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REVIEW ARTICLE

# Mapping evidence from systematic reviews regarding adult attachment and mental health difficulties: a scoping review

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**Objective.** The aim of this scoping review was to map evidence gathered through systematic reviews regarding adult attachment and mental health difficulties. This review highlights established, emerging, and inconsistent findings, suggesting areas for future research, and implications for theory and practice.

**Methods.** A systematic search for meta-analyses and systematic reviews measuring adult attachment and concerning mental health difficulties was conducted. In total, 17 studies met the selection criteria.

**Results.** Findings were presented according to four identified themes, (1) measurement of attachment; (2) measurement of mental health difficulty; (3) intrapersonal processes related to attachment and mental health difficulties; and (4) interpersonal processes related to attachment and mental health difficulties.

**Conclusions.** This review highlights the connection between attachment style and mental health difficulties, and suggests that relationships can facilitate both mental health and illheath. However, the mechanisms through which insecure attachment confers risk for mental health difficulties require further research.

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**Key words:** Attachment theory, mental health, scoping review.

The aim of the present scoping review is to map the existing meta-analytic and systematic review literature regarding adult attachment and mental health difficulties (MHDs). This review will include meta-analyses and systematic reviews as they are considered to offer good evidence, synthesizing a large body of data and assessing for quality of primary studies in this area. While the review does not offer a comprehensive map of all primary studies, it offers a broad enquiry into the state of research regarding adult attachment and MHD, identifying established, suggestive, or inconsistent findings and highlighting implications and future directions. In order to contextualize findings, a brief review of attachment theory and measurement across the lifespan will be presented.

### *Overview of attachment theory*

Attachment theory developed from Bowlby's (1982 [1969]) observations of children who were separated from their caregivers. In attachment theory, he proposed that all humans are born with an innate psychobiological attachment system that motivates to seek proximity to, or availability of, a caregiver. The availability of the caregiver to meet the child's needs for care and safety during times of danger contributes to their survival, in line with evolutionary theory.

When the child's attachment behaviours are met appropriately they develop a stable and trusting attachment to their caregiver, and begin to use them as a 'safe base' from which to explore their world. Over time the child develops positive mental representations of themselves and of others based on these early experiences (Bowlby, 1982[1969]). However, when the caregiver is often or consistently unavailable to witness, tolerate, understand, and appropriately respond to the child's attachment behaviours, the child does not experience relief from their distress, develops behaviour patterns to keep the caregiver as available as possible, developing an insecure attachment style, characterized by negative views of the self and/or others (Bowlby, 1982[1969]).

These internal working models and relationship styles are proposed to continue throughout the lifespan. Insecure attachment is theorized to reduce resilience when coping with threatening experiences, and to predispose an individual to psychological difficulties in times of crisis (Bowlby, 1982[1969]; Mikulincer & Shaver, 2012).

### *Attachment measurement and classification in infants*

Mary Ainsworth developed the Strange Situation (SS), an observational procedure to evaluate the early

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relations between infant and parent, based on the child's reactions to their parent leaving and returning (Ainsworth *et al*. 1978). From this Ainsworth *et al*. (1978) identified behaviours they suggested indicated a 'Secure' attachment, and anxious 'Avoidant' insecure attachment, and an anxious 'Ambivalent/Resistant' insecure attachment. See Table 1 for an outline of the infant behaviours of each style, and parenting style thought to contribute to the development of this style.

However, not all behaviour fit these three attachment categories. Of particular note, were behaviours such as freezing, rocking, and both approaching and avoiding the caregiver. This led to a fourth classification of 'Disorganized/Disorientated' proposed by Mary Main, a graduate student of Ainsworth (Main & Solomon, 1990). These behaviours are often related to maltreatment and trauma. This observation also led to the development of Crittenden's (1997) Dynamic Maturational Model (DMM), discussed later. Evidence has supported the theoretical position that differences in attachment style are related to the caregiving style and environment (van IJzendoorn, 1995).

In later childhood insecure attachment is associated with MHD. Moderate associations have been identified between insecure attachment and externalizing behaviours (Fearon *et al*. 2010), and anxiety (Colonnesi et al. 2011).

### *Attachment measurement and classification in adults*

There is evidence that attachment styles are relatively stable from infancy to young adulthood (Pinquart *et al*. 2013). The measurement of attachment in adults has developed in two traditions. The first was as an extension of the SS, the Adult Attachment Interview (AAI; George *et al*. 1985). The AAI is an hour long interview, during which participants are asked about their childhood experiences with their primary caregivers, and about memories of loss, separation, rejection, and trauma (George *et al*. 1985). Coders then rate the participants' discourse according to the way in which they respond, reflecting their state of mind and coherence of discourse.

Discourse classified as Secure-Autonomous (F) shows flexibility and coherence in evaluating childhood experiences of either adverse or supportive nature. Those classified with Dismissing (Ds) insecure attachment styles tend to idolize, derogate, and/or normalize experiences with caregivers and have difficulty remembering early experiences (Main & Goldwyn, 1998). Those with Preoccupied (E) attachment styles tend to become overwhelmed by recalling often vivid childhood experiences that are described with anger/or passivity. Transcripts are also coded for unresolved trauma and loss when discourse becomes disorganized. If individuals score at or above the midpoint of an unresolved scale, their attachment category is Unresolved (U). When both Ds and E styles are observed during the interview, discourse is classified as Cannot Classify (Hesse, 1996). Classification based on the AAI has been found to predict interviewee's attachment styles with their children, as measured by the SS, suggesting construct validity (Cohn *et al*. 1992; van IJzendoorn, 1995). Additionally, Sagi *et al*. (1994) found that the classifications on the AAI were not found to be associated with non-attachment-related memory and intelligence abilities, also suggesting construct validity.

The self-report tradition was developed soon after the AAI, and assesses current relationship styles thought to be influenced by internal working models, developed from the individual's attachment history (Hazan & Shaver, 1987). These are considered to measure two independent dimensions, attachment-related anxiety and avoidance (Hazan & Shaver, 1987). Attachment anxiety suggests the levels of worry that a partner will not be responsive in times of need. Avoidance indicates the level of distrust, and tendency towards independence, self-reliance and emotional distance (Hazan & Shaver, 1987). Given positioning on each dimension, the individual can be classified

**Table 1.** *Initial attachment styles of the Strange Situation (Ainsworth* ***et al****. 1978)*

| Attachment style | Infant's BEHAVIOURS | Associated parenting style |
|---|---|---|
| Secure | Child plays freely when the parent is present, is upset when the parent leaves, but pleased when they return | Attachment figure generally available to the child and meets emotional needs enough of the time |
| Insecure: avoidant | Child avoids or ignores the caregiver when they return. Shows little emotion and exploration. Considered a mask for distress [later supported by heart rate studies (Sroufe & Waters, 1977)] | Attachment figure may disapprove of closeness and expressions of need or vulnerability |
| Insecure: ambivalent | Child shows high levels of distress and is difficult to sooth on the caregiver's return, showing signs of resentment or helplessness | Attachment figure is likely inconsistently responsive to child's attachment behaviours |

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as either Secure, or one of three insecure styles, Preoccupied, Dismissive, and Fearful. These classifications correspond with the individual's working models of the self and other (Bartholomew & Horowitz, 1991). See Fig. 1 for representation of these attachment styles.

The self-report and interview measures are considered to measure relatively separate aspects of attachment, that is current relationship styles and state of mind with respect to early attachment experiences, respectively. However, they do share some measureable overlap. Associations have been identified between the measures in the areas of comfort depending on attachment figures and comfort acting as an attachment figure for others (Shaver *et al*. 2000).

Furthermore, research has demonstrated that insecure attachment is often passed down from parent to child, termed the inter-generational transmission of attachment. Parental sensitivity was originally theorized to be the main mechanism for this. However, there has been insufficient evidence to support this model (van IJzendoorn, 1995). An ecological model that considered wider factors related to later attachment experiences, the social context, and individual differences has since been proposed (van IJzendoorn & Bakermans-Kranenburg, 1997). Considering attachment as a triadic rather than dyadic process (among two caregivers and a child, where appropriate), the role of the extended family or social network, the wider macro system, and biological correlates have been suggested as areas for future research regarding the transmission gap (Sette *et al*. 2015).

### *Further developments of attachment theory: the DMM*

Crittenden (1997) developed the DDM that expands on original attachment theory, growing from her observations of infants in the SS who did not fit the original three categories. While Main described their behaviour as Disorganized, Crittenden (1997) proposed that all attachment behaviours are functional self-protective strategies developed through interaction with caregivers. The DMM expands on Bowlby's (1982 [1969]) theory that infants may adaptively exclude information in certain environments, and may continue with this style of information processing later in life, which may then become maladaptive given the change in context. Crittenden (1997) suggests that infants classified as Avoidant in the SS, likely cut off affective information, while those classified as Ambivalent cut off cognitive information. Based on these patterns of behaviours the DDM identifies further insecure attachment style subtypes that develop as the infant matures into adulthood. These are considered dimensional rather than categorical concepts, with a balanced style in the middle (Crittenden, 1997). There has been little empirical testing of the later developments of the

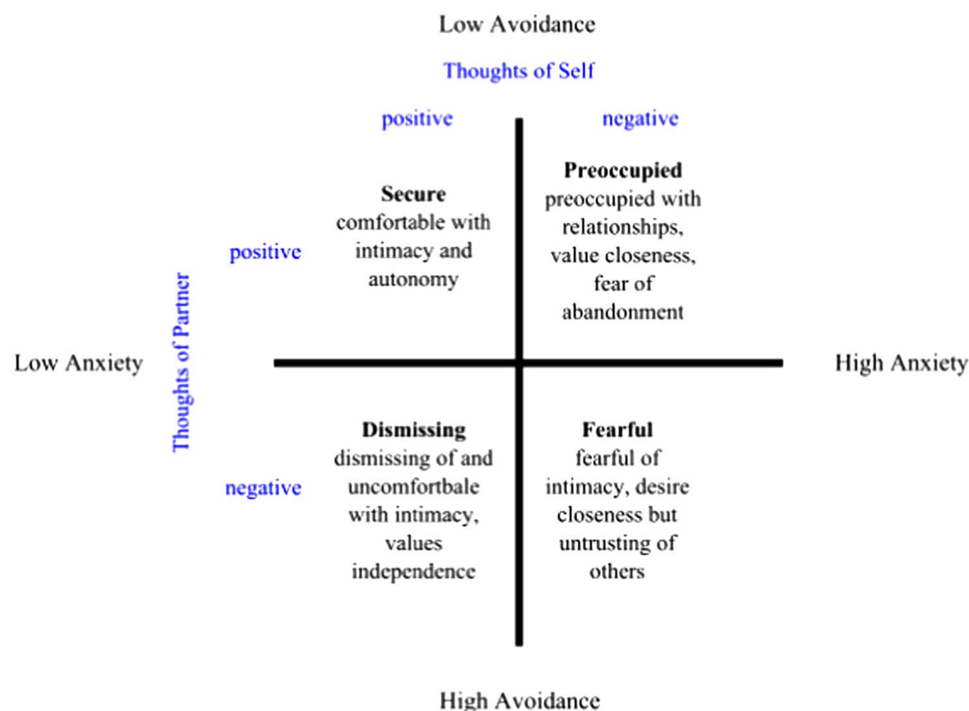


**Fig. 1.** Adult attachment styles according to the two dimensions, avoidance and anxiety, and the corresponding internal working models of self and others (Bartholomew & Horowitz, 1991).

