapist initially referred a participant.

Procedure

This study employed cross-sectional design. All adolescents and therapists were provided with an information sheet (see Appendix D) and completed signed informed consent (see Appendix E) for the research. Consent was also obtained from parents or caregivers of adolescents below the age of 16. For this study, adolescents completed a battery of self-report questionnaires after their third session of psychological treatment. The third session was selected as the cut-off point because evidence suggests that a therapeutic alliance is usually established by the third session in psychological treatments (Hilsenroth et al., 2004; Fernandez et al., 2016). Due to study practicalities, there was a small variation in the session number that adolescents completed questionnaires, this allowed us to ensure we had time to receive informed consent from all parties. All adolescent participants were compensated with a £15 voucher per questionnaire session.

The questionnaire session was completed without a time limit via Qualtrics. Researchers met with the adolescents via Zoom to support them with questions or technical issues and to provide a debriefing (a face-to-face meeting was offered where online sessions were not possible; however, this did not occur during the recruitment period). The researcher remained muted with their camera off while the adolescent completed the questionnaire battery. Following the completion of the adolescent questionnaire battery, the therapist questionnaire

battery was sent electronically via Qualtrics to the therapist, who completed the questionnaires independently.

Participating adolescent and therapist dyads were given unique participant ID codes that could be matched. Identifying information was anonymised at the point of data collection. Data was stored securely on a password-protected OneDrive database using participant ID codes. Once the study is completed, all research data will be stored within UCL and eventually destroyed in compliance with the Data Protection Act (2018).

Measures

Epistemic Trust, Mistrust and Credulity Questionnaire (ETMCQ; Campbell et al., 2021): The ETMCQ is a 15-item self-report measure of epistemic trust. Items are scored on a 7-point Likert scale, where 1="strongly disagree" and 7="strongly agree." This questionnaire comprises three subscales, each with 5 items: epistemic trust, mistrust, and credulity. The subscales are scored separately, and all three are included in the current analyses. Higher scores indicate higher levels of epistemic trust, mistrust, and credulity for each respective subscale. The ETMCQ has good psychometric properties (Liotti et al., 2023), including acceptable criterion-related validity and good reliability for the overall scale (α=.78; Campbell et al., 2021), as well as acceptable internal consistency for Trust (α=.81), Mistrust (α=.70), and Credulity (α=.75; Campbell et al., 2021). The ETMCQ, developed for use with adults aged 18 and older, has been found valid in samples of 12-19-year-olds (Liotti, 2023; Parolin et al., 2024).

Reflective Functioning Questionnaire Youth Version (RFQ-Y; Sharp et al., 2009): Mentalizing was measured with the RFQ-Y, a 46-item self-report measure adapted for use with adolescents from the RFQ (Fonagy et al., 2016). Items are rated on a 6-point scale from "strongly disagree" to "strongly agree". This measure is divided into two subscales with

distinct coding methods. Scale A uses a median scoring approach where extreme scores indicate poor RF, while Scale B uses a Likert scale where higher scores indicate better RF. As advised in the literature, a total score is produced by summing the subscales. A high score indicates better RF capacity, the maximum total score is 12. The RFQ-Y has demonstrated good construct validity in a community adolescent sample (Duval et al., 2018) and adequate internal reliability (α=.71), as well as construct, criterion, and convergent validity in inpatient samples (Ha et al., 2013).

Scale to Assess Therapeutic Relationship (STAR; McGuire-Snieckus et al., 2007): The STAR was developed to assess relationships between multi-disciplinary therapists and patients with severe mental difficulties in community settings. This scale has two versions, each with 12 items: 1) patient report, STAR-P, and 2) therapist report, STAR-C. Both versions comprise three subscales: positive collaboration, positive therapist input, and either non-supportive clinician input (STAR-P) or emotional difficulties (STAR-C). Good test-retest reliability and internal consistency have been demonstrated for the overall score of both the STAR-P (r=.76; α=.83) and the STAR-C (r=.68; α=.87; Loos et al., 2012; McGuire-Snieckus et al., 2007).

In this study, adolescents reported on the therapeutic alliance from their own perspective ("adolescent own") using the STAR-P, and also took the perspective of their therapist to rate the alliance ("adolescent perspective-taking") using the STAR-C. The therapist also completed the STAR-C from their own perspective ("therapist own"). Using these three interpretations of the therapeutic alliance allows direct assessment of the adolescent's ability to mentalize their therapist and compare this to their own view of the relationship and the therapists actual view of the alliance.

Borderline Personality Features Scale for Children (BPFS-C; Crick et al., 2005): The BPFS-C was used to assess traits of borderline personality. This 24-item self-report

questionnaire was adapted from the Personality Assessment Inventory (PAI; Morey, 1991) for use with children aged 9 and older. The questionnaire comprises four subscales: affective instability, self-harm, negative relationships, and identity problems. Responses are scored on a 5-point Likert scale, ranging from 0 (Not at all true) to 4 (Always true). A higher total score indicates more BPF. The scale has been found to have high criterion validity and internal consistency in a clinical sample of 12-18-year-olds (Chang et al., 2011).

Revised Child Anxiety and Depression Scale (RCADS; Chorpita et al., 2000): The RCADS was used to measure psychological clinical symptoms in 8–18-year-olds. This 47-item questionnaire assesses symptoms of anxiety and low mood. Items are rated on a scale from 0-3, corresponding to "never," "sometimes," "often," and "always," with higher scores indicating higher levels of psychological difficulty. The RCADS produces a total score that reflects the severity of psychological symptoms. Studies have found the RCADS to have favourable convergent, divergent, and factorial validity in both clinical (Chorpita et al., 2005) and community samples (Donnelly et al., 2019).

Power calculation

An a priori power analysis was conducted using G*Power version 3.1.9.7 (Faul et al., 2007) to determine the minimum sample size required to test the study hypotheses. There are no existing studies which include a measure of epistemic trust in a multiple regression analysis with an adolescent population. Therefore, the effect size for this power analysis is estimated based on previous studies that use a similar analysis approach – using multivariate regression to explore therapeutic alliance is an adolescent clinical population. For example, Cavelti et al. (2016) included six predictor variables in a multivariate regression model, with the STAR-P as a dependent variable ($R2 = 0.31$). Additionally, Levin (2011), included four predictor

variables including three measures of therapeutic alliance and the RCADS, and found R2 = 0.27. A conservative position is taken for this paper, and an effect size of R2 = 0.27 is chosen for a multiple regression analysis. Note that this effect size is converted from R2, to f2 = 0.37 in G*Power (Faul et al., 2009). With a significance criterion of α=.05 and to achieve 80% power, the minimum sample size needed is N=41 for a multiple regression with five predictor variables, to achieve an R2 effect size of 0.27.

It should be noted that as this effect size is an estimate based on related but not identical studies, the actual effect size in this study may differ. A statistician was consulted in performing this power analysis.

Analysis plan

Data was collected on all patients and therapists for relevant variables, as well as the following patient demographic information: session number, ethnicity, age, and gender. In the first step of the analysis, Pearson correlation coefficients were computed between all variables to explore associations and to check the relationships between test variables. For the second step, a series of linear regression analyses were conducted to test hypotheses one to five. The following theoretically relevant independent variables were entered into both univariable and multiple regression models (Feng et al., 2016): epistemic trust, epistemic mistrust, epistemic credulity, mentalizing ability, and borderline personality features.

To address **hypothesis one**, the dependent variable was the adolescent's own rating of the therapeutic alliance. For **hypothesis two**, the dependent variable was the adolescent's perspective-taking rating (using the STAR-C). An interaction term was included in these two regression models to perform a moderator analysis with epistemic trust as a continuous moderator variable, mentalizing as the independent variable, and adolescents' own rating of the therapeutic alliance as the outcome variable.

For **hypothesis three**, the dependent variable was the therapist's own rating of the therapeutic alliance.

To address **hypotheses four and five**, difference variables were computed. These difference variables were then used as dependent variables in their respective multiple regressions. Independent variables for both analyses were epistemic trust, mistrust, credulity, mentalizing ability, and borderline personality features.

Assumptions of multiple regression were assessed for each model (see Appendix F for data output related to all assumptions that are assessed by visual inspection as described in the results). Linearity and homoscedasticity were assessed by visual inspection of scatterplots, and the absence of multicollinearity was confirmed with acceptable Variance Inflation Factor (VIF; Allison, 1999) scores below 5 (James et al., 2013). Independence of residuals was assessed with an acceptable Durbin-Watson statistic of 1.5-2.5 (Turner, 2019), and normality of residuals was evaluated by inspecting histograms and Q-Q plots.

The following variables have been significantly associated with mentalizing and/or epistemic trust: gender (Poznyak et al., 2019; Locati et al., 2023), ethnicity (Aival-Naveh et al., 2019), age (Desatnik et al., 2023), and general mental health difficulties (Parolin et al., 2024). Therefore, these variables were included as covariates in the multiple regression analyses.

All statistical analyses were performed using IBM SPSS Statistics Version 29.0.2.0 (IBM Corp, Armonk, NY) and JASP Version 0.17.2 (JASP Team, 2024).

Results

Data Preparation

Due to recruitment difficulties, this study has a smaller than anticipated sample size, which will be further discussed in the limitations section. This study was originally designed to build on the findings of a pilot study; therefore, the analysis has been completed as

planned, with results interpreted cautiously in the context of the pilot study and existing literature. A high possibility of Type I and Type II errors is acknowledged.

Data Screening

Outliers were explored using both single-construct and multiple-construct techniques (Aguinis et al., 2013). Inspection of box-plot graphs initially revealed two potential outliers: one in the bottom quartile of the RFQ-Y distribution and one in the bottom quartile of the distribution for the therapist's own perspective of the alliance (STAR-C). Both outliers were within 1.5 standard deviations from the variable mean. Additionally, studentized deleted residuals for all data were within ±3 standard deviations, leverage values were below 0.75 (Aguinis et al., 2013), and there were no Cook's Distance values above 1 (Cook & Weisberg, 1982). It was concluded that there were no error outliers or influential outliers within the data, and no changes were made.

Missing data was present in one variable: the therapist's own rating of the alliance, due to item non-response. Two therapists did not complete the STAR-C. Total missing data was 8.33% across cases, and listwise deletion was applied to these cases. Data from adolescents was complete.

Descriptive Statistics

Descriptive statistics and Pearson's correlations of the included variables, as well as age, session number, and anxiety and depression symptoms (RCADS score), are shown in Table 1. Further information on the demographics of the included adolescent sample can be found in Table 2. The total sample included 24 adolescents aged between 12 and 18 (mean age=15.67). Therapist questionnaires were completed for 22 of the participating adolescents.

To provide context, self-reported levels of BPF of adolescents in this study are relatively low compared to clinical samples in other papers. The mean score is closer to scores previously reported in community samples (M=57.62, SD=14.33; Sharp et al., 2015,

M=64.23, *SD*=14.21; Sharp et al., 2014), than clinical samples - for example in samples of individuals with a diagnosis of BPD (M=80.56, SD=14.21; Sharp et al., 2014) or complex clinical presentations (M=85.2, SD=15; Chen et al., 2023).

Table 1

Descriptive Statistics and Correlation Matrix

	Descriptive		Correlations									
	M (SD)	Range	2	3	4	5	6	7	8	9	10	11
1. Trust	4.90 (.82)	3-6	0.28	0.19	0.25	-0.09	-0.07	0.00	.461*	0.10	-0.28	0.28
2. Mistrust	4.97 (.65)	4-6	-	.612**	-0.25	0.40	-0.20	-0.16	0.11	0.19	-0.05	-0.04
3. Credulity	3.99 (1.15)	1-7		-	-0.35	.534**	0.01	0.01	-0.14	.588**	-0.16	-0.25
4. Mentalizing	8.76 (.99)	6-10			-	-.819**	-0.25	0.20	0.38	-.544**	-0.05	0.36
5. BPFS-C	53.96 (14.18)	31-81				-	0.25	-0.07	-0.31	.660**	-0.04	-0.30
6. STAR-P (adolescent)	39.50 (5.79)	26-47					-	.762**	-0.33	0.20	0.19	-0.02
7. STAR-C (adolescent)	39.88 (7.20)	26-48						-	-0.05	-0.01	0.01	0.19
8. STAR-C (clinician)	40.64 (3.62)	31-46							-	-0.35	-0.12	.448*
9. RCADS	70.29 (19.60)	23-104								-	-0.23	-.515**
10. Session n	3.63 (.82)	3-5									-	-0.10
11. Age	15.67 (1.95)	12-18										-

Note. Missing data: STAR-C (clinician report) n = 2 (8.33%). Table shows observed min-max ranges. Theoretical range for each measure can be found in method section. N=24 for all correlations, except those including STAR-C (clinician) where N=22.
The mean (M) and standard deviation (SD) for each variable are displayed.
*. Correlation is significant at the 0.05 level (2-tailed).
**. Correlation is significant at the 0.01 level (2-tailed).

Additionally, the SD for mentalizing ability is low and the mean scores approach the upper limit of the scale. This indicates that scores are clustering around the mean and there may be ceiling effects present. The sensitivity of the RFQ-Y46 is explored in the discussion, and the assumptions of each analysis are carefully assessed.

In line with the current literature, mentalizing and features of BPD exhibited a strong negative correlation ($r=-.82$, $p < .001$), indicating that adolescents with lower rates of BPF also had higher mentalizing ability abilities compared to those with higher BPF. Furthermore, RF ability had a moderate negative correlation with general mental health difficulties, as captured by the RCADS score ($r=-.54$, $p < .001$).

Table 2

Patient Demographics

Demographics		N	%
Gender	Female	17	70.83
	Male	5	20.84
	Prefers to self-identify (e.g. non-binary, gender fluid)	2	8.33
Ethnicity	White British/Welsh/Scottish/Northern Irish	12	50
	Black African/Caribbean/Black British	5	20
	Asian/Asian British	4	16.67
	Mixed/Multiple ethnic groups	3	12.5

Adolescents' own perception of the therapeutic alliance.

According to hypothesis one, it was anticipated that higher levels of epistemic trust and mentalizing abilities, along with lower levels of BPF, epistemic mistrust, and epistemic credulity, would be associated with higher ratings of the therapeutic alliance from the adolescents' own perspective. Additionally, consistent with existing literature, it was expected that epistemic trust would moderate the impact of mentalizing on the adolescents' perspective of the therapeutic alliance.

Before hypothesis testing, the variance inflation factor (VIF) and tolerance values were used to assess multicollinearity. VIF scores (32.01 – 146.21) and tolerance values (.007 - .03) indicated that the three variables—ET, mentalizing ability, and the interaction between ET and mentalizing—were highly correlated with each other. Visual inspection of the histogram and Q-Q plot also indicated a non-normal distribution of residuals, with slight tailing to the left in the histogram. To address high multicollinearity, the interaction term in this model was mean-centred (Kraemer & Blasey, 2004). Following this adjustment, collinearity statistics were within an appropriate range, and the model approached a normal distribution. There was independence of residuals, as assessed by a Durbin-Watson statistic of 1.71. There were no studentized deleted residuals greater than ±3 standard deviations, and no values for Cook's distance above 1.