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model that apply to adolescents and adults (Landa & Duschinsky, 2013).

### *Review aim*

Attachment theory has contributed to a vast amount of research and has emphasized the importance of social connection in human development across the lifespan. In line with the original theory, a large body of research has explored attachment and its connection to mental health. In order to offer a broad enquiry into the state of this research, the present scoping review will identify and discuss relevant systematic reviews, highlight strengths and weaknesses in the evidence base, and offer suggestions regarding research, theory, and practical applications.

## Method

This review followed guidelines by Levac *et al*. (2010). This involved five stages including, (1) identifying the research question, (2) identifying relevant studies, (3) study selection, (4) charting the data, and (5) collating, summarizing, and reporting results. Through content analysis, themes were identified and findings are discussed regarding each theme.

### *Search strategy*

The study took place between September and December 2015. A systematic search of PsycInfo and Pubmed databases was carried out on 28 November 2015 to identify systematic reviews and meta-analyses regarding attachment and MHDs in an adult population. The search terms were 'Attachment' and 'Systematic Review or Meta-Analysis'. The search was not limited by any mental health keywords in order to avoid missing relevant studies. In total, 348 articles were identified. Titles and abstracts were screened. In all, 24 full text articles were assessed and of these, 20 were identified for the review.

### *Study selection*

Studies were selected if they were an English language published systematic review or meta-analysis that reviewed studies using an established measure of adult attachment in the contexts of MHDs and related processes.

### *Quality check framework*

There are mixed views regarding the need to appraise study quality in scoping reviews (Arksey and O'Malley, 2005; Levac *et al*. 2010). By their nature systematic reviews and meta-analyses generally select high-quality studies to synthesize. However, to ensure a basic level of quality appraisal in this review, Dixon-Woods *et al*.'s (2006) 'fatal flaws' criteria were applied. This criteria asks: Are the aims and objectives of the research clearly stated? Is the research design clearly specified and appropriate for the aims and objectives of the research? Do the researchers display enough data to support their interpretations and conclusions? Do the researchers provide a clear account of the process by which their findings were produced? Is the method of analysis appropriate and adequately explicated? Three studies mentioned attachment in their reviews, but did not review attachment research, and so were excluded. All appropriate studies met the basic quality check appraisal. In total, 17 studies were included in the review.

### *Data extraction*

A form was developed to extract study characteristics including, authors, publication year, study design, participant characteristics, review aim, inclusion criteria, measure of attachment, aspect of mental health considered, key findings, limitations, and implications.

### *Data summary and synthesis*

The above information was then presented in Tables 2 and 3, with an accompanying narrative in the results section, grouped into relevant themes through content analysis.

## Results

The findings are presented in two tables that outline study characteristics (Table 2) and an overview of key findings, limitations, and implications (Table 3). A brief narrative regarding study characteristics accompanies Table 2

### *Study characteristics*

The level of information offered regarding sample description was varied. Age was reported for seven studies. Two studies contained a small number of adolescents (Bakermans-Kranenburg & van IJzendoorn, 2009; Gumley *et al*. 2013). Of those reporting age, the majority of participants were younger adults. Seven studies of 17 reported gender, of which all were mostly female (67–73.5%). One study on psychosis consisted mostly of males (71.9%; Gumley *et al*. 2013). Four reported country, with most participants from North America. Number of primary studies ranged from 3 to 200. All studies reported clear aims and inclusion criteria.

### *Key findings, limitations, and implications*

The accompanying narrative for Table 3 presents these findings in light of the four themes, (1) measurement of attachment; (2) measurement of MHD; (3) intrapersonal

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**Table 2.** *Characteristics of 17 included studies*

| | | Sample characteristics | | | | | Review characteristics | | |
|---|---|---|---|---|---|---|---|---|---|
| | Author (year) Design | K N | Mean age | Gender % Female | Sample description and country | Review aim | Inclusion criteria | Attachment measure | Aspect of mental health considered |
| 1 | Van Ijzendoorn & Bakermans-Kranenburg<br>(1996)<br>M-A | K = 33<br>(2000 AAI classifications) | NR | NR | *Sample*<br>Community mothers ($n$ = 584)<br>Community fathers ($n$ = 286)<br>Clinical samples ($n$ = 439)<br>Adolescents and young adults ($n$ = 225)<br>Low SES ($n$ = 411)<br>Kibbutz sample ($n$ = 45)<br><br>*Country*<br>Australia<br>Canada<br>United Kingdom<br>United States<br>the Netherlands | To identify distributions of AAI among clinical and non-clinical groups, across gender, age, and socio-economic status | All published empirical studies using AAI and original coding system (Main *et al.* 2003)<br>Excluding studies using Q-sort processing of interview material, and semi-projective or paper and pencil measures | *Interview and coding measure*<br>AAI (F, Ds, E, U/CC classifications) | Oppositional disorder<br>Failure to thrive<br>Conduct Disorder<br>Sleep disorder<br>Psychiatrically hospitalized<br>Child abuse or neglect<br>Depression dysthymia<br>Borderline personality disorder<br>Other DSM-III personality disorder<br>Parents of children w/problems<br>Young adults with problems<br>Maltreating mothers, maltreating fathers |
| 2 | Bakermans-Kranenburg & van IJzendoorn<br>(2009)<br>M = A | K = 200<br>(10 500 AAI classifications) | Adult and adolescent | Insufficient information | *Sample*<br>Non-clinical mothers<br>Non-clinical fathers<br>Non-clinical adolescents<br>College students<br>At risk (single low SES mothers, adolescent mothers, Holocaust survivors)<br>Clinical samples<br>Other samples<br><br>*Country*<br>North American ($n$ = 119)<br>Europe ($n$ = 69)<br>Asia ($n$ = 13)<br>Australia ($n$ = 2) | To evaluation the distribution of AAI classifications among community and clinical samples, including all AAI data up to September 2008 | All published empirical studies using AAI and original coding system (Main *et al.* 2003)<br>Excluding studies using Q-sort processing of interview material, and semi-projective or paper and pencil measures | *Interview and coding measure*<br>AAI (F, Ds, E, U/CC classifications) | *Clinical sample*<br>Depression ($N$ = 4)<br>Postnatal depression ($N$ = 2)<br>Bipolar affective disorder ($N$ = 1)<br>Schizoaffective disorder ($N$ = 1)<br>Anxiety disorder ($N$ = 1)<br>Suicidal ($N$ = 2)<br>Borderline ($N$ = 5)<br>Conduct disorder ($N$ = 2)<br>Criminal offenses ($N$ = 5)<br>Antisocial ($N$ = 2)<br>Munchhausen proxy ($N$ = 1)<br>Marital violence ($N$ = 2)<br>Abusive mothers ($N$ = 1)<br>Abusive fathers ($N$ = 1)<br>Anorexia nervosa ($N$ = 1)<br>Anorexia bulimia ($N$ = 2)<br>ED ($N$ = 1)<br>Drug addicted ($N$ = 2)<br>Somatoform ($N$ = 1)<br>PTSD ($N$ = 3)<br>Abused ($N$ = 6)<br>Mixed ($N$ = 11)<br>Couples therapy ($N$ = 2) |

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**Table 2:** (*Continued*)

| | | Sample characteristics | | | | | Review characteristics | | |
|---|---|---|---|---|---|---|---|---|---|
| | Author (year) Design | K N | Mean age | Gender % Female | Sample description and country | Review aim | Inclusion criteria | Attachment measure | Aspect of mental health considered |
| 3 | Smith, Msetfi & Golding<br>(2010)<br>SR | K = 18<br>$N$ = 1118 | NR | Predominantly female | *Sample*<br>Outpatient<br>Inpatient<br>Student counselling<br>Family therapy<br><br>*Country*<br>United States ($N$ = 11)<br>United Kingdom ($N$ = 2)<br>Sweden ($N$ = 1)<br>Canada ($N$ = 1)<br>Portugal ($N$ = 1)<br>Columbia ($N$ = 1)<br>Australia ($N$ = 1) | To examine the relationships between client self-reported attachment patterns and therapeutic alliance | English language<br>Participants had received or were due to receive psychological therapy<br>Included a measure of self-rated adult attachment style and measure of therapeutic alliance<br>Quantifiable relationship between attachment and alliance | *Self-report*<br>RSQ ($N$ = 3)<br>ECRS ($N$ = 4)<br>CATS ($N$ = 4)<br>AAS ($N$ = 3)<br>ASQ ($N$ = 1)<br>RQ ($N$ = 3)<br>AAI[2] ($N$ = 1) | Burnout<br>Depression<br>ED<br>Binge eating<br>Mixture of mood, anxiety, and personality disorder Drug misuse |
| 4 | Zachrisson & Skarderud<br>(2010)<br>SR | K = 9<br>$N$ = 233 | NR | NR | Young females meeting the criteria for EDNOS and engagement in self-harm | To provide an update on theoretical and empirical developments in the field of attachment and ED | English language<br>Published journal article of book<br>Addressing functional or aetiological aspects of ED<br>Addressing attachment in the Bowlby tradition | *Interview and coding*<br>AAI (F, Ds, E, U classifications) | Unspecified ED ($N$ = 2; $n$ = 26)<br>ED not otherwise specified ($N$ = 1, $n$ = 2)<br>Unspecified ED and depression ($N$ = 1, $n$ = 19)<br>Anorexia nervosa ($N$ = 2; $n$ = 17)<br>Anorexia nervosa-restricting ($N$ = 5; $n$ = 57)<br>Anorexia nervosa-bulimia ($N$ = 5; $n$ = 56)<br>Binge ED ($N$ = 1; $n$ = 10) |
| 5 | Levy *et al.*<br>(2011)<br>M-A | K = 14<br>$N$ = 1467 | $R$ = 28.48–45.98<br>$M$ = 37.4,<br>s.d. = 5.7 | $R$ = 0–100<br>$M$ = 72.8<br>s.d. = 30.3 | *Sample*<br>MDD ($N$ = 5)<br>IPV ($N$ = 2)<br>BPD ($N$ = 3)<br>Unspecified ($N$ = 2)<br>PTSD ($N$ = 3)<br>PD ($N$ = 2)<br>BED ($N$ = 2)<br><br>*Country*<br>NR | To clarify the relationship between clients' pre-treatment attachment style and psychotherapy outcome through three meta-analyses | Published reports<br>Addressing psychotherapy outcomes in samples of treatment-seeking individuals<br>Quantifiable relationship between attachment and outcome post-therapy | *Self-report*<br>RQ ($N$ = 3)<br>AQ ($N$ = 1)<br>AAS ($N$ = 1)<br>ECR ($N$ = 4)<br>RSQ ($N$ = 3)<br>RAQ ($N$ = 1)<br>AAQ ($N$ = 1)<br>ASQ ($N$ = 2)<br><br>*Interview and coding*<br>AAPR ($N$ = 2)<br>BARS ($N$ = 1)<br>Vignettes ($N$ = 1) | *Client rated*<br>DASsatis ($N$ = 1)<br>Violence ($N$ = 1)<br>Psychological abuse ($N$ = 1)<br>SCL-90-R ($N$ = 10)<br>BDI ($N$ = 6)<br>IIP ($N$ = 1)<br>MPSS-SR ($N$ = 2)<br>TSC-40 ($N$ = 1)<br><br>*Non-treater rated*<br>GAF ($N$ = 4)<br>HAM-D ($N$ = 2)<br>HAMA ($N$ = 1)<br>HRSD ($N$ = 3)<br>EDEbinge ($N$ = 2) |

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|---|---|---|---|---|---|---|---|---|---|
| 6 | Diener & Monroe<br>(2011)<br>M-A | K = 17<br>*N* = 886 | *R* = 21.6–45.9<br>*M* = 31.5<br>S.D. = 7.6 | *M* = 73.46<br>S.D. = 15.69 | *Setting*<br>University counselling (*N* = 9)<br>Research clinic (*N* = 2)<br>Methadone clinic (*N* = 1)<br>Mixed (*N* = 2)<br>Outpatient psychiatry (*N* = 1)<br><br>*Country*<br>NR | To present an updated and sophisticated synthesis of the research relating to adult attachment styles and alliance in individual psychotherapy | English language<br>Published articles<br>Data relevant to research hypothesis<br>Quantifiable relationship between adult attachment style and therapeutic alliance in individual psychotherapy<br>Attachment measure assesses style in close relationships<br>AAI excluded as it measures a different concept<br>Measures of attachment to the therapist excluded<br>Sufficient data to calculate effect sizes | *Self-report*<br>AAS<br>AHQ<br>ECR<br>RSQ<br>RQ | *Primary diagnosis*<br>Mixed (*N* = 1)<br>Mood (*N* = 3)<br>Substance abuse (*N* = 1) |
| 7 | Selcuk *et al.*<br>(2012)<br>3 PS + M-A | K = 3<br>*N* = 322 | *R* = 20–21<br>*M* = 20.33<br>S.D. = 0.58 | *M* = 70.3<br>S.D. = 18.3 | *Setting*<br>Undergraduates (K = 2)<br>heterosexual couples (K = 1; length = 12–132 months)<br><br>*Country*<br>NR | To experimentally test the impact of mental representation of attachment figures on internally triggered negative affect. Mata-analysis of three experiments was completed due to low statistical power in primary studies, in order to increase reliability of inferences made | The authors' previous three primary experimental studies of the impact of mental representation of attachment figures on internally triggered negative affect | *Self-report*<br>ECR-R (K = 3) | *Explicit measure of affect*<br>'How bad do you feel at the moment?' 'How good do you feel at the moment?' (7-point Likert; K = 3)<br><br>*Implicit measure of affect*<br>IPANAT (K = 2)<br><br>*Measure of cognition*<br>Stream of consciousness task (K = 1)<br><br>*Measure of health problems*<br>Adapted from previous inventories (K = 1) |
| 8 | Bernecker *et al.*<br>(2014)<br>M-A | K = 24<br>*N* = 1321 | *R* = 21.6–45.2<br>*M* = 32 | 74.4 | *Setting*<br>Outpatient (mostly university settings)<br><br>*Country*<br><br>*Years*<br>1995–2012 | To conduct a meta-analysis to test the hypothesis that attachment avoidance and anxiety will related inversely to the quality of the therapeutic alliance | No restriction by language or publication type<br>Include individual therapy with adults<br>Patient self-report measure of attachment that correlates strongly with ECR<br>Patient self-report measure of alliance that correlates strongly with WAI | *Self-report*<br>ASQ (*N* = 1)<br>RSQ (*N* = 2)<br>ECR (*N* = 13)<br>AAS (*N* = 7) | Presenting problems were heterogeneous. Severe and acute difficulties were poorly represented given outpatient setting. |
| 9 | Katznelson<br>(2014)<br>SR | NR | NR | NR | NR | To outline the theory and development of the RF scale and review empirical findings that have used the RF scale in relation to parental RF and children's attachment, and adult RF and psychopathology | Peer-reviewed published studies<br>English language<br>Use of the RF scale<br>Quantitative | *Researcher rated*<br>RF | Borderline personality disorder<br>Depression<br>panic disorder<br>ED<br>Psychosis<br>Offending behaviour<br>Autism<br>Personality organization |

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**Table 2:** (*Continued*)

| | Author (year) Design | Sample characteristics: K N | Mean age | Gender % Female | Sample description and country | Review aim | Review characteristics: Inclusion criteria | Attachment measure | Aspect of mental health considered |
|---|---|---|---|---|---|---|---|---|---|
| 10 | Gumley *et al*. (2013) SR | K = 20<br>$N$ = 1453 | $R$ = 12–71<br>$M$ = 35 | 28.1 | *Setting*<br>Inpatient (K = 3)<br>Outpatient (K = 6)<br>Inpatient and outpatient (K = 4)<br>Specialist at risk service (K = 1)<br>24 hour rehab service (K = 1)<br>Not reported (K = 6)<br>*Country*<br>NR<br>*Years*<br>1980–2013 | To identify, summarize and critically evaluation studies that investigated attachment amongst individuals with psychosis | Articles in English language<br>Published between 1980 and January 2013<br>Measure of attachment<br>Participants who experience psychosis or at risk of developing psychosis | *Self-report*<br>PAM (K = 9)<br>ASQ (K = 2)<br>RQ (K = 2)<br>SAQ (K = 1)<br>AAS (K = 1)<br>AAQ (K = 1)<br>*Interview and coding*<br>AAI (K = 6) | Schizophrenia (57.6%; $n$ = 837)<br>Schizophrenia spectrum diagnosis (12%; $n$ = 174)<br>Schizoaffective disorder (10.7%; $n$ = 155)<br>Bipolar affective disorder (7%; $n$ = 101)<br>At risk mental state (2.1%; $n$ = 31)<br>Psychotic episode ($n$ = 0.9%; $n$ = 13)<br>Psychosis NOS (1%; $n$ = 14)<br>Persistent delusional disorder (0.1%; $n$ = 2)<br>Atypical psychosis (0.1%; $n$ = 2)<br>Mania + psychotic symptoms (0.1%; $n$ = 2)<br>Major depression (1.2%; $n$ = 17)<br>Substance misuse (0.2%; $n$ = 3)<br>Asperger's syndrome (0.1%; $n$ = 1)<br>Panic disorder (0.1%; $n$ = 1)<br>Conversion disorder (0.1%; $n$ = 1)<br>Symptoms associated with psychosis ($n$ = 5%; $n$ = 73) |
| 11 | Korver-Neiberg *et al*. (2014) M-A | K = 29<br>(clin = 20)<br>(com = 9)<br>$N$ = 11 340<br>(clin = 1291)<br>(com = 10 049) | NR | NR | *Setting*<br>Clinical sample with diagnoses related to psychosis from mental health service settings.<br>Non-clinical sample: community/ university settings with psychotic experiences.<br>*Country*<br>NR<br>*Years*<br>All until 2011 | To extend the review of Berry *et al*. (2006) to include recent attachment and psychosis studies from 2004 to 2011 and so evaluation the extent to which attachment theory can enhance understanding of psychosis<br>To review studies of non-clinical samples of attachment and psychotic-like experiences | *Clinical studies*<br>Peer-reviewed published studies<br>English language<br>Assessment of adult attachment<br>Diagnosis of a schizophrenia spectrum disorder or other psychotic disorder<br>*Non-clinical studies*<br>Peer-reviewed published studies<br>English language<br>Assessment of adult attachment<br>Measurement of (sub) clinical psychotic or schizotypal symptoms | *Self-report*<br>TM (3)<br>AAS (1)<br>PAM (9)<br>ASQ (2)<br>RQ (6)<br>AAS (1)<br>ECR (1)<br>SAS[1] (1)<br>*Interview and coding*<br>AAI (K = 6) | Diagnosis of a schizophrenia spectrum disorder or other psychotic disorder<br>(Sub) clinical psychotic or schizotypal symptoms |