The results of the univariable analyses are displayed in Table 3. The final column indicates that none of the variables of interest were statistically associated with adolescents' ratings of the therapeutic alliance. However, it is important to note that due to the low sample size, there may be insufficient statistical power in this study to support the hypotheses in this paper.

Overall, the multivariable regression model revealed a non-significant regression equation, $F(13,23)=0.86$, $p=0.61$, with an R-squared of 0.53. This model accounted for 53% of the variance in adolescents' perceptions of the therapeutic alliance in this sample.

The beta weights for the independent variables in the multivariable regression model were as follows: interaction between epistemic trust and mentalizing ability ($\beta=0.73$, $p=0.43$), mentalizing ability ($\beta=0.40$, $p=0.68$), epistemic trust ($\beta=-0.02$, $p=0.95$), epistemic mistrust ($\beta=0.07$, $p=0.91$), epistemic credulity ($\beta=0.23$, $p=0.66$), and borderline personality features ($\beta=-0.014$, $p=0.98$). Gender, age, ethnicity, and RCADS scores were not statistically significant covariates.

Considering the coefficients displayed in the univariable analyses, the interaction term between mentalizing ability and epistemic trust appears to be most strongly associated with the adolescents' ratings of the therapeutic alliance. In a multivariable model, controlling for age, mental health difficulties, and gender, the interaction variable remained the most strongly associated with the outcome.

A non-significant result indicates that a statistically significant interaction effect was not found for epistemic trust on the relationship between mentalizing ability and adolescents' ratings of the therapeutic alliance. However, Aiken and West (1991) argue that follow-up analyses can be appropriate with non-significant interactions to provide further clarification of the relationship. Given the low statistical power of this study and the consistent finding that the interaction variable remained the most strongly associated with the outcome in both the univariable and multivariable models, we have tentatively explored this finding.

The current model suggested that the presence of epistemic trust and mentalizing ability together had a larger effect on adolescents' ratings of the therapeutic alliance than the separate sum of each. Figure 1 shows a graphical representation of the interaction, indicating that the relationship between mentalizing ability and therapeutic alliance becomes stronger for adolescents with higher levels of epistemic trust compared to those with lower mentalizing abilities. This interaction explained 3% of the variance in the outcome variable, as shown by an increase in R-squared from 50% without the interaction included to 53% with the interaction included.

Table 3

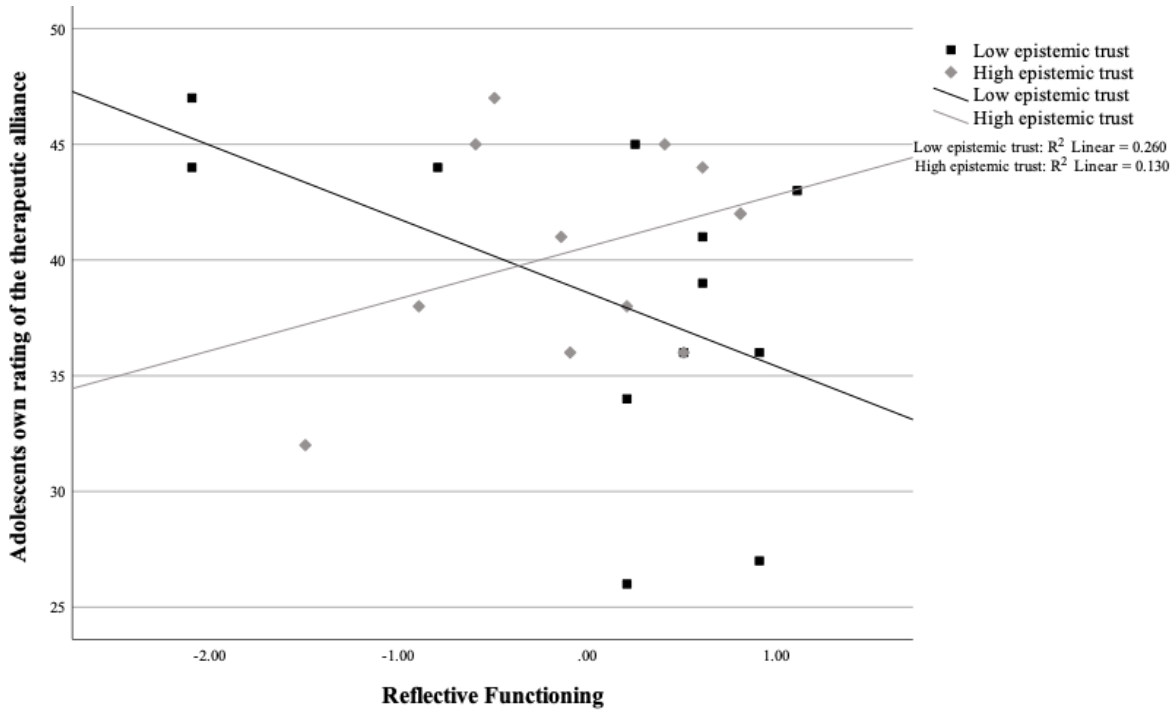
Univariable Analyses of Independent Variables on the Adolescents' Own Rating of the Alliance

Outcome	Predictor	Slope (standardized beta)	Standard error	t-statistic	p-value

Adolescents' own alliance rating	BPF	.252	.084	1.22	.235
	Mentalizing ability	-.250	1.31	-1.21	.239
	Epistemic trust	-.073	1.50	-0.34	.735
	Mentalizing ability X Epistemic trust interaction	.397	1.07	2.03	.055
	Epistemic mistrust	-.196	1.86	-.94	.36
	Epistemic credulity	.005	1.08	.025	.981

Figure 1

Moderating Effect of Epistemic Trust on the Relationship Between Mentalizing and Adolescent' Own Alliance Rating



Adolescent rating of the therapeutic alliance from their therapists' perspective ("adolescents' perspective-taking").

Regression analyses were used to test hypothesis two, which predicted that adolescents with higher levels of epistemic trust and mentalizing abilities, and lower levels of BPF, epistemic mistrust, and epistemic credulity, would assume that their therapists would give a higher rating to the alliance.

Visual inspection of the histogram indicated non-normality, with tailing to the left. Further visual inspection of the normal Q-Q plot indicated a bow-shaped pattern of deviations away from the diagonal, suggesting that the residuals had excessive skewness. The scatterplot also showed that the data was heteroscedastic. A Box-Cox transformation (Box & Cox, 1964) was therefore applied to the dependent variable, which improved linearity and reduced non-normality of residuals. Tolerance and VIF values were within an acceptable range for all variables, indicating no issues with multicollinearity, and there was independence of residuals (See Appendix F).

Results from the univariable analyses are found in Table 4, none of the variables of interest were found to be statistically significant predictors of the adolescents' perception of their therapists' rating of the alliance. Considering the standardised beta values, mentalizing ability was most strongly associated with the outcome variable, with a β of 0.33. In a fully powered study, this may indicate that adolescents with higher mentalizing ability tend to assume their therapists will rate the therapeutic alliance more highly. The negative coefficients for both epistemic mistrust and borderline personality features suggest that as borderline personality features and epistemic mistrust in adolescents increase, their rating of the therapeutic alliance from their therapists' perspective will become more negative.

A multiple regression with age, gender, ethnicity, and mental health difficulties included in the model as covariates revealed a non-significant regression equation, $F(12,23)=0.79$,

p=.66. This model accounted for 46% of the variance in adolescents' perception of their therapists' rating of the alliance. The beta weights for the independent variables in the multivariable model were as follows: epistemic trust (β=-0.40, p=.23), epistemic mistrust (β=0.01, p=.79), epistemic credulity (β=-0.08, p=.84), mentalizing ability (β=0.65, p=.26), and borderline personality features (β=0.10, p=.87). Gender, age, and RCADS scores were not statistically significant covariates. Mentalizing ability continued to have the strongest association with the outcome in both the univariable analysis and when included in a multivariable model.

Table 4

Univariable Analyses of Independent Variables on the Adjusted Adolescents' Perspective Taking Dependent Variable

Outcome	Predictor	Slope (standardized beta)	Standard error	t-statistic	p-value
Adolescents' perspective taking of therapists rating of alliance	BPF	-.20	.105	-.95	.354
	Mentalizing ability	.33	1.45	1.62	.120
	Mentalizing ability X Epistemic trust interaction	-.12	1.42	-.56	.583
	Epistemic trust	-.09	1.84	-.46	.649
	Epistemic mistrust	-.201	2.29	-.96	.346
	Epistemic credulity	-.100	1.32	-0.47	.641

Therapists' own rating of the therapeutic alliance

Hypothesis three predicted that higher levels of adolescents' epistemic trust and mentalizing abilities, and lower levels of BPF, epistemic mistrust, and epistemic credulity would be associated with a higher rating of the alliance by therapists. This was first explored with

univariable analyses for each predictor variable on the outcome variable, followed by a multivariable regression model that included age, mental health difficulties, and gender as covariates.

The assumption of linearity was met, as assessed by partial regression plots and a plot of studentized residuals against the predicted values. There was independence of residuals, as assessed by a Durbin-Watson statistic of 1.70. There was no evidence of multicollinearity, as assessed by tolerance values greater than 0.1. There were no studentized deleted residuals greater than ±3 standard deviations. Homoscedasticity was confirmed by visual inspection of a plot of unstandardized predicted values against studentized residuals. The assumption of normality was met, as assessed by a Q-Q Plot and histogram.

Table 5 displays the univariable analyses, none of the variables of interest were found to be statistically significant predictors of therapists rating of the alliance. When added in a multivariable regression model, the beta weights for the independent variables showed that adolescents' level of epistemic trust was a significant predictor of therapists' rating of the alliance. Therapists working with adolescents who had higher epistemic trust capacity gave a higher rating of the therapeutic alliance (β=0.76, p=.012). Meanwhile, epistemic credulity (β=0.32, p=.32), epistemic mistrust (β=-0.31, p=.31), mentalizing ability (β=0.10, p=.81), and borderline personality features (β=0.20, p=.66) were not significant predictors of therapists' rating of the alliance. The overall multiple regression model did not statistically significantly predict therapists' rating of the alliance, $F(12, 21)=2.24$, p=.12. Together, the predictors accounted for 75% of the variance in therapists' ratings of the alliance ($R^2=.749$).

However, importantly, when the covariates gender and RCADS score were each removed from the model, epistemic trust was no longer a significant predictor. When the RCADS score was removed as a covariate from the model, the coefficient slope between epistemic trust and therapists' rating of the alliance reduced to β=0.55 (p=.069). When gender was

removed from the model, the coefficient of epistemic trust reduced to β=0.54 (p=.080). Gender was also found to explain 21% of the total variance in the outcome variable, as shown by a decrease in R^2 from 75% with gender included to 54% without gender included. The RCADS score explained 13%.

Table 5.

Univariable Analyses of Independent Variables on Therapists' Own Rating Of Alliance

Outcome	Predictor	Standardized beta	Standard error	t-statistic	p-value
Therapists' own rating of the therapeutic alliance	Borderline personality features	-.31	0.05	-1.46	.158
	Mentalizing ability	.38	0.74	1.82	.084
	Epistemic trust	.26	0.95	1.11	.282
	Epistemic mistrust	.11	1.19	.51	.614
	Epistemic credulity	-.14	0.70	-0.63	.536

The difference in therapists' own rating, and adolescents' perception of their therapists' rating of the alliance

A multiple regression with a difference variable included as the outcome was used to test the hypothesis that higher levels of epistemic trust and mentalizing abilities, and lower levels of BPF, epistemic mistrust, and epistemic credulity would be associated with a smaller difference between the therapists' own rating of the alliance and the adolescents' perspective-taking rating of the alliance.

A difference variable was computed by subtracting the “therapists’ own” alliance rating variable from the “adolescents’ perspective-taking” variable. The “therapist's own” alliance rating was then included as a covariate in the model to control for the variance in the baseline level of this variable.

There was no evidence of multicollinearity, as assessed by VIF values greater than 5. The assumption of linearity was met, as assessed by partial regression plots and a plot of studentized residuals against the predicted values. There was independence of residuals, as assessed by a Durbin-Watson statistic of 2.41. Visual inspection of the histogram indicated some non-normality, with tailing to the left; however, as regression models are generally considered robust to non-normality and all other assumptions were met, no changes were made. There were no studentized deleted residuals greater than ±3 standard deviations.

Results from the univariable analyses are found in Table 6. None of the variables of interest were found to be statistically significant predictors of the difference between adolescents' perspective-taking rating of the alliance and the therapists own rating.

A non-significant regression equation was found, $F(14, 22)=.66$, $p=.76$, $R^2=0.537$. This model accounted for 54% of the variance in the difference between therapists’ own rating of the alliance and adolescents’ perspective-taking rating of the alliance. The beta weights for the independent variables were as follows: epistemic trust ($\beta=-0.37$, $p=.49$), epistemic mistrust ($\beta=-0.04$, $p=.93$), epistemic credulity ($\beta=-0.06$, $p=.90$), mentalizing ability ($\beta=0.55$, $p=.38$), and borderline personality features ($\beta=0.11$, $p=.87$). Age, gender, ethnicity, and RCADS score were not statistically significant covariates.

Table 6.

Univariable Analyses of Independent Variables on the Difference Between Therapists’ Own Rating and Adolescents’ Perspective-Taking Rating.

Outcome	Predictor	Standardized beta	Standard error	t-statistic	p-value
Difference between adolescents' own and presumed rating	Borderline personality features	-.14	0.11	-0.66	.518
	Mentalizing ability	.31	1.58	1.55	.136
	Epistemic trust	-.11	2.11	-.50	.621
	Epistemic mistrust	-.20	2.28	-1.03	.317
	Epistemic credulity	-.07	1.38	-0.36	.721

The difference in therapists' own rating of the alliance, and adolescents' own rating of the alliance

It was hypothesised that higher levels of epistemic trust and mentalizing abilities, along with lower levels of BPF, epistemic mistrust, and epistemic credulity, would predict a smaller difference between the therapists' own rating of the alliance and the adolescents' own rating of the alliance.

To test this, a difference variable was computed by subtracting the adolescents' alliance rating from the therapists' alliance rating. The therapists' alliance rating was then included as a covariate within the regression model. Predictor variables included epistemic trust, epistemic mistrust, epistemic credulity, mentalizing ability, and borderline personality features. Age, RCADS score, ethnicity, and gender were included as covariates.

Visual inspection of the studentized residuals against the predicted values plot revealed assumption of linearity was met. There was no evidence of multicollinearity, as assessed by VIF values greater than 5. There was independence of residuals, as assessed by a Durbin-Watson statistic of 2.04. Visual inspection of the histogram indicated a normal distribution.