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| 12 Caglar-NNazali *et al.* (2014) SR and M-A | K = 36<br>$N$ = 5405<br>(ED = 2358)<br>(HC = 3047) | $M$ = 24.1<br>$R$ = 13.6–36 | NR | *Setting*<br>NR<br>*Country*<br>NR<br>*Years*<br>NR | To conduct a systematic review and meta-analysis of literature related to psychopathology of ED based on the constructs within the NIMH RDoC domain of 'Systems for Social Processes' | Studies investigating a construct/sub-construct within the NIMH RDoC 'Systems for Social Processes' domain, 'Affiliation and attachment', 'Reception of Facial Communication', 'Production of Facial Communication', 'Reception of Non-Facial Communication', Production of Non-Facial Communication', 'Agency', 'Self-Evaluation', 'Animacy Perception', 'Action Perception', 'Understanding Mental States', and 'Social Dominance'<br>Include a clinical sample of people with ED diagnosed with a clinical instrument (participants with comorbidity included)<br>Including a health control comparison group who never suffered from an ED or any psychiatric condition (minimum of 15 participants per control group)<br>Report standard quantitative information based on self-report or behavioural instruments related to the construct of investigation | *Self-report*<br>ASQ (K = 4)<br>PBI (K = 25)<br>AHQ (K = 1)<br>AAS (K = 2)<br>Autobiographical narrative (K = 1)<br>DAPP (K = 2)<br>SAS[2] (K = 1)<br>RAQ (K = 1)<br>IPPA (K = 1)<br>SASI (K = 2)<br>*Interview and coding*<br>AAI (K = 1)<br>CaMir Q-sort (K = 1) | Anorexia nervosa (26 samples)<br>Bulimia nervosa (14 samples)<br>ED (eight samples)<br>Binge ED (one sample)<br>Anorexia nervosa-recovered (one sample)<br>ED-recovered (one sample) |
| 13 Tasca & Balfour (2014) SR | K = 32<br>$N$ = NR | NR | NR | *Setting*<br>NR<br>*Country*<br>NR<br>*Years*<br>2000–2014 | To provide a review of the current state of attachment research in ED, for both self-report and AAI measures in relation to the following domains: (1) prevalence of insecurity and level of RF, (2) the association between attachment insecurity and ED diagnosis or symptomology, (3) mechanisms by which attachment may affect ED, (4) associations with trauma and disorganized mental states, and (5) the impact on treatment processes and outcomes | English language<br>Empirical research with greater than six participants including adults with a diagnosis of ED between 2000–2014<br>A standard and valid self-report measure of attachment or standard coding of AAI<br>Studies that provide findings relevant to attachment related functions of (1) affect regulation, (2) interpersonal style, (3) coherence of mind, and (4) RF | *Self-report*<br>NR<br>*Interview and coding*<br>AAI | ED diagnosis |

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**Table 2:** (*Continued*)

| | Author (year) Design | Sample characteristics: K N | Mean age | Gender % Female | Sample description and country | Review aim | Review characteristics: Inclusion criteria | Attachment measure | Aspect of mental health considered |
|---|---|---|---|---|---|---|---|---|---|
| 14 | Malik *et al.* (2015) SR | K = 12<br>*N* = 2795 | *R* = 18–20 | 66.8 | *Setting*<br>College/university (*N* = 12)<br>*Country*<br>North America (*N* = 15)<br>Middle East (*N* = 1)<br>Belgium (*N* = 1)<br>Germany (*N* = 1)<br>The Netherlands (*N* = 1)<br>*Years*<br>1980–2013 | To synthesize literature on the relationships between attachment, emotion regulation, and depressive symptomology, to explore emotion regulation as mediator between insecure attachment and depressive symptoms, and specifically within types of emotion regulation and attachment styles, among adolescents and adults. | Empirical peer-reviewed study from 1980 to 2013<br>English language<br>A measure of attachment, emotion regulation or coping (excluding mindfulness) and depression symptomology | *Self-report*<br>ECR-R (K = 1)<br>ECR (K = 6)<br>RSQ (K = 1)<br>PAQ (K = 1)<br>AAS (K = 1)<br>IPPA (K = 1)<br>Other (K = 1)<br>*Interview and coding*<br>AAI (K = 1) | *Measure of depressive symptomology*<br>CES-D (K = 3)<br>IDAS (K = 1)<br>HSCL-90 (K = 2)<br>DACI (K = 1)<br>HSCL (1)<br>Idiosyncratic measure of mood (K = 1)<br>DASS (K = 1)<br>BDI (K = 2) |
| 15 | Mallinckrodt & Jeong (2014) M-A | K = 13<br>*N* = 1051 client-therapist dyads | NR | 67 | *Setting*<br>47.2% college counselling centre<br>6.5% veteran administration hospital<br>1.7% other hospital<br>14.9% university training clinic<br>5.2% independent practice<br>2.3% community agencies<br>22.2% unknown<br>*Years*<br>1995–2013 | To conduct a meta-analysis of studies that have explored associations of client attachment to therapist (by CATS) with client pretherapy attachment patterns and working alliance | English language<br>Empirical studies that used the CATS to study bona fide clients seeking help<br>A measure of client pretherapy attachment and working alliance | *Self-report*<br>CATS (K = 13)<br>ECRS<br>AAS | Help-seeking psychotherapy clients |
| 16 | Taylor *et al.* (2015) SR | K = 15<br>*N* = 732<br>*R* = 12–188 | NR | NR | *Setting*<br>Variety of therapeutic models<br>Individual (*N* = 5)<br>Group (*N* = 3)<br>Couples therapy (*N* = 2)<br>RCT method (*N* = 5)<br>*Years*<br>1997–2012 | To provide a synthesis of the studies investigating changes in adult attachment representations during psychotherapy, using two methodological traditions of interview and self-report | Published in peer-reviewed journals<br>English language<br>Used quantitative methodology<br>Results assessed differences in attachment either before or after therapy or between a treatment and comparison group post-therapy<br>Sample consisted of adults who had received some psychological therapy<br>Interview or self-report measure of attachment | *Self-report*<br>BFPE (*N* = 1)<br>ECR (*N* = 2)<br>AAS (*N* = 2)<br>ECR-R (*N* = 1)<br>ASQ (*N* = 1)<br>RSQ (*N* = 3)<br>*Interview and coding*<br>AAI (*N* = 3)<br>AAPR (*N* = 1)<br>BARS (*N* = 1) | Personality disorder (*N* = 2)<br>Major depression (*N* = 2)<br>PTSD (*N* = 2)<br>Attachment and interpersonal issues (*N* = 2)<br>Relationship issues (*N* = 1)<br>Binge ED (*N* = 1)<br>Domestic violence (*N* = 1) |

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| 17 | West<br>(2015)<br>SR | K = 10<br>n range = 62–481 | NR | Predominantly female | *Setting*<br>Variety of health and human service sectors<br>*Years*<br>2005–2013 | To identify and attempt to explain patterns and inconsistencies in results across studies that have examined the association between adult attachment style and burnout or compassion fatigue | Published in peer-reviewed journals<br>English language<br>Used quantitative methodology<br>Samples of health and human service professionals | *Self-report*<br>ASQ (*N* = 2)<br>RSQ (*N* = 1)<br>ECR (*N* = 1)<br>ECR-R (*N* = 2)<br>AAS (*N* = 1)<br>SRI (*N* = 1)<br>AAQ (*N* = 1) | *Measure of burnout/compassion fatigue*<br>MBI (*N* = 4)<br>BM (*N* = 1)<br>ProQOL:CSF-R-III (*N* = 3)<br>S-M BM (*N* = 1) |

AAI, Adult Attachment Interview; AAI[2], Adult Attachment Inventory; AAPR, Adult Attachment Prototype Rating; AAQ, Adult Attachment Questionnaire; AAS, Adult Attachment Scale; AHQ, Attachment History Questionnaire; AQ, Attachment Questionnaire; ASQ, Attachment Styles Questionnaire; BARS, Bartholomew Attachment Rating Scale; BDI, Beck Depression Inventory; BED, Binge eating disorder; BFPE, Bielefeld Partnership Expectations Questionnaire; BPD, borderline personality disorder; BM, burnout measure; CATS, Client Attachment to Therapist Scale; CC, Cannot Classify; CES-D, Centre for Epidemiological Studies Depression Scale; Clin, clinical; Com, community; DACI, Depression Adjective Checklist, Forms F and G; DAPP, Dimensional Assessment of Personality Pathology; DASS, Depression Anxiety and Stress Scales; DASsatis, Dyadic Adjustment Scale; Ds, Dismissing; E, Preoccupied; ECRS, Experiences in Close Relationships Scale; ED, eating disorder; EDEbinge, Eating disorder examination-assessment of days binged; EDNOS, eating disorder not otherwise specified; F, Secure; GAF, Global Assessment of Functioning; HAM-D, 6 item Hamilton Depression Rating Scale; HAMA, Hamilton Rating Scale for Anxiety; HC, healthy control; HRSD, Hamilton Rating Scale for Depression; HSCL, Hopkins Symptoms Checklist; HSCL-90, Hopkins Symptom Checklist-90; IDAS, Inventory of Depression and Anxiety symptoms; IIP, Inventory of Interpersonal Problems; IPANAT, the Implicit Positive and Negative Affect Test; IPPA, Inventory of Parent and Peer Attachment; IPV, Intimate Partner Violence; M-A, meta-analysis; MBI, Maslach Burnout Inventory; MDD, major depressive disorder; MPSS-SR, Modified PTSD Symptom Scale-Self-Report; NIMH, National Institute of Mental Health; NOS, not otherwise specified; PAM, Psychosis Attachment Measure; PBI, Parental Bonding Inventory; PD, personality disorder; ProQOL:CSE-R-III, Professional Quality of Life: Compassion Satisfaction and Fatigue Subscales-Revisions; PS, primary studies; PTSD, post-traumatic stress disorder; RAQ, Reciprocal Attachment Questionnaire; RCT, randomized control trial; RDoC, Research Domain Criteria project; RF, reflective functioning; RQ, relationship questionnaire; RSQ, Relationship Scales Questionnaire; S-M BM, Shiron–Melamed Burnout Measure; SAQ, Service Attachment Questionnaire; SAS[1], Social Attachment Scale; SAS[2], Social Anhedonia Scale; SASI, Separation Anxiety Symptom Inventory; SCL-90-R, Symptom Checklist-90-Revised; SES, Socio-economic status; SR, systematic review; TM, trichotomous measure; TSC-40, Trauma Symptom Checklist-40; U, Unresolved; WAI, Working Alliance Inventory.

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**Table 3.** *Overview of key findings, limitation and implications/future directions*

| Authors (year) Design | Key findings | Brief summary of findings | Limitations | Implications/future directions |
|---|---|---|---|---|
| 1 Van Ijzendoorn & Bakermans-Kranenburg (1996)<br><br>Meta-analysis | Community sample of mothers' distribution of attachment style: (24% Ds; 58% F; 18% E; 19% U). Fathers' distributions similar to mothers'. Low SES mothers show greater U (related to loss and trauma) and Ds styles)<br>Greater distribution of insecure attachment representations (particularly preoccupied and unresolved) among clinical samples, compared to non-clinical samples. No systematic relations between clinical diagnosis and type of insecurity | Adults in a clinical setting show greater levels of preoccupied and unresolved attachment styles. No relation between style and clinical diagnosis was observed | Limited description of samples from original studies regarding demographics and MHD | Continued research using AAI to build the evidence base |
| 2. Bakermans-Kranenburg & van Ijzendoorn (2009)<br><br>Meta-analysis | In combined clinical sample, 23% were Ds, 21% F, 13% E, and 43% U/CC. 79% were classified as insecure, $\chi^2(3, N=1854)=1113.47$, $p<0.01$, showing an over-representation for Ds (SR not provided), E (SR not provided), and particularly U/CC (SR = 25.12)<br>MHD classified as 'internalizing' (borderline and suicidal) showed an over-representation of U classifications (SR = 12.66), $\chi^2(3, N=191)=24.22$, $p<0.01$<br>MHD classified as 'externalizing' (violence against world, within the family and against the self) showed an over-representation of Ds, E, and U (SR = 8.4) classifications, $\chi^2(3, N=382)=272.06$, $p<0.01$<br>Violence against the family (family abuse) was associated with more E (SR = 3.59) and U (SR = 3.36) representations, $\chi^2(3, N=53)=37.49$, $p<0.01$<br>Violence against the world (conduct, antisocial) showed over-representations of Ds (SR = 6.60) and U (SR = 5.90) classifications, $\chi^2$ $(3, N=190)=144.00$, $p<0.01$<br>Violence against the self-showed a greater representation of Ds (SR = 5.78) classifications when the U category was not included, $\chi^2(2, N=97)=61.3$, $p<0.01$, and an over-representation of E (SR = 7.17) and U (SR = 4.95), $\chi^2(3, N=139)=121.39$, $p<0.01$, when using the four categories of the AAI, suggesting variable finding among these studies<br>Depressed samples showed more than expected of both Ds (SR = 3.51) and E (SR = 5.41) classifications and relative absence of unresolved loss/trauma, $\chi^2(3, N=205)=66.7$, $p<0.01$<br>Clinical samples that had experienced abuse/PTSD showed significantly more U classifications (SR = 18.9), $\chi^2(3, N=263)=446.84$, $p<0.01$, but not more Ds or E classifications | Those with MHD differed significantly on the AII, compared to the norm, showing higher levels of insecure attachment. Those with physical health difficulties of deafness and blindness did not differ from the norm | The normative data is based on relatively modest number of participants. The measurement and conceptualization of MHD may also limit interpretations given comorbidity and variation in measurement and conceptualization of MHD | There is a significant over-representation of unresolved loss/trauma classifications and only a few systematic associations between attachment classification and MHD, within clinical populations. The authors suggest the need for a more sensitive classification system that could offer further insight into attachment style of those within the insecure and unresolved categories. For example, the DMM (Crittenden, 1997), the Hostile-Helpless category (Melnick *et al*. 2008), improved use of the CC classification using the original coding system (Hesse, 1996), or RF (Fonagy *et al*. 1998). Authors also emphasize the relevance of using the AAI dimensional scales in research as they may offer insight into attachment that categorical classifications miss. Specifically authors suggest future AAI interviews be assessed for coherence and unresolved loss or trauma |
| 3. Smith *et al*. (2010)<br><br>Systematic review | Review highlights the inconsistencies in measurement of attachment and therapeutic alliance<br>12/16 studies report significant relationship between clients' global attachment patterns and therapeutic alliance<br>For attachment security and therapeutic alliance, nine studies reported a positive medium effect, four studies reported non-significant relationship | Those who self-rate as more secure are more likely to rate the therapeutic alliance as stronger. A less clear relationship exists between insecurity and therapeutic alliance. There is more evidence for a negative relationship between a | Generally small sample sizes. High rates of attrition may introduce bias in relation to measurement of alliance. The inconsistency in the conceptualization and measurement of adult attachment contributes to difficulties with measurement | Therapists may use secure dimensions of attachment measures to offer an indication of the strength of the working alliance a client may co-create. However, how this information may then be used effectively, and the relevance of the therapist's attachment style in co-creating working alliance are suggested as areas for future research |

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| | For attachment avoidance and therapeutic alliance, four studies reported a negative medium effect, one a large negative effect, nine reported no significant relationship, and 1 study reported an initial medium negative relationship which became a large positive relationship with growth in the alliance. One study reported a medium positive correlation<br>For attachment anxiety and therapeutic alliance, 10 studies found no significant relationship, three found a medium negative correlation, one found a small positive correlation, and one reported a large positive correlation after growth in the therapeutic alliance over time<br>For specific attachment to the therapist, three of four studies found a large positive correlation between security and therapeutic alliance, and one was non-significant. Three of three studies found a large negative relationship between avoidant attachment to therapist and therapeutic alliance. Three of four studies found no significant correlation between preoccupied attachment to therapist and therapeutic alliance, and one found a medium negative relationship | dismissive style and therapeutic alliance, than with an attachment anxiety. There is good evidence for the relationship between client rated secure and avoidant attachment to therapist and therapeutic alliance | | |
| 4. Zachrisson & Skarderud (2010)<br><br>Systematic review | Overall the prevalence of secure classification is low among ED participants<br>Preoccupied classification was most common among those with unspecified ED and comorbid depressive symptoms. Dismissing classification was most common among those with unspecified ED without depressive symptoms<br>Preoccupied classification was most common among those with BN, apart from in one study<br>Relatively even distribution across insecure classifications for AN samples, with a slightly higher prevalence of dismissing classification among AN-R | There is a low level of secure attachment classifications among those with ED. Preoccupied classifications were more common among those with BN or ED with mood component, while dismissing classifications appeared slightly more common among those with AN-R | High levels of diagnostic cross-over among those with EDs suggest that trying to associate attachment styles with current ED diagnoses may be less effective than with ED symptomology | Support was found for the association between insecure attachment and EDs, but no significant evidence to explain their relationship. Future research should explore mediators |
| 5. Levy *et al.* (2011)<br><br>Meta-analysis | Mean ES were computed as a weighted average of each independent sample's correlation coefficient. Random effects modelling was used<br>Higher attachment anxiety predicted worse outcome after therapy, $r = -0.224$, Cohen's $d = -0.460$ (95% CI 0.320, −0.608)<br>Attachment avoidance showed little effect on therapy outcome, $r = 0.182$, $d = -0.028$ (95% CI −0.335, 0.275)<br>Attachment security predicted better outcomes, $r = 0.182$, $d = 0.370$ (95% CI 0.084, 0.678)<br>Gender was identified as a moderator, such that the more female the sample, the weaker the relation between attachment security and outcomes ($Z = 2.78$, $p < 0.01$). However, this effect was not found when one all female primary study, which showed a particularly weak relationship between attachment security and outcome, was removed from the analysis, suggesting caution in interpreting this significance<br>Age was identified as a moderator ($Z = 2.02$, $p < 0.05$) in that the relationship between attachment security and outcome was less in older samples | Attachment anxiety predicted moderately worse outcomes after psychotherapy. Attachment avoidance had little effect, while attachment security predicted better outcomes, with a small effect size | The analysis did not control for baseline symptoms and thus the association between attachment style and post-therapy outcomes may be a reflection of the association between attachment and psychopathology, rather than an indication of improvement due to therapy | Authors suggest that attachment style perhaps should be viewed as a proximal outcome of therapy rather than a predictive client characteristic, and that a focus on developing secure attachment may be warranted |
| 6. Diener & Monroe (2011)<br><br>Meta-analysis | Effect sizes were aggregated across studies using random effects methods<br>Greater attachment security is associated with stronger patient rated therapeutic alliance, and greater insecurity with weaker alliance ($r = 0.17$, $p < 0.001$, 95% CI 0.10, 0.23), a small-to-medium effect | Greater levels of self-reported attachment security and insecurity are associated with stronger and weaker client rater therapeutic alliance, respectively. The strength of the relationship did not differ | The relatively small number of studies and available information within studies reduced power for moderator analysis and thus may not have identified relevant moderators | Therapist rated alliance was a poorer indication of attachment style to client rated alliance, and thus measures of client rated attachment/alliance may be useful for therapists in informing interventions |