Results from the univariable analyses are found in Table 7. The test variables were not found to be statistically significant predictors of the difference between adolescents' and therapists' ratings of the therapeutic alliance.

The multivariable regression model revealed a non-significant regression equation, $F(13, 21)=1.93$, $p=0.18$, with an R-squared of 0.76. This model accounted for 76% of the variance in the difference between the adolescents' and therapists' own ratings of the alliance in this sample. The beta weights for the independent variables were as follows: epistemic trust ($\beta=-0.05$, $p=0.89$), epistemic mistrust ($\beta=-0.18$, $p=0.57$), epistemic credulity ($\beta=-0.08$, $p=0.81$), mentalizing ability ($\beta=-0.10$, $p=0.83$), and borderline personality features ($\beta=0.02$, $p=0.97$).

Table 7

Univariable Analyses of Independent Variables on the Difference Between Adolescents Own Rating and Therapists Own Rating of the Therapeutic Alliance

Outcome	Predictor	Standardized beta	Standard error	t-statistic	p-value
Difference between adolescents' own and therapists' own	Borderline personality features	.11	0.08	0.65	.525
	Mentalizing ability	-.07	1.21	-0.44	.662
	Epistemic trust	-.08	1.54	-.46	.651
	Epistemic mistrust	-.19	1.64	-1.23	.234
	Epistemic credulity	-.11	0.99	-0.69	.494

Discussion

This study aimed to explore whether epistemic trust and mentalizing ability influence perceptions of the therapeutic alliance in adolescents engaging in psychological therapy. Additionally, it considered whether perceptions of the alliance vary concerning differences in severity of psychological difficulties, particularly focusing on BPF. Three perspectives of the therapeutic alliance rating were captured within therapist-patient dyads: the therapist's own rating, the adolescent's own rating, and the rating made by adolescents when they took the perspective of their therapist. Based on these aims, five hypotheses were tested in a clinical sample of adolescents and their therapists.

Due to the sample size being smaller than anticipated and the study not reaching full statistical power, the findings related to these hypotheses are explored tentatively below; acknowledging the risk of both Type I and Type II errors. In particular, patterns emerging between variables in these findings are outlined in the context of their links to existing literature. The study limitations, as well as the possible implications of the current findings for clinical contexts and future research, are then provided.

Adolescent perspectives of the therapeutic alliance

The first two primary hypotheses were not supported by the findings in this study: mentalizing, epistemic stance, and borderline personality features were not independently and significantly associated with the adolescents' own ratings of the alliance, nor the rating of the alliance made by adolescents when taking their therapist's perspective. However, there was preliminary evidence that supported the hypothesis that epistemic trust would moderate the influence of mentalizing ability on the adolescent's own perspective of the therapeutic alliance. This hypothesis was developed based on preliminary findings by Aisbitt (2020) and reflected current theoretical understanding of the interactive role of epistemic trust and mentalizing in the alliance. This finding approached significance, and so will be interpreted

cautiously within the context of existing literature, acknowledging the low statistical power and the possibility of a Type II error.

These findings together indicate that an adolescents' experience of the therapeutic alliance is shaped by the presence of both mentalizing and epistemic trust, rather than either factor alone. Specifically, in this sample adolescents who had a higher capacity to mentalize appeared more likely to appraise the therapeutic relationship positively—but only if epistemic trust had been established. This interpretation is corroborated by the limited but consistent evidence that is currently available (Folmo, 2019; Fisher et al., 2023; Li et al., 2022). For instance, Folmo (2021) found that the working alliance in mentalization-based treatment for individuals with BPD was strengthened through a process of establishing epistemic trust with the client.

This interpretation also aligns with the social communication model, which emphasises the role of both mentalizing and epistemic trust within the therapeutic relationships (Fonagy & Allison, 2014; Luyten et al., 2020). While a patient's ability to mentalize their therapist is likely to benefit collaboration within the alliance, it is the process of establishing epistemic trust that reassures the patient that their therapist understands their experiences and can be considered a knowledgeable and trustworthy source of information. Furthermore, as noted by Jaffrani et al. (2020), having the confidence that someone has genuinely understood your subjectivity leads to a successful process of collaborative working and shared goals, which are important in the positive experience of the alliance, as well as successful outcomes in therapy (Bachelor, 2013; Wampold & Imel, 2015).

Thus, while capturing the possible influence of epistemic trust as a moderator in this study may arguably be an oversimplification of the overlapping nature of epistemic trust and mentalizing, it is consistent with the idea that epistemic trust may be a key mechanism in the adolescent building a helpful therapeutic alliance.

Clinician perspectives of the therapeutic alliance

Consistent with previous studies (Aisbitt, 2020; Gergov et al., 2021; Stige et al., 2021; van Benthem et al., 2020), the therapists' ratings of the alliance in this study were not correlated with the adolescents' own ratings or presumed ratings. The therapists' ratings were also slightly higher than the adolescents' ratings, as found in previous research (Aisbitt, 2020; Gergov et al., 2021). While this study does not provide sufficient statistical evidence to speculate on the meaning within these findings, their consistent appearance in the literature highlights the importance of therapists engaging with adolescents' experiences of the alliance, as the therapist's own experience of the alliance may not always be a reliable indicator. Adolescents have been found to value therapists' use of client feedback, reflecting attunement to their individual needs (Dimic et al., 2023). Indeed, receiving direct client feedback can help therapists understand the patient's internal state, mentalize their position, and support the process of establishing epistemic trust.

In a regression model in this study, epistemic trust was the only test variable significantly associated with the therapists' rating of the alliance, while mentalizing, BPF, and epistemic mistrust and credulity showed no association. However, this significant association disappeared when the RCADS variable was removed from the regression model. This indicates that psychological difficulty influenced the relationship between the therapists rating of alliance and the adolescents' epistemic trust, and that psychological difficulty may be acting as a confounding factor. Given the high risk of both Type I and Type II errors, these results are interpreted cautiously.

The link between general psychological difficulties and dysfunctions in epistemic stance has been evidenced in large sample studies (Li et al., 2023; Folmo, 2021) and is grounded in Fonagy and colleagues' theoretical understanding of epistemic trust (Fonagy & Allison, 2015; Fonagy et al., 2017b). Higher levels of psychological difficulty are typically

experienced in the context of increased social isolation (Dill et al., 2004), exposure to non-mentalizing environments (Campbell & Allison, 2022), and psychological comorbidity. With this context, adolescents experiencing higher levels of psychological difficulties are understandably likely to enter therapy in an entrenched state of epistemic vigilance (Fonagy & Campbell, 2017), making it harder for therapists to create a safe space to establish epistemic trust and achieve a sense of collaborative and helpful work. Additionally, considering therapy with young people specifically, who may prefer to maintain autonomy and not involve other adults, therapists may struggle to establish epistemic trust if it is necessary to activate the system around the young person in safety planning. These interpretations may provide insight into the influence of psychological difficulty on the relationship between epistemic trust and therapists' alliance scores. Additionally, this highlights the important of considering the severity of psychological difficulty, when examining predictors of the therapists' perception of alliance.

Role of borderline personality features

A higher severity of BPF was correlated with a reduced ability in mentalizing, and higher epistemic credulity. This corroborates the literature that reports a pattern of hypermentalizing associated with BPF (Bo et al., 2017; Luyten et al., 2020). Indeed, a tendency to hypermentalize may also theoretically explain the strong correlation between BPF and EC, as individuals who rely on fast and automatic mentalizing may be more likely to quickly accept misinformation from dishonest sources, making them more vulnerable to exploitation.

There are no existing empirical studies specifically exploring the link between BPF and epistemic credulity. However, , et al. (2023) evaluated epistemic credulity in a general population sample. They found that adolescents with high levels of epistemic credulity

experienced more difficulties regulating emotions, which increased their vulnerability to internalizing difficulties. Although this finding was not from a clinical sample, it corroborates the results of this study that high levels of general psychological difficulties were significantly and positively correlated with higher levels of epistemic credulity. They hypothesised that vulnerability to dysfunctional social interactions may be created through an excessive level of trust in others, leading to emotional confusion and a loss of self-agency, which contributes to difficulties in emotion regulation.

In summary, epistemic credulity appears to be related to psychological difficulties and higher severity of BPF. It would be interesting to explore this relationship further in studies with clinical samples. This could help clarify whether the patterns observed in general population samples also apply to clinical populations, providing a more comprehensive understanding of the interplay between epistemic credulity, mentalizing difficulties, and BPF.

Limitations

Several limitations need to be considered when interpreting the findings of this study. Firstly, the smaller than planned sample size increases the risk of Type I errors and reduces the statistical power of this study to find evidence supporting the proposed hypotheses. Meeting the recruitment target was difficult for various reasons. For example, the resource of clinical teams in child and adolescent services are known to be stretched and under significant pressure, leading clinicians to perhaps feel they did not have the capacity to be involved. Additionally, the recruitment timeline was substantially shorter than planned. Due to the small sample size, the conclusions drawn in this paper are therefore tentative, and it has been necessary to lean heavily on existing literature. Additionally, in the regression analyses, experimental variables were retained in the model despite the risk of overfitting due to the

small sample size. This decision was made because the pilot project linked to this study was also underpowered (n=13; Aisbitt, 2020) and had removed covariates due to this. To build on these preliminary findings and ensure this study offers a distinct perspective, all variables collected from the sample were included.

There are various limitations associated with the measurement tools used in this study. Firstly, as recruitment for this study was completed within a wider project, adolescents were required to complete ten questionnaires in one session, some of which contained many items (e.g., RCADS and RFQ-Y). Although adolescents were able to take breaks at any time, survey fatigue may cause measurement error. Future studies may benefit from employing briefer questionnaire tools, such as the 13-item version of the RFQ-Y (Lund et al., 2023). Indeed, concerns have been raised about the scoring of the 46-item RFQ-Y (Duval et al., 2018), and the RFQ-Y-13 has recently been found to have superior psychometric properties (Martin-Gagnon et al., 2023).

The use of the ETMCQ in clinical populations has also been called into question (Riedl et al., 2023). Although the ETMCQ is currently the only available measure of epistemic trust validated in adolescent populations, it has only been validated to measure differences in epistemic stance in general populations. This measure may therefore lack sensitivity to detect features of epistemic trust in clinical samples (Li et al., 2023). An observer-based measure of epistemic trust has recently been validated (Fisher et al., 2024). Using observer-based methods alongside self-reports in future studies could reduce the influence of common method variance, which may have affected this study due to exclusive self-report use. Additionally, the reliance on self-report measures in this study introduces the risk of social desirability bias, impacting the study's internal validity.

The cross-sectional nature of this study means that only a snapshot is captured of the complex and dynamic interplay between epistemic trust and mentalizing within the

therapeutic relationship. The theory of epistemic trust emphasises the changing nature of the epistemic stance and mentalizing capacities over the course of therapy; however, it is not within the remit of a cross-sectional exploration to provide empirical clarification on the temporal changes of these constructs.

This study collected data from patients and therapists around the time of the third session. This decision was based on evidence indicating that the therapeutic alliance is not established until this point (Hilsenroth et al., 2004) and in preparation for the second stage of this project, which involves collecting post-treatment data. However, it is noted that the third session may be too early for individuals to move from a state of epistemic vigilance to epistemic trust in relation to their experience of the therapeutic alliance (e.g., Fisher, 2020). Therefore, this study may be limited in its sensitivity to capture the influence of epistemic stance on the alliance.

Finally, the therapeutic models and approaches used by the therapists in this study were not captured. This makes it difficult to understand the therapy context within which the alliance is being navigated. The therapeutic approaches used across the three services are broad, ranging from brief CBT-based interventions to long-term psychotherapy. Although the development of epistemic trust and the importance of mentalizing in therapy have been understood as transtherapeutic factors (Fonagy & Allison, 2014), it is a limitation of this study that clarification cannot be made as to whether the findings are dependent on the therapeutic approach or are indeed generalizable to all psychological approaches.

Clinical implications

The main preliminary finding in this paper, which corroborates existing literature, is that the patients mentalizing capacity and epistemic trust within therapy appears to positively influence how adolescents perceive the therapeutic alliance. Existing evidence shows that the

adolescents' perception of the alliance at an early stage of treatment predicts positive treatment outcomes (Gergov et al., 2021). The clearest implication of this, is the therapists key role in fostering the patients mentalizing capacity and supporting a positive change in their epistemic stance. More empirical evidence is needed to elucidate the specific therapeutic processes that engender epistemic trust, however the model of three communication systems offers a useful theoretical framework to understand the clinical utility of this finding. Therapists' can activate epistemic trust and an openness to social learning in their patient by conveying understanding of their inner mental world, in a way that feels relevant and personal to the patient. This not only supports a trusting and collaborative therapeutic alliance (Jaffrani et al., 2020), but also enhances the patient's capacity for salutogenesis (Luyten et al., 2020). This process requires the therapist to use mentalizing skills that are common and relevant across all therapeutic approaches (Folmo et al., 2021; Fonagy, 2015; Katznelson et al., 2020).

It also appears to be important that the above therapeutic skills are employed at an early stage of therapy, as the benefits of a strong therapeutic alliance are likely to be realised only if epistemic trust has been established. Initiating therapeutic tasks aimed at change may be less effective if the patient has not developed trust in the therapist's authenticity and knowledge. This may be a particularly important consideration for time-limited evidence-based therapies that are increasingly utilised within CAMHS as part of the growing provision for early intervention support.

Future research

The findings of this study provide preliminary insights into the influence of epistemic trust and mentalizing on perceptions of the therapeutic alliance. However, further research with larger samples is required to substantiate these findings.

Additionally, to increase the clinical meaning and utility of findings such as these, future research should explore the temporal changes of these constructs. For example, in this study, did the young people arrive to therapy with a mentalizing capacity and an openness to social learning, or did the therapists own mentalizing capacity help to foster this? Longitudinal research is needed to elucidate how the epistemic stance and therapeutic alliance develops over time, and measurement of the therapists own mentalizing ability should be included to disentangle the influence of this. This will also help to establish an empirical basis for understanding the link between epistemic trust and treatment outcomes.

Building on this further, while this study has taken a narrow focus to isolate the patient experience within the therapist-patient dyad, a key tenant of epistemic trust theory is that the driver of symptom change is the generalisation of social learning to the wider network. Specifically, the experience of having one's subjectivity understood within the safety of the therapeutic alliance provides a social model of epistemic trust in other interpersonal relationships. This, in turn, appears to help patients shift their previously rigid beliefs about their social world and increase their capacity for social learning (Fonagy & Allison, 2014; Luyten et al., 2020). Longitudinal studies should therefore also seek to clarify whether establishing epistemic trust within the therapeutic relationship, generalises to relationships in their social network, and how this process relates to treatment outcomes.