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**Table 3:** (*Continued*)

| Authors (year) Design | Key findings | Brief summary of findings | Limitations | Implications/future directions |
|---|---|---|---|---|
| | No continuous moderators identified. In categorical subgroup analyses, the patient rated alliance showed a significantly stronger correlation with attachment style than therapist rated alliance ($r$ = 0.17, 95% CI 0.10, 0.24, $p < 0.001$) | according to secure, anxious, or avoidant attachment style | | |
| 7. Selcuk *et al*. (2012)<br>Meta-analysis | Those high on attachment avoidance showed less affective recovery when generating a mental representation of an attachment figure, after eliciting upsetting autobiographical memories, for both explicit (mean ES = −0.18, $p$ = 0.02, 95% CI = −0.32, −0.03) and implicit (mean ES = −0.20, $p$ = 0.03, 95% CI = 0.38, −0.02) measures<br>No significant effect was observed for attachment anxiety on affective recovery after eliciting upsetting autobiographical memories. *Post hoc* analysis identified a trend in which higher attachment anxiety towards one's mother was associated with smaller recovery effects (mean ES = −0.16, $p$ = 0.09, 95% CI = −0.34, 0.02)<br>Those who experienced greater affect recovery after viewing a photograph of their partner also reported fewer physical and psychological health problems. This was measured in only one study | Imagining a supportive interaction with, or viewing a photograph of an attachment figure (mother/partner) after recalling an upsetting memory, reduced negative affect compared to imagining an acquaintance. Less affective recovery was observed for those who reported avoidant attachment styles. No significant effect was observed for those who reported anxious attachment styles. A non-significant trend of less affect recovery was reported | Results may reflect activating positivity rather than attachment representations. However, the relationship with avoidance lends support against this concern | Difficulties with emotion regulation have been implicated in a number of mental health difficulties. Results offer insight into how attachment relationships may affect mental health through emotion regulation |
| 8. Bernecker, Levy & Ellison (2014)<br>Meta-analysis | Random effects methods found a mean weighted $r$ of −0.137 (95% CI −0.17, −0.11) for greater avoidance predicting weaker alliance. Similarly, a mean weighted $r$ of −0.121 (95% CI −0.15, −0.09) suggests greater attachment anxiety predicts poorer psychotherapy alliance | Insecure anxious and avoidant attachment styles, as measured by self-report, are associated with weaker client reported therapeutic alliance in outpatient individual psychotherapy | Data come from similar populations, mainly young white females in university counselling settings, limiting generalizability. Limited data prevented some moderator/mediator analysis | Further research should identify the cause of the relation between alliance and outcome, with practical applications to improve the therapeutic relationship and client outcomes |
| 9. Katznelson (2014)<br>Systematic review | Strong evidence to suggest that parents' mentalizing/RF capacity impacts on their caregiving, suggesting it may be central to inter-generational transmission of attachment<br>*BPD*<br>Three studies support the suggestion that those with BPD show lower levels of RF than controls, with RF mean scores of 2.7, 2.99, and 3.21 (the third sample included 27% avoidant PD). One study found lower RF than other personality disorders; one suggests higher mentalization is a protective factor for BPD for those who have experience abuse; one suggests RF and unresolved trauma/loss are relatively independent concepts<br>*Depression*<br>Most studies of depression include comorbidity. Three state depression as a primary diagnosis with RF means of 4.46, 4, and 2.4. The author notes RF specific to questions about loss was low in one study, despite the global RF (4) being comparable to controls (3.56)<br>*Panic disorder*<br>One study found that general RF ($M$ = 5.15) was lower than symptom-specific RF ($M$ = 4.43)<br>*Eating disorder*<br>Two studies found low levels of RF among participants with eating disorders in inpatient settings ($M$ = 2.8; 2.4). One study found comparable levels of mean RF for those with bulimia | RF is a developmental skill acquired by children through attachment relationships that is later related to psychopathology in adults, and to their own children's attachment style. RF is associated with quality of parent caregiving. There is evidence to suggest that RF is lower in a number of MHD, particularly BPD and some EDs, and among severe MHDs | An early narrative review of quantitative data, with very few studies per area of MHD | Further research is needed to clarify the relationship between RF and symptom-specific difficulties, between change in RF and severity of MHD. Further development in the measurement of RF may facilitate this, including the possibility of developing a multi-dimensional RF measure |

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| | treated as outpatient ($M$ = 4.11) and controls ($M$ = 4.25). However, distribution for the clinical group showed more polarized high and low distribution of scores<br>*Psychosis*<br>One study identified low levels of RF ($M$ = 3). Those with secure attachment showed higher levels of RF compared to those with Ds styles. No differences between secure and preoccupied. Negative correlation between RF and physical and psychological functioning<br>*Offending behaviour*<br>One study found prisoners show lower RF ($M$ = 2.11) than other psychiatric patients ($M$ = 3.77) and controls ($M$ = 5). Those with more violent offences showed lower RF. Another study found association between psychopathy and aggression when RF was low but not high<br>*Autism*<br>In one study those with Autism score lower on RF ($M$ = 2.78) compared to controls ($M$ = 3.9). TOM and RF were not significantly associated<br>*Personality organization*<br>One study found a strong correlation between the RF and OPD, sharing 26% of variance. One study found a moderate relationship between RF and STIPO | | | |
| 10. Gumley *et al*. (2013)<br>Systematic review | Good evidence found to support the association between self-report attachment avoidance and psychiatric symptoms in four studies, with positive symptoms in six studies, and negative symptoms in two studies<br>On self-report measures, attachment anxiety and avoidance was associated with greater positive and negative symptoms. Mixed findings were reported for avoidance and anxious attachment and quality of life<br>Using the AAI, attachment avoidance was associated with fewer self-reported psychiatric symptoms, but not when symptoms were reported by case managers and family members<br>Using the AAI, moderate evidence found for association between attachment anxiety and psychiatric symptoms in one study, and positive symptoms in four studies. Greater security was associated with fewer positive symptoms<br>Insecure attachment moderately associated with poorer engagement with services and interpersonal problems. One study found higher RF was negatively associated with quality of life | Insecure attachment was moderately associated with poorer engagement with services and more interpersonal problems. Small-to-moderate associations were observed between insecure attachment and negative representations of parental bonding and experiences of trauma. Small-to-moderate associations were seen between insecure attachment and greater positive and negative symptoms, depression, and poorer quality of life | Heterogeneity in measures prevented meta-analytic techniques | Findings suggest the importance in considering attachment in assessment, and in understanding emotion regulation and recovery, in psychosis. Attachment theory may also offer a conceptual model for considering staff-service user relationships |
| 11. Korver-Neiberg *et al*. (2014)<br>Systematic review | *Psychopathology*<br>Evidence to suggest association between insecure attachment styles and psychosis, specifically, dismissive styles<br>*Recovery style*<br>Two studies suggest avoidant, 'sealing over' coping styles are related to insecure attachment styles and negative recollections of early parental experiences<br>*Attributional style*<br>One study found those with schizophrenia who have a more secure attachment style attribute negative events more to situational factors<br>*Mentalization*<br>One study found those with first time psychosis who had insecure dismissive attachment styles had lower levels of mentalization than those with secure and preoccupied styles | Available evidence suggests that attachment patterns are related to symptoms and outcome in psychosis. Specifically, mentalization is suggested as a key mediator between attachment and psychosis | That the authors combined results from self-report attachment measures and AAI may be a limitation as they measure relatively separate concepts | Longitudinal data linking attachment and experiences of psychosis would be beneficial, along with research regarding staff attachment style, therapeutic relationship and psychosis-related outcomes |

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**Table 3:** (*Continued*)

| Authors (year) Design | Key findings | Brief summary of findings | Limitations | Implications/future directions |
|---|---|---|---|---|
| | *Interpersonal functioning*<br>Two studies found insecure attachment style is associated with poorer interpersonal functioning among those experiencing psychosis | | | |
| 12. Caglar-NNazali *et al.* (2014)<br>Meta-analysis and systematic review | *Meta-analysis*<br>Meta-analysis of eight self-report measures found that ED is associated with insecure attachment with a large ES, $d = 1.3$, $p < 0.001$, compared to healthy controls<br>Those with ED experience lower self-reported parental care with a moderate effect, $d = 0.51$, $p < 0.001$ and a small effect for perceived overprotection ($d = 0.29$, $p < 0.001$)<br>*Systematic review*<br>On one study using the AAI participants with ED showed lower states of mind ($d = 0.14$), coherence of transcript ($d = 2.37$), probable experience of positive attachment ($d = 1.34$), and increased dysfunctional attachment ($d = 0.37$). Two studies reported increased separation anxiety ($d = 0.58$–$0.66$)<br>Lower general attachment was observed in two studies ($d = 0.46$–$1.12$) | Those with ED experience greater insecure attachment than healthy controls, lower parental care and greater parental overprotection. Findings suggest one of the main disturbances in Social Processes in ED is feeling insecure in relationships, reduced non-verbal communication and avoidance of communication, reduced control of oneself, problems in identifying, understanding, and verbalizing one's emotions, and in understanding how others think and feel, negative self-esteem, and increased social inferiority | Use of self-report measures for attachment may measure personality traits rather than attachment behaviour, with anxiety related to neuroticism and avoidance negatively related to extroversion. There were fewer studies including BN and BED participants. Some adolescents were included in the analysis, rather than separated from adult samples. Perceived care from adults was operationalized a self-report measure of attachment | Further research including participants who have recovered from ED to understand how physical health impacted by ED behaviours may impact on these processes |
| 13. Tasca & Balfour (2014)<br>Systematic review | Operationalizes attachment functioning, as affect regulation, interpersonal style, coherence of mind, and RF<br>Higher levels of attachment insecurity among those with ED. Prevalence of insecurity ranged from 70% to 100% in three studies<br>Studies report mixed findings regarding type of insecurity and ED diagnosis. However, there may be transdiagnostic relevance as attachment insecurity is associated with ED symptomology and severity. Four studies found need for approval (an aspect of attachment anxiety) positively associated with body dissatisfaction and ED psychopathology<br>RF among AAI from three studies was significantly lower in ED samples (mostly AN)<br>One study reports similar levels of RF among BN and controls, but bimodal distribution among BN. One study found lower RF in inpatient ED compared to other psychiatric sample and control<br>One study found maladaptive perfectionism mediated the relationship between insecure attachment and ED symptoms. Another found that hyperactivation of emotions mediated the relationship between attachment anxiety and ED symptoms. Attachment avoidance had a direct relationship with ED symptoms, not mediated by hypoactivating (cutting-off) strategies. Negative affect and alexithymia were identified as mediators in one study each, between insecure attachment and restrained eating and body dissatisfaction, respectively<br>High levels of disorganized mental states were reported in those with general ED in three studies, AN in two studies, and BED in one study. One of these also found that disorganized mental states were prevalent among participants' mothers<br>Across six studies, attachment avoidance was associated with drop out from individual and group treatment, problematic group treatment progress, and lower group cohesion. Attachment anxiety was also associated with poorer outcomes for individual | There is some evidence to suggest that maladaptive perfectionism and problematic affect regulation may be mechanisms by which insecure attachment leads to risk of ED. There is some evidence for the relevance of attachment styles to psychotherapy processes and outcomes, in relation to type of therapy (e.g. CBT, Psychodynamic interpersonal) and individual *v.* group | Review offers limited information regarding primary studies and participants | There are few AAI studies among those with ED. This may offer further insight into the impact of RF and disorganized states of mind on symptom maintenance and severity. Further research (including longitudinal) investigating the psychological, social, and biological mechanisms by which attachment insecurity confers risk for ED can inform prevention and intervention models |