Conclusion

Epistemic trust and mentalizing have been posited as key transtherapeutic factors associated with the patients' perception of the therapeutic alliance (Fonagy & Allison, 2014; Fonagy & Campbell, 2017). Although this study did not achieve sufficient statistical power to thoroughly explore these relationships, there was evidence of an emerging interaction effect suggesting that higher mentalizing capacity may be associated with higher ratings of the alliance if epistemic trust has been established. These findings build congruously on the

original pilot study (Aisbitt, 2020) and existing empirical evidence (Fisher et al., 2023; Li et al., 2022; Folmo, 2019). This finding has potential implications for clinical practice, suggesting that therapists should show genuine interest and understanding in the adolescents' subjective experience, with the aim of cultivating epistemic trust to ensure that the benefits of a strong therapeutic alliance can be achieved.

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Part Three
Critical Appraisal

In this critical appraisal I first provide the context in which I began working on this project, as I think it provides important background for my subsequent reflections.
I then outline the influences my previous clinical experiences had on bringing me to this project, my subsequent experiences of wearing both the researcher and clinician hat within the same clinical site, and more broadly the challenges we faced as a team in recruitment and my personal learning from this. Finally, I will describe some of my broader reflections on the research areas, and the ways that engaging with this research will influence my practice going forward.

My fellow researchers and I joined this project at a time where there had been a break between the last active project, the connections to sites that had previously been involved were therefore weakened by time. When we took on the project as our doctoral thesis, there was one recruitment site attached. While this site was (and has continued to be) incredibly engaged with this research, we were aware that our recruitment aims would place a lot of pressure on one site, and that the study would not be feasible unless we could find additional services. I had worked in mental health services for children and young people in London before starting my doctorate course, and I was about to start a placement in a community psychology service that I had previously worked in. I was therefore able to reach out to these services, and they very helpfully agreed to join the project as new research sites. This set an interesting personal context for the recruitment difficulties we faced, however it also felt very meaningful to be able to bring together my clinical experiences alongside my research journey. The project is of course much bigger than my personal experience of it, however in this final paper of the thesis I will share my reflections of how my experience of research became intertwined with, and influenced by, my role as a practitioner.

Influence of clinical experience

Before starting the doctorate, most of my clinical experience involved working with young people. This included work in community-based settings as a teaching assistant, to work in a Tier 4 psychiatric intensive care unit for children and adolescents. This has been a conscious choice as I enjoy working with young people. It lends itself to a systemic way of thinking - which I tend to align myself with - it requires creativity, and I also believe that there is a huge amount of personal resilience and insight in children and teenagers that can at times be overlooked by busy and overstretched systems of adults – a system that I include myself in. Figuring out how to mentalize the internal world of a young person, provide helpful containment for their emotional expression, and also activate the system around them while ensuring their voice remains heard, has been an important process of learning that has felt meaningful to me. Engaging with research that explored the influence of epistemic trust and mentalizing within an adolescent population therefore felt relevant to the learning that I was most interested in. I also anticipated that I would continue to work with young people and families once qualified, and so I was excited to be part of field of research that felt so relevant to the area of clinical practice I hoped to be joining.

Navigating the researcher and clinician role in the same clinical service

One of the services that joined this project as a recruitment site was a service I had previously worked in and would be coming back to work in for my final placement on the doctorate course. Being an active part of a child and adolescent psychology team meant that I was very aware of the pressure that clinicians working in this context were under. I found that trying to hold a position of both external researcher and colleague within the clinical team was difficult, and also that these two positions did not lend themselves to one another. Within my research team we were worried about meeting the recruitment target to ensure our study was sufficiently powered, we therefore resolved to try and reach more clinicians to encourage them to share the project with young people. However, in the clinical team we felt worried

about seeing young people and families as quickly as possible and attention was focussed on managing increasing clinical caseloads.

These differences in priority between the two positions I was holding sometimes felt frustrating. Although in practical terms the needs of the service and the needs of our research team felt incongruent, in the long-term I believed that increased research into the adolescents' experience of the therapeutic alliance would ultimately be beneficial for clinical services. For instance, the growing research area of epistemic trust has important potential implications for bringing together an understanding of a person's specific experiences and needs and proposing an effective, mentalizing-rich therapeutic approach to support them. In this way, the needs of the research and the needs of the clinical services were aligned. I therefore think it is important that clinical teams are supported to engage in research, and that capacity for this is carved out for them instead of adding to an existing workload. However, I recognise that for services the long-term implications of research will not feel as pressing as the caseload of families they are working with.

I had expected that being a part of one of the study sites would be beneficial to recruitment efforts, anticipating that having a physical presence in the service would make it much easier to remind clinicians about the study and encourage referrals. However, instead I felt very aware of the pressure that the clinical team was under, as well as the growing workload that they were managing. I also became aware of the many emails coming into my inbox asking for support with other active research projects that were taking place. Clinicians therefore had to hold multiple research projects in mind, not just ours. When I sat in the clinical team, adding my doctorate research project to that workload felt unhelpful and demanding. I believe this also reflects that in a balance between research-practitioner, I find myself leaning toward practitioner in terms of where I feel most comfortable. There I have a clear understanding of my role and expectations, whereas in the research team I found it

difficult to know when I had reached the limit of doing 'enough'. This is likely due to the fact I have held the role of clinician for many more years than I have held the role of researcher.

Learning associated with recruitment: what was difficult

There were also practical constraints that I believe may have influenced the recruitment difficulties we experienced. Our main research presentations to the clinical teams took place in the summer. This aligned with the time of their whole team meetings and was conveniently timed before the start of the academic year when referrals tend to increase. However, we did not have ethical approval to begin recruitment until late Autumn, by which time our project would understandably no longer be at the front of clinicians' minds. We did return to each site, and rather than joining another whole team meeting we attended multiple team meetings, however there was a sense that momentum was difficult to build and then maintain. A key piece of learning here for me was the importance of factoring in the potential for delays to parts of the project, as this is inevitable.

Our recruitment strategy depended on clinicians sharing the information with young people. We noticed that once a clinician had introduced the project to one young person, often they would continue to introduce it to more of the young people they were working with. Therefore, the challenge we faced seemed to be encouraging clinicians to do the initial introduction to a young person for the first time. Perhaps this was due to uncertainty in what exactly the research involved, or a lack of confidence in how to introduce the project? Having reflected on this, I think my presentations to services tended to provide a lot of information about the research background. This was done with the intention of making the research area feel engaging and relevant to clinicians working with young people. However, had I spent more time clearly outlining the steps involved with introducing the research to a young person, and addressing potential questions that may arise, perhaps clinicians would have felt more confident in choosing to show young people our flyers.

Learning associated with recruitment: what went well

Despite the challenges, it is very important to acknowledge that many young people did complete the research, and many clinicians did introduce the research to young people. I certainly experienced a sense of accomplishment and pride, alongside my research team and the clinical services involved, in starting the research from scratch in two new recruitment sites and re-establishing the project in an existing site. We received feedback from some of the young people involved that they found the questions were interesting and thought-provoking for them, as well as finding the vouchers helpful. We also had feedback from practitioners that involvement in the study had led to valuable conversations within the course of therapy, as it offered a natural invitation to speak about experiences of the alliance, in a way that might not usually occur. While this was of course not a direct intention of this project, it was an interesting reminder of the bigger picture of the research. Beyond the interpretations of the data I have made in this paper, the completion of questionnaire batteries seemed to also have facilitated some moments of reflection within therapeutic journeys that cannot be captured in a quantitative paper.

On reflection of the project more broadly, there are actions we took that seemed to be particularly beneficial to the procedure of recruitment and data collection, and there are other areas that I would highlight for improvement. In either case, they will provide helpful learning for any research I am involved with in the future. Meeting in-person with smaller groups of clinicians felt much more helpful than meeting in whole team meetings. Questions from clinicians could be more thoroughly addressed, and I also felt it was significantly easier to get a sense of the specific information that might be helpful for that team of clinicians. Putting aside time to have a phone call with a young person (and parent if appropriate) to introduce myself as the researcher and the project seemed to be beneficial to the young person feeling engaged. Sometimes young people chose not to talk over the phone and the

information sheets and consent forms were sent via email, however this seemed to result in a higher likelihood for young people not attending the research session. This is likely due to the young person not feeling a sense of connection to the project, and not having familiarity with the person they would be meeting with for the research session.

General reflections on the research process

Setting up the project

It would have been valuable to directly involve young people with the development of this project specifically. Including the voice of young people and families has been a consistent priority of mine me in my work in CAMHS settings, it represents an important personal value and shapes the way I have approached new initiatives and service developments in clinical contexts. Consultation with adolescents had taken place in the setup of the wider project, for example in the presentation of the questionnaire battery for the pilot study, and also in the development of the qualitative interviews. However, it is recognised that the development of this empirical study would have benefitted from the insight of the young people and professionals that were invited to be involved. As researchers we may be making assumptions about what is needed from research from an external position. In the future I will aim to ensure that more time is given in the planning stage to include consultation, and ideally co-production.

Another feature of the research that had felt important to navigate sensitively from the point of setting up the project, was the fact that clinicians would be aware that the study involved the exploration of adolescents' judgement of their therapeutic alliance. Based on learning from Aisbitt's (2020) pilot study we had anticipated that this may lead to reluctance on the clinician's part in being involved due to an impression that this included evaluation of their clinical skills. We therefore always ensured that we invited an open discussion related to concerns clinicians might have, when we met with clinical teams. We provided the rationale

for capturing three perspectives of the alliance, as well as reassurance about the anonymity of the data retrieval, and the fact that we would not be focussing on individual therapist-patient dyads. In the end, this was not raised explicitly as a concern for the therapists we worked with.

Handling non-significant data

A challenge that I experienced throughout this thesis was working with non-significant findings. For both my systematic review and my empirical paper I have many statistically non-significant findings. The major underlying reason for this seemed to be the small sample in both papers, as the non-significant findings are generally incongruent with the wider evidence base. This led to an unexpected opportunity for learning and required me to take a different approach to the way I made sense of my findings, compared to what I was used to. My experience of learning about the use of statistics within Psychology has largely focussed on how to interpret significant findings. The common advice that I found in statistics books and online tutorials was also that non-significant should not be explored further. Therefore, when I was first faced with non-significant findings in my doctorate thesis, I felt disheartened and there was a sense of failure. Failure that I had not done enough work to achieve a larger sample, or that I had completed the steps preceding analysis incorrectly. On reflection, handling non-significant findings has forced me to understand exactly what my data was showing – beyond the p-value – at a level I perhaps would not have engaged with had there been more significant findings to write about. I also had to engage in a different way with the literature. Both to make sense of emerging patterns in my data, but also to be able to critically appraise the non-significant findings that were surprising, and to make sense of what might be underlying these. Finally, in the write-up I found it difficult at times to achieve a balance in tone between offering worthwhile conclusions while acknowledging the limitations of in-sufficient data and risk of Type I and Type II errors.

Considering language

One of the aims of my empirical study was to explore constructs of epistemic stance, and mentalizing, in relation to borderline personality features. This is because this area of literature has focussed on borderline personality disorder (BPD): increasing understanding to the symptoms that underly the disorder and identifying mentalization-based therapeutic models. My clinical focus was on an adolescent population. I felt aware that a diagnosis of BPD for adolescents is contentious given the associated stigmatisation very often experienced by individuals with a diagnosis of BPD (Aviram et al., 2008; Veysey, 2014), the harmful perpetuation of power imbalances that the diagnosis carries (Chartonas et al., 2017), and the barriers that this diagnosis can create to accessing health support (Veysey, 2014). These experiences of this diagnosis are also contextualised within the medical-model perspective that is broadly utilised by the UK's mental health system. Researchers have argued that features of borderline personality are understood to emerge between 14 – 17 years (Sharp et al., 2018), and that the increased risk of developing BPF can be signalled when these traits do not reduce with time, as would be expected in typical development (Bo et al., 2021). However, they must be sensitively disentangled from typical adolescent development which is a complex period and includes increased impulsivity and emotion dysregulation. Currently, research broadly argues for the validity of a BPD diagnosis in adolescence (Gagnon et al., 2023; Winsper et al, 2016). However, caution is advised (National Institute for Health and Social Care Excellence, 2009), and studies find that many psychiatrists are reluctant to diagnose in adolescence (Papadopoullos, 2022). For instance, due to the potential harm that this diagnosis carries, as well as in acknowledgement that the impact of early adverse experiences and trauma can be devalued with this label (Vickers et al., 2022).

For this project, diagnostic criteria for BPD were not relevant, and a thorough exploration of the utilisation of BPD diagnosis was outside the remit of the thesis. However, I

did experience a sense of caution and responsibility in discussing BPD during adolescence in a way that was sensitive to the power that this label holds, particularly for young people. I selected to use the language of adolescents with 'borderline personality features', rather than disorder. Additionally, in line with epistemic trust theory, a socially oriented perspective is also taken in this thesis (Fonagy, 2017) - understanding BPF as a meaningful and learned response to adversity. I also attempt to ensure that the discussion of BPF is clearly understood within the context of a challenging and non-mentalizing sociocultural context.

However, I believe that future studies exploring BPF should carry the social contextualisation of this diagnosis, from the discussion and into the method. Specifically, in a quantitative paper it would be meaningful to include measures of attachment and trauma, so that the individual's contextual experiences can be understood alongside the interpretation and understanding of BPF. The Child Trauma Questionnaire (Bernstein et al., 1997), and the Attachment Style Questionnaire (Feeney et al., 1994) were part of our questionnaire battery and were included in a different study in the wider project. However, to ensure that each study offered a unique contribution, these measures were not included in this study. I would recommend that this is something considered in future research.

Future directions

I think it would be beneficial for future research in this area to strive to reach young people whose experiences of both their personal social world and of professional systems have led to a necessary and entrenched stance of epistemic mistrust. In this project I am aware that two of the recruitment sites are community-based services, and many of the older teenagers accessing those services are likely to have sought out therapy themselves. This would indicate that there would be a level of epistemic trust already established, based on previous interpersonal experiences being safe and positive. The young people that therefore

may not be represented in this project are also the young people that are often not represented by support services.

Additionally, I believe that the theory of epistemic trust and mentalization may have a role in challenging harmful perceptions of people who are labelled 'hard-to-reach' by clinical services. Instead of being 'resistant' to therapy, consideration and understanding is needed as to why it is necessary for this person to be self-reliant and feel mistrustful toward professional systems, or other parts of their network more generally. Current epistemic and mentalization theory emphasises epistemic vigilance, framing this position as an adaptive and meaningful response to challenging interpersonal experiences. This also helps to shift responsibility off the young person to engage with services, and instead highlights the need for professional services to mentalize the position of the individual. Recently, this literature has expanded beyond the parent-child and therapist-patient dyad, to include consideration of the role that non-mentalizing social systems play (Campbell & Allison, 2022). In this paper, the authors outline how epistemic trust theory can provide a clinically useful framework to understand how a person's social world, including their experience of inequality and powerlessness, influences their sense of agency, social functioning, and subjective wellbeing. This paper emphasises the need for a mentalizing-rich, systemic intervention. In my experience of exploring mentalizing and epistemic trust within the therapist-patient dyad, I felt pulled toward understanding this relationship within the context of the wider system of both the therapist and the young person. While exploration of this was not within the remit of my paper, I am excited by the future direction of the wider research.