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| | | | | |
|---|---|---|---|---|
| | and group treatment. However, greater anxiety was associated with better treatment outcomes for those with BED receiving group psychodynamic interpersonal therapy | | | |
| 14. Malik *et al*. (2015)<br>Meta-analysis | Five studies were rated as 'poor' quality, six as 'fair', and one as 'good'<br>Nine studies showed positive association between insecure attachment, poor emotion regulation, and depressive symptoms, $r = 0.08–0.67$, $p < 0.05$. Four of these reported moderate-to-strong correlations<br>Seven studies reported associations between anxious attachment, hyperactivating emotion regulation strategies (such as reactive coping, disclosure, seeking out others to regulate distress, low defensiveness, low ego-resiliency, and difficulty in representing negative affect and cognition) and depressive symptoms, $r = 0.15–0.57$, $p < 0.05$<br>Four studies suggested deactivating strategies (such as emotional cut off and perceived inability to manage emotional responses) acted as mediators in the relationship between avoidant and depressive symptoms, $r = 0.15–0.67$, $p < 0.01$ | Strong evidence to support the theory that emotion regulation is a mediator between attachment and depressive symptoms among the more methodologically robust studies. However, considering all research, evidence is varied. Consistent evidence was found for hyperactivating strategies as mediators for anxious attachment. Mixed findings were reported for deactivating strategies as mediators of avoidant attachment | Some limitations to generalizability of results due to sampling, which consisted mostly of young Caucasian North American college students. Heterogeneity in conceptualization of emotion regulation strategies reduced clarity of findings | The development of more clearly defined measures of attachment, self-regulation, and symptoms for clearer findings in the future. The targeting of specific hyperactivating strategies by clients in therapy may be appropriate in treatment of MHD for those with anxious attachment |
| 15. Mallinckrodt & Jeong (2014)<br>Meta-analysis | Meta-analysis found that high anxious and avoidance insecure attachment was negatively associated with CATS Secure and positively associated with CATS Avoidant. Only insecure anxious attachment pretherapy was associated with CATS preoccupied<br>CATS Secure had a strong positive effect on working alliance ($r = 0.76$, $p < 0.001$). CATS avoidant had a strong negative effect on working alliance ($r = -0.63$, $p < 0.001$). CATS preoccupied was not associated with working alliance ($r = 0.02$, $p = 0.70$) | Client pretherapy attachment insecurity appears to interfere with developing secure attachment to therapist. Pretherapy anxious attachment is significantly associated with anxious attachment to the therapist and thus may lead to hyperactivation in the psychotherapy relationship. Pretherapy anxiety and avoidance were both associated with avoidant attachment to the therapist | Relatively limited generalizability of sample given high level of university students. Little information is given regarding the MHD clients presented with, or the type of therapy provided | Relevant for conducting psychotherapy with those with insecure attachment styles |
| 16. Taylor *et al*. (2015)<br>Systematic review | *Interview-based findings*<br>In one RCT among participants with BPD, seven out of 22 moved from insecure to secure after 1 year of transference-based psychotherapy. Change in classification was not observed for DBT and supportive therapy. However, high rates of attrition were observed in the DBT group<br>In another RCT among patients with childhood-related PTSD there was a 39% increase in secure classification after attending 16 sessions of prolonged exposure (PE) or skills training. Eight out of 13 participants also lost their unresolved classification; with PE more effective in reducing unresolved scores than skills training<br>One study did not find any differences in attachment status between a control group and a group of mothers who had 1 year of group parenting with individual psychosocial support<br>In another, seven out of 29 moved from insecure to secure after an average of 21 sessions of dynamic psychotherapy<br><br>*Self-report*<br>Some evidence to suggest that client security increases after therapy. Five out of nine studies demonstrated improvements in attachment anxiety post-treatment and three reported no improvement. One suggested improvement but did not conduct significance testing | Attachment security increases following therapy, attachment anxiety decreases, however, findings are mixed regarding attachment avoidance. Findings are consistent across various methodologies, patient groups, therapeutic approaches, therapy settings, and research quality | Methodological limitations were observed among the majority of studies, e.g., confounding variables. Most participants were self-referrals, which may contribute to self-selection bias, limiting generalizability | Further research investigating whether increase in attachment security leads to long-term positive outcomes. If so, attachment security itself may become a more important outcome of psychotherapy. Measures at multiple time points throughout therapy and at long-term follow-up may offer insight into the likely complex relationship between attachment style change in outcome measures |

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**Table 3:** (*Continued*)

| Authors (year) Design | Key findings | Brief summary of findings | Limitations | Implications/future directions |
|---|---|---|---|---|
| | Five studies reported no significant change for attachment avoidance, one suggesting increase in avoidance (but significance testing not conducted), and three reported significant improvement | | | |
| 17. West (2015)<br>Systematic review | Six of seven studies found anxious attachment was positively associated with burnout. Two found a significant negative relationship between secure attachment and burnout. One study found a positive association between fearful avoidant attachment style and burnout. Two of two found a positive relationship between anxious attachment and compassion fatigue<br>One study found a positive relationship between avoidant attachment and burnout, two found no significance, and two found a positive relationship between avoidance and compassion fatigue<br>Attachment security is consistently associated with lower levels of burnout/compassion fatigue | Among the available literature, attachment security is consistently associated with lower levels of burnout and compassion fatigue, while attachment anxiety is associated with higher levels. Mixed results were reported regarding avoidance and burnout/compassion fatigue | Most were convenience samples; response rates were poor among some studies. A number of studies did not report reliability of measures or control for confounding factors. Measures of burnout and compassion fatigue were combined, which are considered separate concepts | Research regarding how preventative strategies, such as training or supervision in light of attachment findings, may reduce burnout |

AAI, Adult Attachment Interview; AN, anorexia nervosa; AN-R, anorexia nervosa-restricting type; BED, Binge eating disorder; BN, bulimia nervosa; BPD, borderline personality disorder; CATS, Clients' Attachment to Therapist Scale; CBT, cognitive behavioural therapy; CI, confidence interval; CC, Cannot Classify; Ds, Dismissing; DMM, dynamic maturational model; E, Preoccupied; ED, eating disorder; ES, effect size; F, Secure; MHD, mental health difficulty; OPD, operationalized psychodynamic diagnostics; RCT, randomized control trial; RF, reflective functioning; SES, Socio-economic status; SR, systematic review; STIPO, Structured Interview of Personality Organization; TOM, Theory of Mind.

processes related to attachment and MHDs; and (4) interpersonal processes related to attachment and MHDs. These themes were developed through content analysis of the data extracted from included reviews.

### *Theme one: measurement of attachment*

The first theme was regarding the ways in which attachment was measured in the included reviews. Six studies reported findings on both self-report and interview measures (Levy *et al*. 2011; Caglar-NNazali *et al.* 2014; Gumley *et al*. 2013; Korver-Neiberg *et al*. 2014; Malik *et al*. 2015; Tasca & Balfour, 2014). Four reporte findings using only interview measures (Van IJzendoorn & Bakermans-Kranenburg, 1996; Bakermans-Kranenburg & van IJzendoorn, 2009; Zachrisson & Skarderud, 2010; Katznelson, 2014). Seven reported findings using only self-report measures (Smith *et al*. 2010; Diener & Monroe, 2011; Selcuk *et al*. 2012; Bernecker *et al*. 2014; Mallinckrodt & Jeong, 2014; Taylor *et al*. 2015; West, 2015). Of the studies that reported on both interview and self-report measures, two were meta-analyses that combined results (Levy *et al*. 2011; Korver-Neiberg *et al*. 2014), one narrative review that presented findings together (Malik *et al*. 2015), four narrative reviews that presented findings separately (Smith *et al*. 2010; Gumley *et al*. 2014; Tasca & Balfour, 2014; Taylor *et al*. 2015), and one that presented meta-analytic results for self-report measures and a narrative review for interview measures (Caglar-NNazali *et al.* 2014). A wide variety of self-report measures were used. The AAI was the most commonly used interview measure.

### *Theme two: measurement of MHD*

The second theme was regarding the types of MHDs that were addressed in the included studies. In total, 14 studies included clinical samples, one included health professionals who experienced burnout (West, 2015), and two used non-clinical samples, but measured a psychological process relevant to MHD – affect regulation (Selcuk *et al*. 2012; Malik *et al*. 2015). Of the 14 that included clinical samples, there were a mix of MHD including mood, anxiety, personality, suicidality, antisocial and other externalizing behaviours, personality disorders, abuse, post-traumatic stress disorder, eating disorders (ED), drug use, psychosis, and non-severe difficulties presenting at university counselling centres. One small sample included people with somatform difficulties (Bakermans-Kranenburg & van IJzendoorn, 2009). In one review autism and attachment were considered in relation to reflective functioning (RF; Katznelson, 2014). Insecure attachment style was consistently associated with MHD. However, studies failed to show a consistent relationship between attachment style and mental health diagnosis. Unresolved classifications were particularly high among clinical samples.