Summary

I have found it interesting to reflect on the challenges named in this critical appraisal: the unexpected tension I experienced in holding the position of both researcher and practitioner during this process, and my initial concern that with so many non-significant

findings the content of these papers would have little meaning. However, in being able to step back and consider my experience of this process, engaging with this research has bought so much meaning to my understanding of working alongside young people in my clinical practice. Reflecting on this process has served as a reminder of why I was first drawn to epistemic trust and mentalizing research and has provided a huge amount of value in the way I now approach the therapeutic process with young people and families. Focussing on generating a strong and trusting alliance has always been important to me when working with young people. I believe that professionals have such an important role in showing teenagers that their opinions, experiences, and internal mental world are worthy of engagement by adults. I have seen the impact that this can have on self-esteem, and on confidence to try and share experiences or feelings with people that really matter. So, it has been very helpful to see this process mapped out within the theory of epistemic trust. I think that this area of research may also hold great meaning for the future of clinical practice with young people. I have found it personally beneficial to engage actively with the theory as a researcher. And finally, I have come to understand the clinical implications more clearly for myself, applying it to my own practice, as well as having the language to describe this process in supervision and clinical meetings. Therefore, through the challenges involved with holding two positions during this thesis, my experiences as a researcher and my experiences as a practitioner, have bought significant meaning to one another.

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Appendices

Appendix A

Joint thesis project contributions

Both the systematic review and the empirical project in this thesis were completed in collaboration with Sally Bell and Susie Taplin, as part of joint DClinPsy research projects. Together, we have been supervised by Professor Peter Fonagy, Dr Tobias Nolte, Dr Rob Saunders, and Dr Ciaran O'Driscoll.

Systematic Review

We worked together on designing the overall project, we then identified three independent projects to be completed as a precursor to this overall project.

The aim of the overall project was a mediation meta-analysis (meta-SEM) to explore the mediating role of mentalizing in the association between attachment and the therapeutic alliance, in a clinical population. This review has been pre-registered on PROSPERO and is available here: https://www.crd.york.ac.uk/prospero/display_record.php?ID=CRD42023447454

For independent thesis projects, we each focussed on an individual 'path' within this model. Sally has conducted a systematic review exploring the association between attachment and the therapeutic alliance, Susie completed a systematic review exploring the association between mentalizing and the therapeutic alliance, and finally I conducted a systemic review exploring the association between mentalizing and attachment.

We identified and refined our individual review questions and search strategy together, as we needed to ensure that these would complement one another. We then conducted our initial literature search, abstract screening, and full-text screening, independently. At the full-text screen stage we each reviewed a 10% sample for one other member of the group. Finally, the writing of our review was conducted independently.

Empirical project

For the empirical project we worked collaboratively to identify the area of research and the research questions that we would each focus on for our projects, to ensure that these were distinct. We worked together to complete amendments to study documents to be submitted for ethical approval, advertise the project to clinical services, and undergoing recruitment and conducting research sessions to collect data. This means that we have used data from the same participants. We worked independently on conducting our own analyses and writing up the thesis.

Susie completed a qualitative study. This study focussed on building understanding the potential role of the epistemic stance in adolescents' helping relationships with professionals in their social network, for example social workers, teachers, and mental health professionals. Sally completed a quantitative study, which aimed to understand whether childhoods trauma experiences are associated with ratings of an individual's professional personal social network. This study also explored differences in how adolescents and their key workers perceived the quality of social connections.

Appendix B

Psychometric Properties of Attachment Measures Used.

Adult Attachment Interview (AAI; Main, George, & Kaplan, 1984). The AAI is a semi-structured interview which asks subjects to describe attachment-related experiences from childhood and consider their influence on adult relationships. The AAI is typically transcribed verbatim and scored by trained coders. The studies included in this review use the dimensional scale of 'Coherence of Mind', which provides a measure of overall functioning in relation to attachment and is coded from 1 to 9, where higher scores reflect higher coherence of mind. A scoring of five borders a secure (≥ 5) versus insecure (≤ 5) attachment classification (Main et al., 2002). The AAI can also be used to assign individuals to broad categorical classifications of secure-autonomous, insecure-dismissive, insecure-preoccupied, unresolved and cannot classify. Inter-rater reliability has been found to be high (ICC = .98; Compare, 2018) and the coherence sub-scale of the AAI, has been found to be the best predictor of attachment security, $r = .96$, $p < .001$ (Crowell et al., 2002). Five studies used the AAI.

Child Attachment Interview (CAI; Target et al., 2003). The CAI is a semi-structured interview adapted from the AAI for use with 7- to 11-year-olds. Children are invited to describe attachment related events and their relationships with primary caregivers, for example asking the child to describe their primary caregiver in three words. The CAI can be coded by trained rater's using a score from 1 – 9, in up to 11 domains (e.g. "resolution of conflicts" and "overall coherence"). Scale scores and interview behavious analysis can also be used to provide an overall attachment classification for each attachment figure using four domains similar to that used by the AAI: secure, dismissing, preoccupied or disorganised. The CAI is found to have good content validity and adequate inter-rater reliability (Jewell et

al., 2019; Shmueli-Goetz et al., 2008). Three studies used the CAI, utilising the coherence and disorganised scale. In all three studies satisfactory internal consistency (ICC) was found between the raters (ICC = 0.59 – 0.88). The overall coherence scale has found to have high convergent validity and inter-rater reliability (r = 0.86; Shmueli-Goetz et al., 2008). The convergent validity and the coding of the disorganised scale has been questioned (Privizzini, 2017).

The Inventory of Parent and Peer Attachment-Revised (IPPA-R; Gullone & Robinson, 2005). Developed for use with adolescents, the IPPA-R measures the positive and negative affective and cognitive dimensions on two overall sub-scales: parent relationships (28 items) and peer relationships (25 items). A five-point scale is used ("Almost always or always true" to "Almost never or never true"). The items on both of the scales have been demonstrated to cluster into three factor (trust, communication, and alienation). Higher scale scores indicate more problematic attachment relations to parents and peers. The IPPA-R has been found to have good validity and reliability (Gullone & Robinson, 2005; Jorgensen, 2021). The parent sub scale tends to have higher rates of validity (Andretta et al., 2017; Maya et al., 2023). Three studies used the IPPA-R.

The Experience of Close Relationships Scale-Revised (ECR-R; Fraley et al., 2000). The ERC-R is a 36-item questionnaire, originally developed to measure adult romantic attachment along two dimensions: anxiety over abandonment and avoidance of intimacy. Higher scores indicate higher attachment anxiety or avoidance. This version demonstrates adequate psychometric properties as a measure of romantic attachment (Sibley et al., 2005). The ECR-Short form (ECR-SF; Wei et al., 2007) consists of 12 items, and has adequate internal consistency. The ECR-Revised Child Version (Brenning et al., 2011) is a 12-item version adapted for use with young people, which demonstrates similar reliability, validity and factor

structure to the full ECR (Brenning et al., 2014). One study used the ECR-R, one used the ECR-SF, and one used the ECR-RC.

The Attachment Style Questionnaire (ASQ; Feeney et al., 1994). The ASQ is a 40 item self-report measure developed in an adult population. It comprises of five dimensions which include two scales of attachment avoidance (Relationships as Secondary and Discomfort with Closeness), two scales of attachment anxiety (Need for Approval and Preoccupation with Relationships) and one of attachment security (Confidence). The ASQ has shown construct validity (Brennan et al., 1998) and adequate reliability across the sub-scales (Keating et al., 2013). The ASQ is used by one study.

Psychometric Properties of Mentalizing Measures Used.

Reflective Functioning Scale (RFS; Fonagy et al., 1998). Using AAI transcripts, the RFS assesses the overall quality of mentalization in the context of attachment relationships, specifically this scale assesses an adult's ability to reflect on their own childhood experiences with caregivers, in. mentalizing terms (Katznelson, 2014). It uses an 11-point scale ranging from -1 (negative RF, for example interviewees are grossly distorting of mental states) to 9 (exceptional RF, for example interviewees show unusually complex reasoning about mental states). The reliability and validity of the RFS is well documented (Bouchard et al., 2008; Fonagy et al., 1996, 1998; Taubner et al., 2013; Compare, 2018) and is considered a gold standard measure of RF (Antonsen et al., 2016). Five studies used the RFS.

The Reflective Functioning Questionnaire (RFQ; Fonagy et al., 2016) is a 56 item self-report assessing the ability to understand mental states of the self and others. The questionnaire is comprised of two-dimensional sub-scales: uncertainty sub-scale (hypomentalizing) reflecting an extreme lack of knowledge about mental states, and certainty sub-scale (hypermentalizing), reflecting better mentalizing capacity. Re-test reliability and

internal consistency are well documented (Stagaki, 2022; (Badoud et al., 2015; Fonagy et al., 2016). The RFQ has been adapted for youth (RFQ-Y; Sharp et al., 2009), it is a 46-item self-report for use with adolescents. This instrument produces a total score, where a high score indicates a high RF capacity. The RFQ-Y has demonstrated good psychometric properties (Ensink et al., 2018; Ha et al., 2013). Seven studies used the RFQ, one study used the RFQ-Y.

The Mentalization Questionnaire (MZQ; Hausberg et al., 2012). This 15-item self-report instrument measures mentalization along four sub-scales: 'refusing self-reflection', 'emotional awareness', 'psychic equivalence mode', and 'regulation of affect'. In the included study, the overall score of the MZQ was used where higher score indicated higher attachment capacities. The MZQ has satisfactory reliability and validity for clinical samples (Riedl et al., 2022; Paridaens, 2017). One study used the MZQ.

The Movie for the Assessment of Social Cognition (MASC; Dziobek et al., 2006). This is a measure of hypermentalizing, which uses a computerised test to assess implicit mentalizing abilities which reflect the demands of everyday life. Participants watch a 15-minute video of characters at a dinner party, and during pauses in the video are asked questions which refer to the characters mental states. A total score of hypermentalizing is derived. This instrument has demonstrated adequate reliability and validity (Dziobek et al., 2006; Fossati et al., 2018). One study used the MASC.

Appendix C

Figure C1

Forest plot to display a subgroup analysis to explore the moderating influence of sample setting (inpatient v outpatient setting) on insecure attachment and mentalizing ability

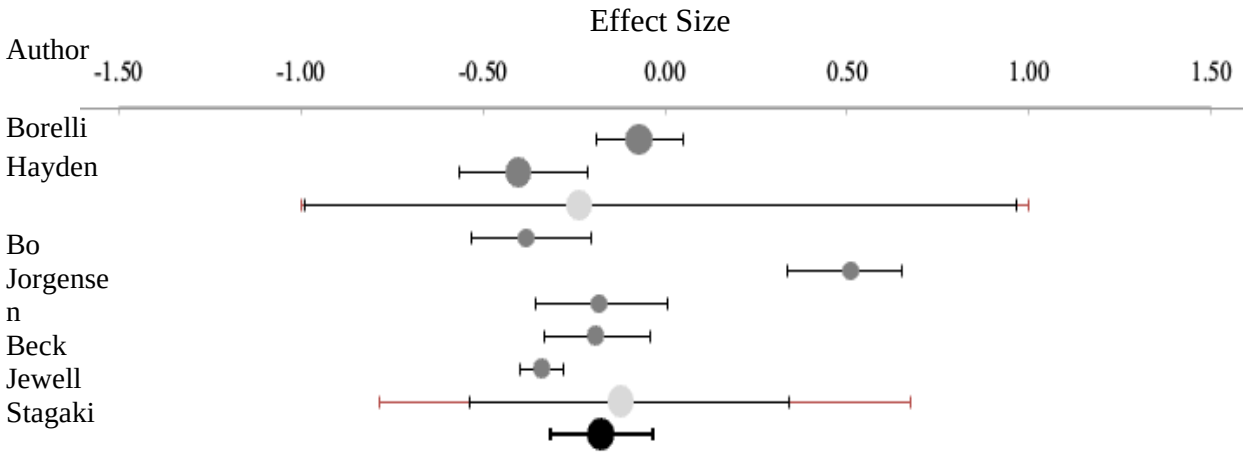


Figure C2

Forest plot to display a subgroup analysis to explore the moderating influence of measurement type on secure attachment and mentalizing ability.

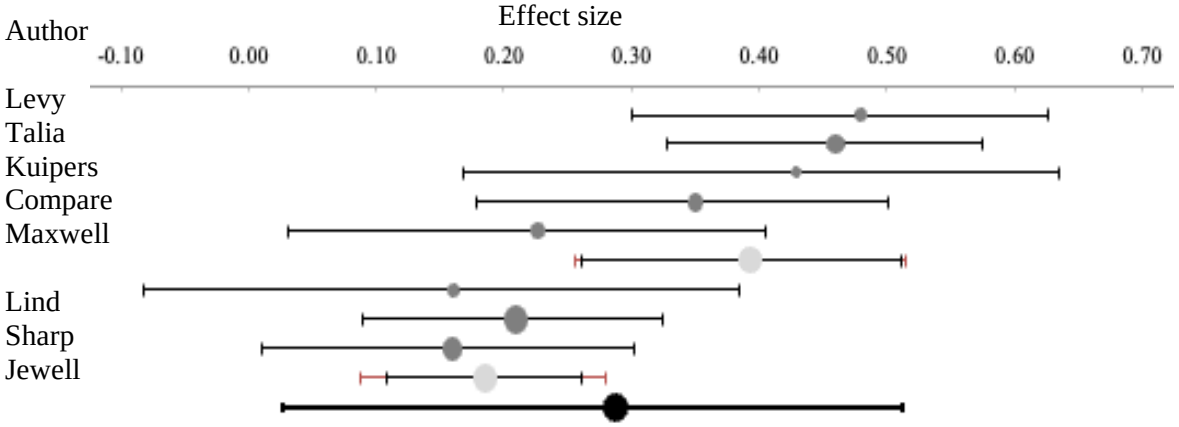
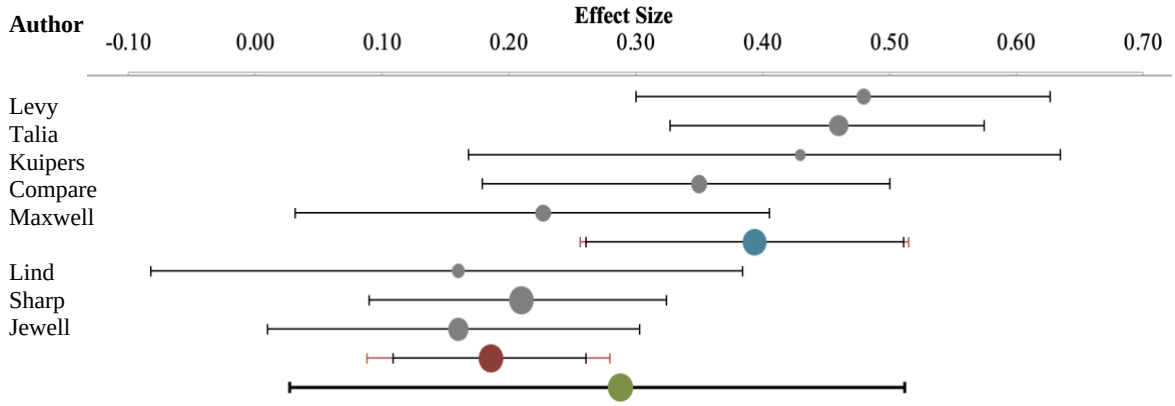


Figure C3

Forest plot to display a subgroup analysis to explore the moderating influence of sample setting (inpatient v outpatient setting) on secure attachment and mentalizing ability



Note. Effect sizes and confidence intervals are shown. Blue indicates overall effect size for studies using interview-based mentalizing measure, red indicates overall effect size for studies using self-report

Appendix D

Participant Information Sheet Example

Exploring how epistemic trust and mentalizing are related to trauma, psychopathology, and perceptions of helping relationships in adolescents.

PARTICIPANT INFORMATION SHEET FOR YOUNG PEOPLE AGED 16-18

Invitation

We would like to invite you to join a research project. This is because you are currently having therapy for your mental health in one of the services that we work with. Joining the study is entirely up to you and your parent/carer. Before you decide, we would like you to understand why this research is being done and what it would involve for you. One of our team will go through this information sheet with you and answer any questions you may have. You can discuss this with your parents/carers, family and friends.

Why is this research being done?

We want to learn more about how teenagers view their social help network (which includes both personal and professional support networks). We are specifically looking at epistemic trust (the openness to learn from others) and mentalizing (the ability to hold others' views and feelings in mind). We are looking at how trust affects young people's expectations of and engagement with their help network. We are also interested in whether trust in the therapist and help network changes over the course of therapy and if so, what contributes to this. This is important to us because the information that we get from this project might help us understand factors affecting young people's engagement with help networks and may allow us to better help people in the future.

Do I have to take part?

No. It is entirely up to you. This information sheet and speaking to the researcher can help you decide whether you would like to take part or not. If you decide you do not want to take part, there are no consequences, and your therapy or care will not be affected in any way.

What would taking part involve?

Towards the beginning of your CAMHS sessions, we will arrange to meet you either in-person at the service or on an online video platform. We will ask you to sign a form and fill in some questionnaires. We will also ask your CAMHS therapist/key worker to sign a form and fill in some questionnaires. This will not affect your therapy in any way. The form and questionnaires are described below in more detail.

The consent form

The consent form shows that you agree to take part in the study. If you change your mind or you do not want to continue with your participation, you can tell the researcher and your agreement to take part can then be undone (withdrawn). There are no consequences to this.

Part One: Questionnaires

The pack of questionnaires includes questions about how you are feeling and your behaviour, how you get on with friends and family, your expectations of helping relationships, and the people around who you view help you currently.

The specific questionnaires we will ask you to complete at the beginning of your sessions are:

- Attachment Questionnaire for Children (AQC)
- Childhood Trauma Questionnaire (CTQ-SF)
- Revised Childhood Anxiety and Depression Scale (RCADS)
- Strengths and Difficulties Questionnaire (SDQ)
- Borderline Personality Disorder Features Scale for Children (BPFSC)
- Epistemic Trust, Mistrust and Credulity Questionnaire (ETMCQ)
- Reflective Functioning Questionnaire for Youth (RFQ-Y)
- Scale to Assess Therapeutic Relationship (STAR-P)
- Social Network Analysis Questionnaire

The questionnaires your CAMHS therapist/key worker fills in

Your therapist/key worker will be asked to fill in two questionnaires. These will include questions about their understanding of your current helping relationships, specifically:

- Scale to Assess the Therapeutic Relationship (STAR-C)
- Social Network Analysis Questionnaire

When you have finished your CAMHS sessions, we will arrange to meet you again either in-person at the service or on an online video platform. We will ask you to fill in the questionnaires again. We will ask your CAMHS therapist/key worker to fill in their questionnaires again as well.

It is important to note that the questionnaires are **NOT** tests.

Part Two: Conversation Sessions

You may be invited to take part in ~~two separate~~ conversation sessions, one at the beginning of your sessions at CAMHS ~~and one towards the end~~. The conversation sessions will take place in person at the service or on an online video platform.

The first conversation session will explore with you the ways and extent to which trust plays a role in your relationships with your professional network.

~~The second conversation session will explore with you your perceptions of your therapist and your wider social network. Questions will explore any changes in your trust that may or may not have occurred over the course of therapy and what might~~

~~have contributed to change or non-change. It will also explore what factors might contribute to changes in trust towards the wider social network.~~
The conversations will be audio-recorded by the researcher so that we can make sure to keep track of exactly what you said. This makes our research accurate. We do not share anything you say in these conversations with anyone else. The recordings will be written out into text format by the researcher who you spoke to, but your name will not be linked to the text files. Then, the audio recordings will be destroyed.

Time Commitment and Payment

The questionnaires will take up to ninety minutes to complete (with breaks). If you decide that you want to stop before all the different questionnaires are finished, then you can.
The interviews will take around one hour (with breaks). If you decide you want to stop before the interview is finished or in between interviews, then you can. You may choose to complete just the questionnaires and opt out of the interviews if you wish.
We would like to show you our appreciation for agreeing to participate in part one of the study by offering you a £15 voucher for completing the questionnaires at the start of your CAMHS sessions, and another £15 voucher for completing the questionnaires at the end of your CAMHS sessions again. If you take part in part two of the study, you will be offered a £20 voucher for the first conversation session ~~and a further £20 voucher for the second conversation session.~~

What are the possible benefits of taking part?

If you do decide to participate you will be helping us to understand the part trust plays in helping relationships. This may help other people in the future. You may find some of the tasks enjoyable to complete.

What are the possible disadvantages and risks of taking part?

The research is not intended to be upsetting. However, if you do find it stressful or upsetting, we will give you information about who you can contact for support.

Rules that we must follow

There are a few things for you to know before you decide whether or not to take part in this study. We have to follow some important rules to make sure that people who help us are treated well and are safe:

(1) **Consent: Agreeing to take part in the study**

- You do not have to agree to take part if you do not want to. You are completely free to decide whether or not you want to take part in the study.
- If you do agree to take part, you can change your mind and stop at any time, without giving a reason. This will not affect any support you are receiving.
- If you agree to take part but something happens that means you cannot make your own decisions anymore, then any personal data we have collected from you will be destroyed. Anonymous data will be kept.

(2) **Confidentiality: Keeping what you tell us private**

The information you give is private. Nothing you say will be told to anyone outside the research team, except in three circumstances:

- You tell us that you or another person are planning to seriously harm a specific person.
- You tell us that you or another young person is at risk of harm.

- We may inform your key worker if we are concerned about your mental health.

If it was necessary to take any of the above steps, this will be discussed with you first.

Further supporting information:

How will my information be kept confidential?

We will keep all the information that you give us private (confidential). You will be given an ID number (e.g., 063) so your name will not be on any of your answers (it is anonymous). This is in line with the Data Protection Act 2018 and the General Data Protection Regulation (GDPR).

As part of the study, you will be asked to list up to 6 important people that help you. We will share these names with your therapist/key worker, so that we can ask them about their understanding of this. Aside from this one exception, the information you give us will not be shared with anyone (e.g., school).

There are two reasons why we must collect some of the personal information about you that we keep private. First, it is for making sure that our research study can have the best quality of data that helps us create successful results (GDPR lawful basis "research purposes"). Second, it is to make sure that the results we get from the data can be applied to other people like you in the public (GDPR lawful basis "public task"). In other words, we want to make sure that our study findings can help other people. Once the study is finished, the data will be stored very securely, and after 5 years, all personal data will be deleted. However, anonymised data may be used to support research in the future and may be shared with other researchers for this purpose.

University College London (UCL), where the research team is working and where the study is being conducted, is in charge of (controlling) your data. There is a responsible data protection ad research governance officer who makes sure everything is done according to the rules. This means they might check some of our study documents. We follow both the rules described above, but also the general data protection rules. If you would like to learn more about how your personal data will be protected, please visit this webpage where you can read UCL General Privacy Notice for Participants and Researchers in Health and Care Research Studies.

If you have any questions, you can ask the research team or contact the data protection team at UCL by sending an email to data-protection@ucl.ac.uk.

What other information about me will be accessed by the research team?

If you agree to this, we may ask for information from your clinical records that are being held at the service where you are doing therapy. This can include, for instance, your NHS number or information about your mental health problem.

What will happen to the results of the study?

It may take some time to analyse the data we collect in this project. Once the project is finished, we will happily tell you what we have learnt if you are interested in this. A report will be written about the results of the study. In that report, no one could identify you. In other words, we can guarantee that information about you will be kept private and confidential because we talk about groups not individuals. We can share this report with you if you would like.

Will I be contacted again?

It is possible that our research project leads to the development of new studies. If you would like to be contacted by the research team for future studies, you can agree to this on the consent form.

Who has reviewed the study?

All research in the NHS is looked at by an independent group of people, called a Research Ethics Committee, to protect you. This study has been reviewed and given favourable opinion by the North of Scotland (1) Research Ethics Committee (reference number 23/NS/0064).

How have young people been involved in this study?

Young people have provided consultation to the research project by reviewing materials, planning how to present the questionnaires, and making adaptations to the questionnaire pack.

Who is organising and funding the study?

Doctoral trainees at the Department of Clinical, Educational and Health Psychology at University College London (UCL) have set up the project. Professor Peter Fonagy and Dr Tobias Nolte are supervising the research. The research is being funded by UCL (Prof Peter Fonagy) and it is an educational project.

What if something goes wrong?

If you have any worries about how this study is being run, you should ask to speak to the researcher who will do their best to answer your questions.

If you would like to contact someone outside the team you can do this through the Research Governance Sponsor, UCL. You can write to Joint UCLH/UCL Biomedical Research Centre, Research & Development, Maple House 1st Floor, 149 Tottenham Court Road, London, W1T 7DN quoting reference 158229. All communication will be in confidence.

If something does go wrong and you are harmed then you may have grounds for a legal action for compensation against UCL.

If you would like to contact Cambridgeshire and Peterborough Patient Advice and Liaison Services (PALS), they can be contacted either by calling 0800 376 0775, via email PALS@cpft.nhs.uk, or in writing to:

Patient Advice and Liaison Service,
Elizabeth House,
Fulbourn,
Cambridge
CB21 5EF

Thank you for reading.

Our contact details are:

Sally Bell, Shannon Potter and Susie Taplin are researchers on the project. If you have any questions about the project, you can contact them on:

Dr Tobias Nolte is a supervisor on the project. If you have any concerns you wish to discuss, you can contact him on:

Appendix E

Participant Consent Form Example

Exploring how epistemic trust and mentalizing are related to trauma, psychopathology, and perceptions of helping relationships in adolescents.

CONSENT FORM FOR YOUNG PEOPLE AGED 16-18

Chief investigator: Prof Peter Fonagy

Please put your initials in the box to show that you agree	
1. I confirm that I have read the information sheet dated 13.03.2023 (version V1.0) for the above study. I have had the opportunity to consider the information, ask questions and have had these answered satisfactorily.	
2. I understand that my participation is voluntary and that I am free to withdraw at any time without giving any reason, without my medical care or legal rights being affected.	
3. I understand that information collected will be treated as strictly confidential and handled in accordance with the provisions of the UK General Data Protection Regulation 2018.	
4. I understand that some documents from the study may be looked at by responsible people appointed by UCL, who must make sure (as Research Governance sponsor) that the study is being run properly. I give permission for this group to have access to the necessary information.	

5. I agree that the research team can tell my CAMHS therapist/keyworker (clinician) that I am participating in this study, including for the purpose of involving them in the study, and I understand that my participation will not affect the clinical care provided to me.		
6. I agree that the information collected about me may be used to support other research in the future and may be shared anonymously with other researchers.		
7. I agree to take part in Part One of the above study, which involves completing questionnaires.		
Please put your initials into the Yes or No box depending on your preference	**Y**	**N**
8. I agree that the research project named above can request information from my clinical records held at the support service that referred me to this research project.		
9. I agree that someone from the research study can contact me in the future about participating in other research, via email/telephone.		
10. I would like to receive an email copy of the research findings once they are published.		
11. If I am invited, I agree to take part in Part Two of the above study, which involves conversation sessions, and for these conversation sessions to be audio recorded for the purpose of transcription and analysis, and for anonymous quotes to be used in reports of this project.		

Name of participant	Date	Signature
Name of researcher taking consent	Date	Signature

Our contact details are:

If you have any questions about the Part One of the project (questionnaires)project, you can contact the researchers, Sally Bell and Shannon Potter, on:

If you have any questions about Part Two of the project (conversation session), you can contact the researcher, Susie Taplin and Tobias Nolte on:

Dr Tobias Nolte is a supervisor on the project. If you have any concerns you wish to discuss, you can contact him:

Appendix F

Tables and figures displaying the assumptions as discussed within the results section

Handling assumption violations in Hypothesis one regression model: adolescents' own perception of the therapeutic alliance.

Initially high multicollinearity was noted in the regression model – indicated by VIF and Tolerance levels of ET, mentalizing ability, and the interaction term between ET and mentalizing (Table F1). Additionally visual inspection of the histogram (Fig. F1) and Q-Q plot (Fig. F2) indicated a non-normal distribution of residuals, with slight tailing to the left in the histogram

After mean-centering the interaction variable in order to address high multicollinearity, VIF values were within an appropriate range, and inspection of the histogram and Q-Q plot approached a normal distribution of residuals.

Table F1

Jasp Output Displaying Collinearity Statistics for The Regression Model Before Mean-Centring the Interaction Term.

Coefficients

							Collinearity Statistics	
Model		**Unstandardized**	**Standard Error**	**Standardized[a]**	**t**	**p**	**Tolerance[a]**	**VIF[a]**
H_0	(Intercept)	39.500	1.183		33.401	< .001		
H_1	(Intercept)	72.750	64.709		1.124	0.283		
	Mistrust	-2.857	3.276	-0.321	-0.872	0.400	0.529	1.890

Credulity	0.839	2.567	0.166	0.327	0.749	0.285	3.513
Trust	-5.685	20.105	-0.808	-0.283	0.782	0.010	95.750
Total_RFQY	-3.483	8.960	-0.596	-0.389	0.704	0.031	32.005
BPFSC	0.083	0.197	0.202	0.420	0.682	0.246	4.069
interaction_trust_rfqy	0.674	2.368	0.997	0.285	0.781	0.007	146.214
Gender (Male)	-3.474	3.580		-0.971	0.351		
Gender (SI)	-6.850	5.562		-1.231	0.242		
Ethnicity (Black)	5.456	4.960		1.100	0.293		
Ethnicity (Mixed_ethnicity)	3.886	6.695		0.580	0.572		
Ethnicity (White)	4.099	4.267		0.960	0.356		

[a] Standardized coefficients and collinearity statistics can only be computed for continuous predictors.