Three systematic reviews concerned attachment and ED specifically. One also included meta-analytic synthesis. Insecure attachment styles were found to be more common among those with EDs when using both interview measures (Zachrisson & Skarderud, 2010; Caglar-NNazali *et al.* 2014; Tasca & Balfour, 2014) and self-report measures (Caglar-NNazali *et al.* 2014) compared to health controls. Tasca & Balfour (2014) report a rate of insecure attachment ranging from 70% to 100% across three primary studies. Zachrisson & Skarderud (2010) suggest there is some evidence that Preoccupied styles are more common among bulimia nervosa. Dismissing styles among anorexia nervosa. Tasca & Balfour (2014) report inconsistent findings between ED diagnosis and attachment style but suggest that attachment style may be relevant to symptomology and severity. They suggest this supports the relevance of attachment styles when considering ED transdiagnostically. High levels of disorganized mental states were also identified among ED participants (Caglar-NNazali *et al.* 2014; Tasca & Balfour, 2014).

Two reviews focussed on attachment in the context of psychosis among those with clinical diagnoses and those from the community experiencing (sub)clinical psychosis experiences (Gumley *et al*. 2013; Korver-Neiberg *et al*. 2014). Insecure attachment was associated with increased symptoms while greater security is associated with fewer symptoms. West (2015) found that attachment anxiety is associated with burnout and that attachment security has a negative relationship with burnout, while there are mixed findings regarding avoidance.

### *Theme three: intrapersonal processes related to attachment and MHDs*

The third theme was regarding the intrapersonal processes that were addressed in the included studies. A number of studies focussed on intrapersonal processes that were considered potential mediators between attachment style and MHD. Selcuk *et al*. (2012) and Malik *et al*. (2015) focussed on emotion regulation and Katznelson (2014), on RF, both of which are considered to be relevant psychological processes in mental health. Selcuk *et al*. (2012) found that emotion regulation after recalling an upsetting memory, is facilitated by imagining a secure attachment figure. However, this effect was not identified for those with insecure attachment styles imagining their attachment figure. Katznelson (2014) conducted a systematic review of RF, the operationalization of mental processes thought to contribute to the ability to mentalize, that is understand one's own and others' behaviours as a result of feelings,

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thoughts, beliefs, and desires (Fonagy *et al*. 1998). It is considered a developmental skill acquired by children though attachment relationships, which later impacts on an adults' ability to care giver. In this way it may be an important factor in the inter-generational transmission of attachment (Katznelson, 2014). Katznelson (2014) suggests that the early findings suggest RF is often low for those with MHD, particularly borderline personality disorder, some ED, and among more severe MHD. Low RF was also observed in the ED and psychosis reviews, with suggestion that mentalizing may function as a mediator between insecure attachment and ED or psychosis.

Two studies discussed intrapersonal processes as mediators between attachment styles and ED. Tasca & Balfour (2014) note that two studies found that maladaptive perfectionism, hyperactivation of emotions, negative affect, and alexithymia all mediated the relationship between insecure attachment and specific ED symptoms. Similarly, Caglar-NNazali *et al.* (2014) identified difficulties with identifying, understanding, and verbalizing emotions among those with ED.

### *Theme four: interpersonal processes related to attachment and MHDs*

The fourth theme was regarding the interpersonal processes that were addressed in the included studies. Many studies addressed interpersonal aspects of attachment in relation to MHD in the areas of social cognition (Caglar-NNazali *et al.* 2014), interpersonal functioning, engagement with services (Gumley *et al*. 2013; Korver-Neiberg *et al*. 2014), and n relation to the therapeutic alliance (Smith *et al*. 2010; Diener & Monroe, 2011; Bernecker *et al*. 2014; Mallinckrodt & Jeong, 2014).

Not surprisingly, difficulties in social relationships were identified among those with insecure attachment styles and MHD, specifically among the ED and psychosis reviews. These interpersonal difficulties were suggested to impact engagement with therapeutic services, not only contributing to the maintenance of MHD, but potentially impeding recovery. Among the psychosis reviews, insecure attachment was moderately associated with poorer engagement with services and poorer interpersonal functioning (Gumley *et al*. 2013; Korver-Neiberg *et al*. 2014). Among the ED reviews, those with ED showed difficulties with nonverbal communication, difficulties in understanding how others think and feel, and an increased sense of social inferiority (Caglar-NNazali *et al.* 2014).

Within therapy, secure attachment appears to make it easier for clients to create a strong working alliance (Smith *et al*. 2010; Mallinckrodt & Jeong, 2014). Conversely, insecurity is associated with weaker therapeutic alliance (Diener & Monroe, 2011). Levy *et al*. (2011) report poorer post-therapy outcomes for those with anxious attachment, and better outcomes for those with secure attachment styles. However, they did not control for baseline symptoms and thus this may reflect the association between anxious attachment and MHD, rather than indicating that therapy is less effective for those with anxious attachment. In fact, Taylor *et al*.'s (2015) review offers a more hopeful picture, finding evidence to suggest that attachment security increases and attachment anxiety decreases following therapy, with a number of studies reporting participants moving from insecure to secure classifications. They report mixed findings regarding change in attachment avoidance after therapy (Taylor *et al*. 2015). Tasca & Balfour (2014) found that among those with ED, avoidant attachment was associated with drop out from individual and group therapy, and difficulties with group progress and cohesion.

## Discussion

The present findings demonstrate the importance of understanding attachment insecurity in the context of MHD and psychotherapy. There are consistent findings of high levels of insecure attachment among clinical populations, including Dismissing and Preoccupied styles. The Unresolved classification, related to trauma, appears to be the most prevalent among clinical samples. There has been particular attention to those with ED and psychosis who show high levels of insecure attachment and associated difficulties with emotion, mentalization, and social relationships. There is good evidence to suggest that an insecure attachment style may act as an obstacle to developing a strong therapeutic alliance, however, attachment security is seen to increase while attachment anxiety is seen to decrease after therapeutic interventions.

### *Implications for research, theory, and practice*

Though there is some overlap between the self-report and interview approaches, they are considered to measure relatively different aspects of attachment (Shaver *et al.* 2000). Thus, future reviews may benefit from presenting self-report and interview findings separately. Reviews that compare areas of convergence and divergence on these two forms of measurement may also offer further insight into their conceptual differences. Given the high level of insecure attachment styles among clinical samples it may be useful to utilize a more sensitive dimensional measure of attachment in research. Roisman *et al.* (2007) suggest that the distribution of attachment as measured by the AAI is in fact continuous rather than categorical. Crittenden's (1997) DMM is an example of a dimensional model that may be more sensitive to subtle

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but meaningful differences within insecure styles, related to mental health.

Studies consistently identified that insecure styles were common among clinical samples. However, studies that attempted to connect attachment style with mental health diagnosis were unable to produce consistent results. This finding may be related to the way in which MHD are conceptualized in research and practice. The prevailing classification system, which outlines diagnoses based on the presence of clinical symptoms, has evoked concern regarding its poor reliability, validity, and prognostic value [British Psychological Society (BPS), 2011]. There has been invitation to develop an alternative system for describing, understanding, and researching mental health (BPS, 2011).

One such alternative system is the Research Domain Criteria project (RDoC), developed for research by the National Institute of Mental Health (NIMH). The RDoC proposes that biological, social, and psychological processes be measured in a 'bottom up' manner in order to better understand the full range of human behaviour, from mental health to illheath (Sanislow et al. 2010). Within this framework, 'Affiliation and Attachment' is identified as a category for research, within the 'Systems for Social Processes' domain (NIMH, 2015). One study adopted this framework to review previous research related to ED (Caglar-NNazali *et al.* 2014). Future research that adopts this framework will be able to study attachment and MHD without relying on existing psychiatric diagnoses and thus may offer clearer insights into the role of attachment in mental health. Furthermore, the inclusion of biological processes offers to enhance current understanding of attachment considerably.

While working within the current psychiatric classification system, attachment and somatic symptom disorder and autism spectrum disorders are areas for future research given the lack of data for these diagnoses within the reviewed studies. In particular, attachment research regarding somatoform difficulties may be relevant as people with somatic difficulties may present to hospitals, that is a caregiving system, during a time of high stress – a context in which the attachment system may be particular active. Another clinical area with no identified meta-analytic or systematic review is chronic pain, which is similarly relevant to attachment theory.

Further research regarding attachment and therapeutic processes and outcomes over multiple time points throughout therapy and at follow-up will further elucidate the role of attachment in recovery from MHD. Emerging evidence suggests that those with avoidant attachment may struggle to develop a strong working alliance with their therapist, or may struggle with certain therapy formats, such as group therapy (Marmarosh & Tasca, 2013). Continued research into the impact the health care provider's attachment style may have on the therapeutic relationship, or on service engagement, in participants with insecure attachment styles and MHD is also relevant. Similarly, awareness of the connection between health care provider's attachment styles and vulnerability to burnout or compassion fatigue may contribute to development of health care services, management, and supervision processes.

In all, the current evidence regarding attachment theory in adults in relation to MHD continues to support Bowlby's (1982[1969]) original suggestion. During times of stress a secure attachment style may support the individual to cope, and those with insecure attachments are more vulnerable to difficulties related to intra- and interpersonal functioning.

### *Limitations*

A major limitation of this review is the lack of inclusion of primary studies, thus likely missing important areas of research regarding adult attachment and MHD. However, it does highlight the areas where further primary studies and subsequent systematic review or meta-analyses may be appropriate to advance the evidence base regarding attachment theory. Additionally, the review was carried out by an individual, rather than by review team, as suggested by Levac *et al*. (2010).

## Conclusion

The current review outlines research that demonstrates the relevance of attachment theory to understanding, researching, and working with MHD. It has been consistently found that insecure attachment is associated with MHD, particularly Unresolved styles, thought to be related to traumatic experiences. This also highlights the connection between interpersonal trauma and MHD, and the associated difficulties with intra- and interpersonal functioning in later life. However, the current evidence base also highlights the healing potential of relationships, with people engaging in therapy, developing more secure attachment styles, and experiencing positive outcomes. Further research is needed to clarify and further identify the specific intra- and interpersonal functions that mediate insecure attachment style and MHD. However, the current evidence suggests the importance of our early relationships in helping us develop the skills to understand and care for ourselves and others, and the relevance of these skills in mental health.

## Conflicts of Interest

None.

## Ethical Standards

The authors assert that all procedures contributing to this work comply with the ethical standards of the

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relevant national and institutional committee on human experimentation with the Helsinki Declaration of 1975, as revised in 2008.

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