Figure F1

Histogram Displaying the Distribution of Residuals for Hypothesis One Before Mean Centring

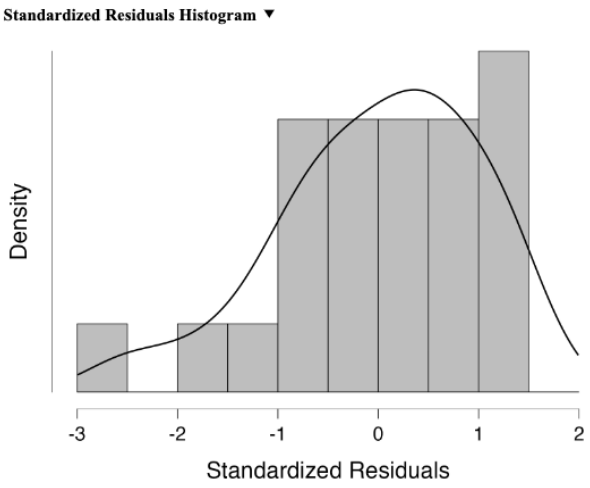


Figure F2

Q-Q Plot Displaying The Distribution Of Residuals for Hypothesis One Regression Model Before Mean Centring

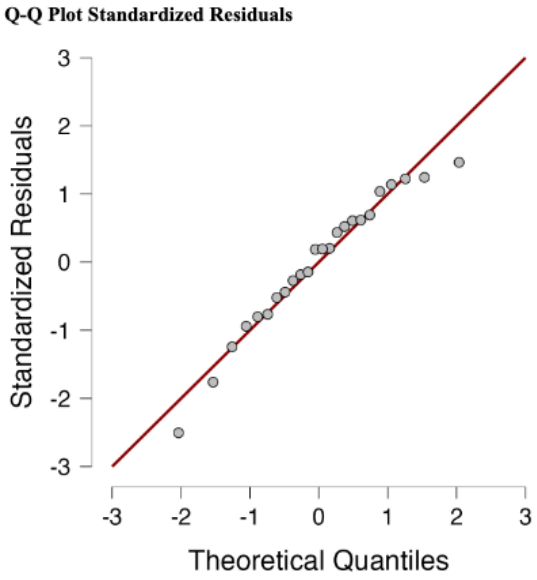


Table F2

Jasp Output Displaying Collinearity Statistics for the Regression Model After Mean-Centring The Interaction Term

Coefficients

Model		Unstandardized	Standard Error	Standardized[a]	t	p	Collinearity Statistics	
							Tolerance[a]	VIF[a]
H_0	(Intercept)	39.500	1.183		33.401	< .001		
H_1	(Intercept)	-5.113	83.540		-0.061	0.952		
	Mistrust	0.599	5.411	0.067	0.111	0.914	0.307	3.259
	Credulity	1.136	2.532	0.225	0.449	0.663	0.346	2.889
	Trust	-0.147	2.210	-0.021	-0.067	0.948	0.628	1.594
	mc_interaction	3.950	4.839	0.725	0.816	0.433	0.179	5.602

Total_RFQY	2.307	5.416	0.395	0.426	0.679	0.173	5.795
BPFSC	-0.006	0.246	-0.014	-0.023	0.982	0.186	5.365
Age	0.447	0.953	0.150	0.469	0.649	0.557	1.796
RCADS	0.120	0.165	0.404	0.724	0.486	0.217	4.602
Gender (Male)	-2.650	5.038		-0.526	0.610		
Gender (SI)	-5.219	6.446		-0.810	0.437		
Ethnicity (Black)	5.923	5.666		1.045	0.321		
Ethnicity (Mixed_ethnicity)	0.836	7.943		0.105	0.918		
Ethnicity (White)	3.274	4.836		0.677	0.514		

[a] Standardized coefficients and collinearity statistics can only be computed for continuous predictors.

Figure F3

Histogram plot displaying the distribution of residuals for Hypothesis 1 regression model after mean-centring

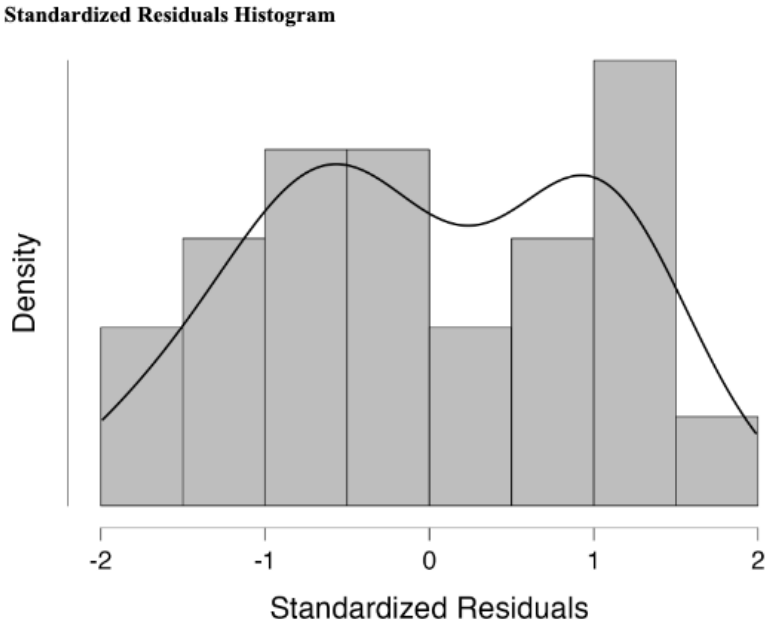
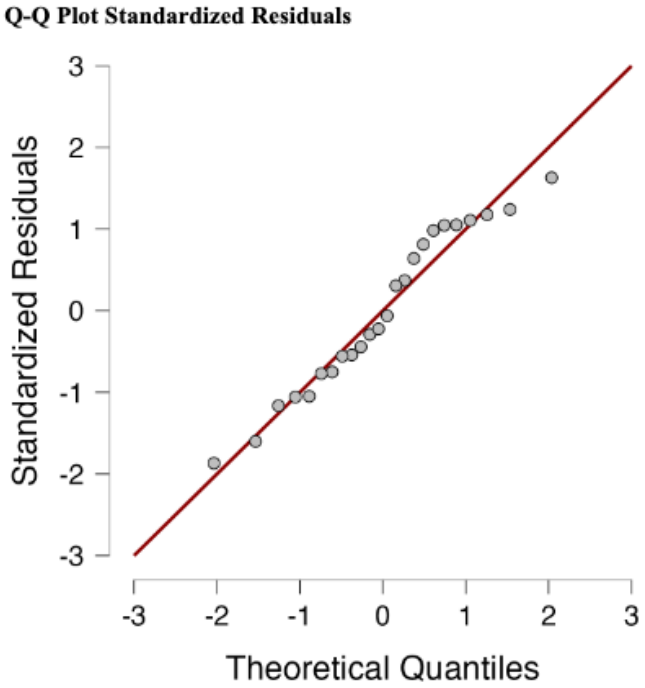


Figure F4

Histogram plot displaying the distribution of residuals for Hypothesis 1 regression model after mean-centring



Handling assumption violations in Hypothesis two regression model: Adolescent rating of the therapeutic alliance from their therapists' perspective

Before the box-cox transformation, visual inspection of the histogram indicated non-normality, with tailing to the left (Figure F5). Further visual inspection of the normal Q-Q plot indicated a bow-shaped pattern of deviations away from the diagonal suggesting that the residuals had excessive skewness (Figure F6). The scatterplot also showed that the data was heteroscedastic. (Figure F7).

Following a box-cox transformation, linearity was improved based on inspection of the scatterplot (Figure F8), and the histogram (Figure F9) and normal Q-Q plot (Figure F10) showed that residuals approached a normal distribution.

Figure F5

Histogram Displaying the Distribution of Residuals for Hypothesis Two Regression Model Before a Box-Cox Transformation

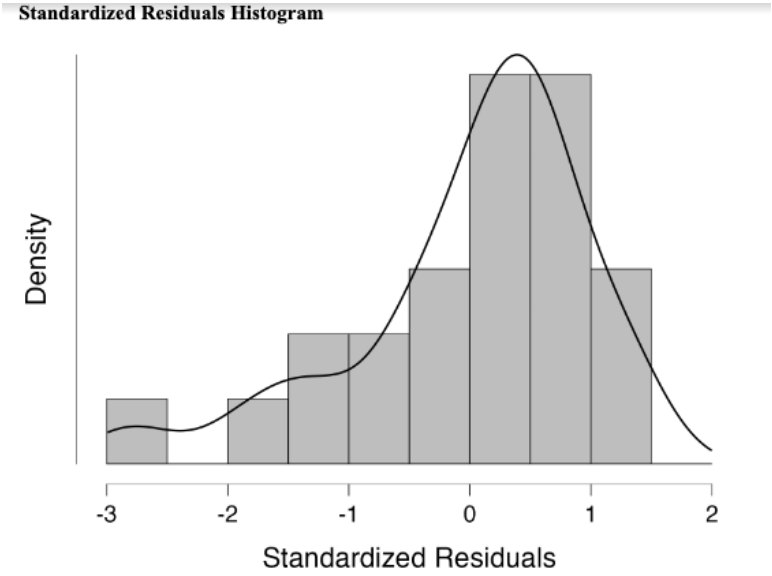


Figure F6

Q-Q Plot Displaying the Distribution of Residuals for Hypothesis Two Regression Model Before a Box-Cox Transformation

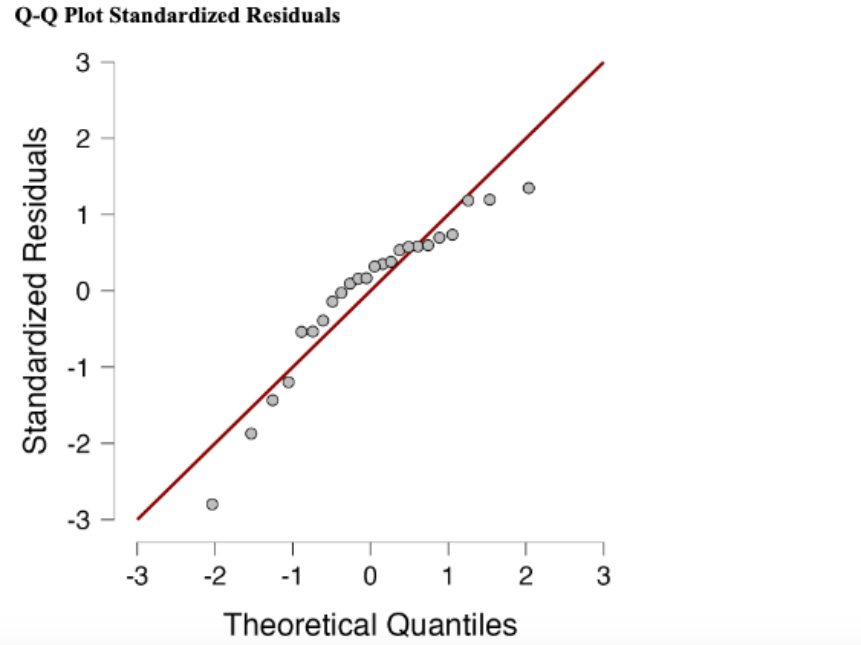


Figure F7

Scatterplot Displaying the Distribution of Residuals vs Predicted Values for Hypothesis Two Regression Model Before a Box-Cox Transformation

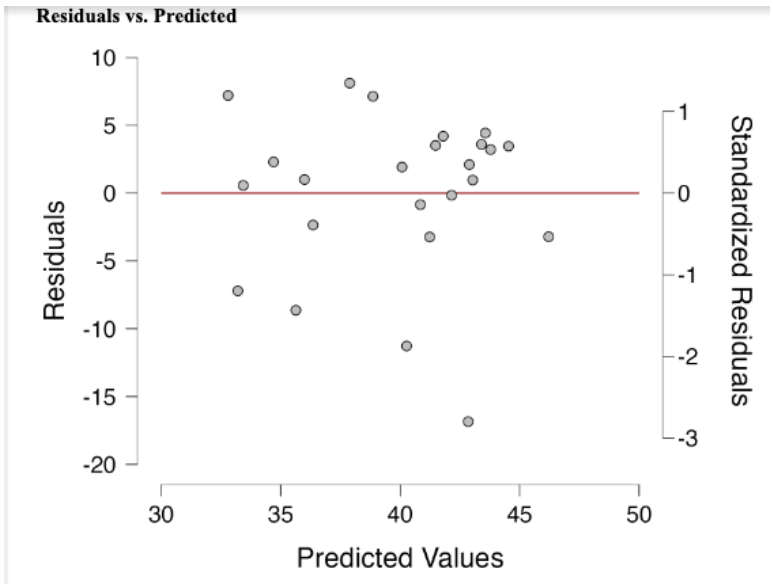


Figure F8

Scatter Plot Displaying the Distribution of Residuals vs Predicted Values for Hypothesis Two Regression Model After a Box-Cox Transformation

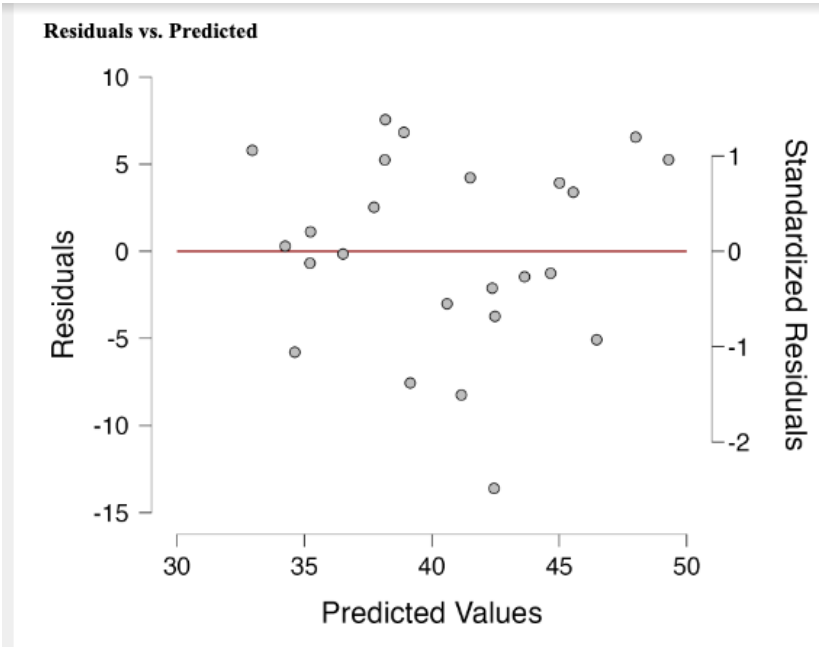


Figure F9

Q-Q Plot Displaying the Distribution of Residuals for Hypothesis Two Regression Model After a Box-Cox Transformation

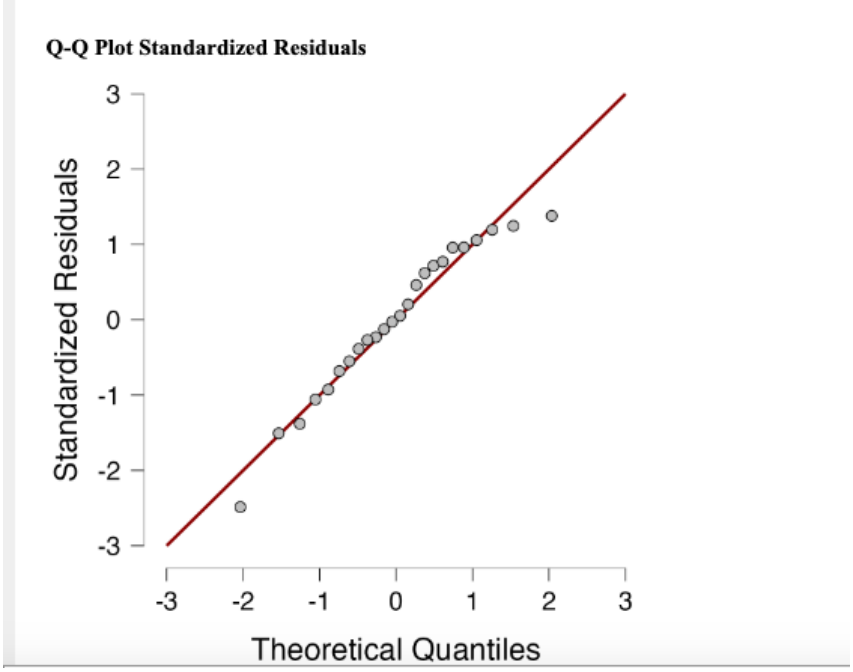
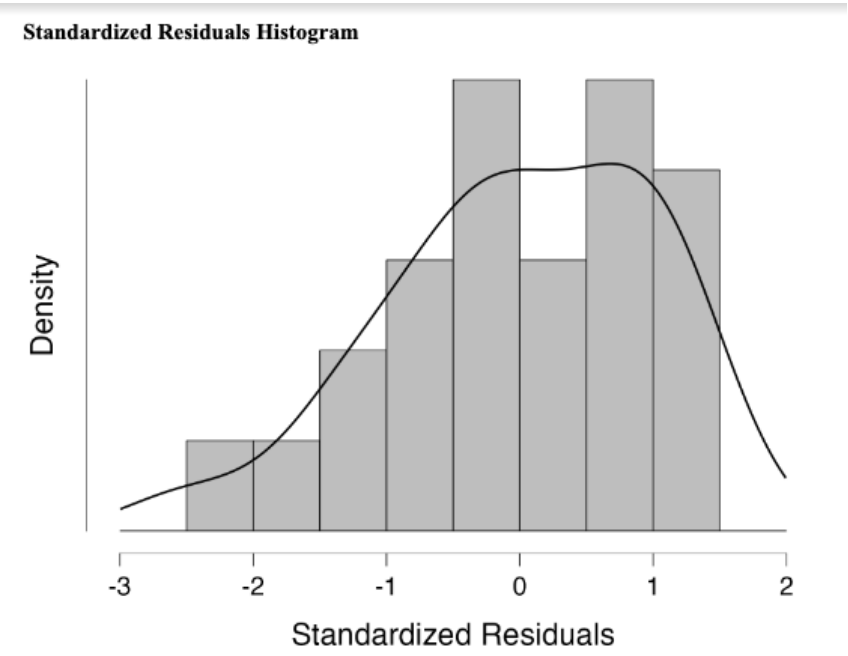


Figure F10

Histogram Displaying the Distribution of Residuals for Hypothesis Two Regression Model After a Box-Cox Transformation



Handling assumption violations in hypothesis three regression model: therapists' own rating of the therapeutic alliance

The histogram (Figure F11) and Q-Q plot (Figure F12) and residuals vs predicted scatterplot (Figure 13) for the multiple regression analysis for hypothesis three are below. Based on visual inspection of these figures it was felt that the distribution of residuals was acceptable, and no adjustment was made.

Figure F11

Histogram Displaying the Distribution of Residuals for Hypothesis Three Regression Model

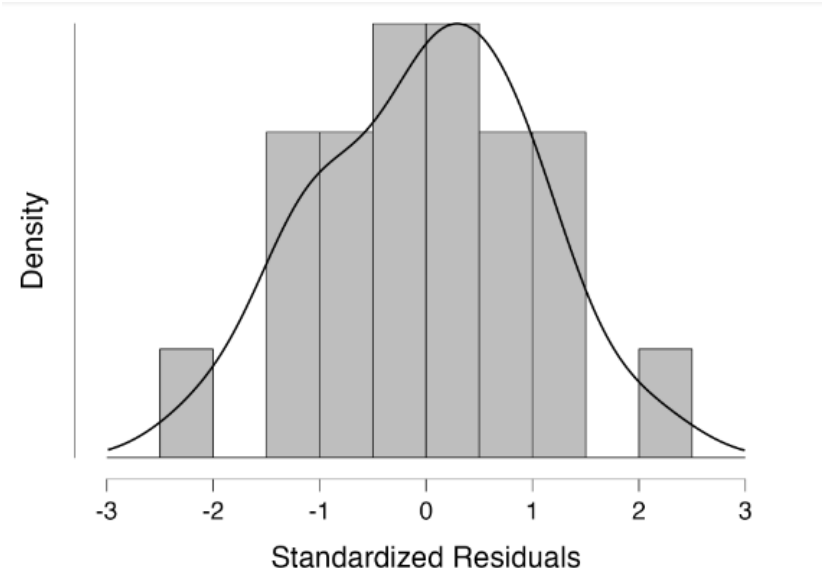


Figure F12

Q-Q Plot Displaying the Distribution of Residuals for Hypothesis Three Regression Model

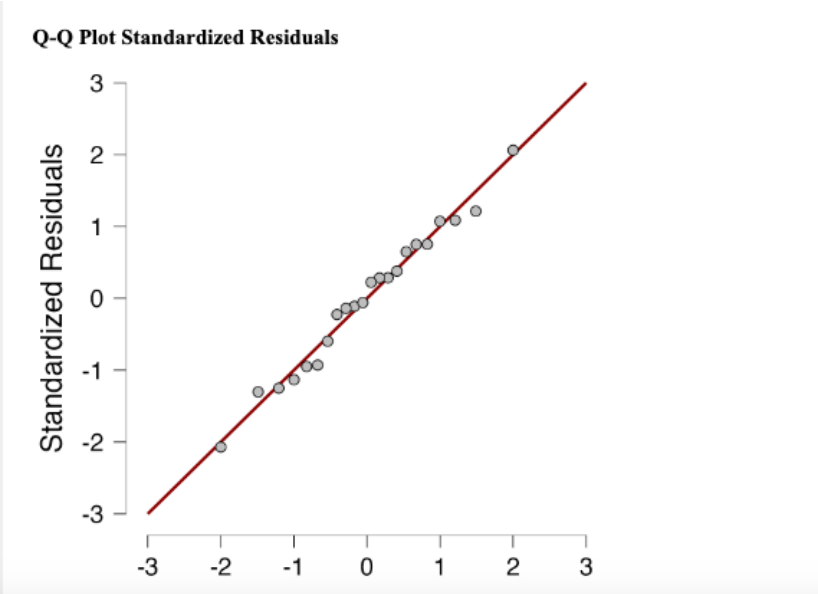
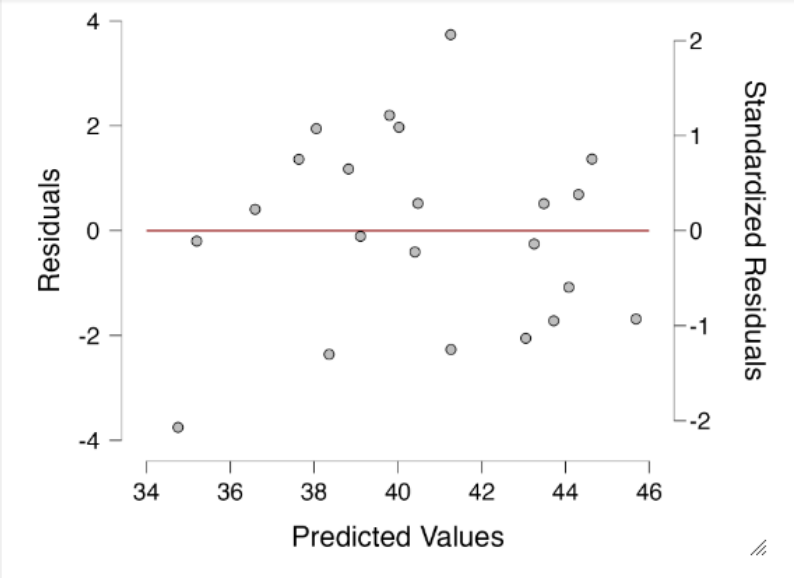


Figure F13

Scatter Plot Displaying the Distribution of Residuals vs Predicted Values for Hypothesis Three Regression Model



Checking assumptions in hypothesis four regression model*: *the difference between therapists' own rating of the alliance, and adolescents' perspective taking rating of the alliance

Visual inspection of the histogram for the multivariable regression model indicated some non-normality, with tailing to the left (Figure F14).

Figure F14

Histogram Displaying the Distribution of Residuals for Hypothesis Four Regression Model

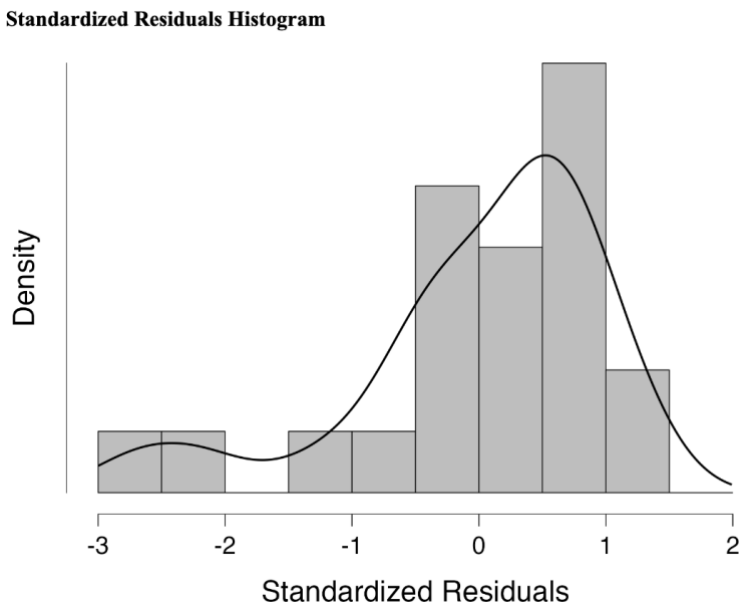
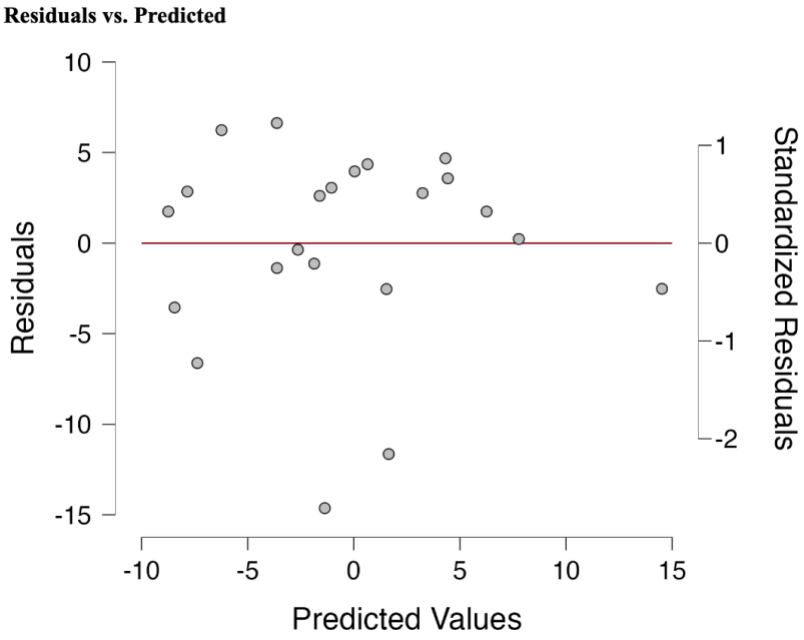


Figure F15
Scatterplot Displaying the Distribution of Residuals vs Predicted Values for Hypothesis Four Regression Model



Checking assumptions in hypothesis five regression model: the difference between therapists' own rating of the alliance, and adolescents' own rating of the alliance

Figure F16
Histogram Displaying the Distribution of Residuals for Hypothesis Five Regression Model

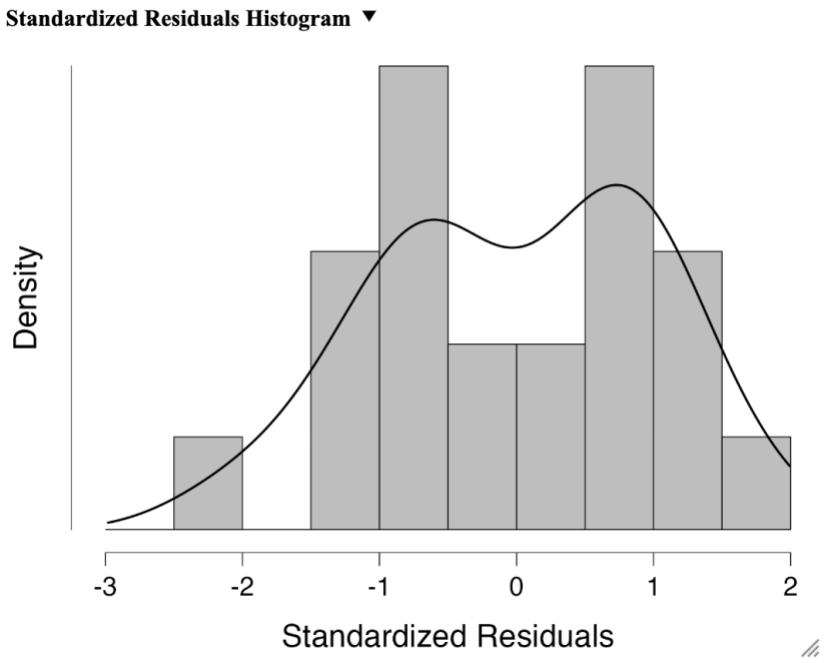


Figure F17
Q-Q Plot Displaying the Distribution of Residuals for Hypothesis Five Regression Model