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Attachment Style and Depression: An Investigation into Interpersonal Factors and Processes

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Go raibh mile maith agaibh!

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1. Thesis abstract

Introduction: Depression is one of the most dominant universal mental health disorders and has a high rate of persistency and recurrence. Interpersonal theories posit that it is interpersonal, or relational, factors that serve to cause and maintain depression, which is supported by a growing evidence base. CBASP is an interpersonally-focused psychotherapy specifically designed for the treatment of chronic depression and employs a variety of cognitive, behavioural and interpersonal techniques within the therapeutic relationship to help individuals evaluate their interpersonal exchanges and consider the implications. Research has highlighted the effectiveness of CBASP for this client group, however there is limited research investigating therapist and client factors that contribute to positive outcomes. Attachment style and mentalization are two such factors that are theoretically and empirically linked to an individual's way of relating to others but have not been investigated in relation to outcomes in CBASP. **Aims:** A systematic review aimed to identify and evaluate significant social and interpersonal mediators that account for the relationship between attachment style and depressive symptoms. An empirical study then explored the role of therapist and client attachment style, mentalisation, and therapeutic alliance on clinical outcomes in CBASP. **Methods:** A systematic search of the literature exploring social and interpersonal mediators between attachment style and depressive symptoms was conducted in order to identify and evaluate mediators. The empirical study used a longitudinal case series design where both therapist and client attachment style, mentalization and the therapeutic alliance were assessed, and clinical outcomes were measured at each session to allow evaluation of change over time. **Results:** The systematic review provided evidence

that specific social and interpersonal variables mediate the relationship between attachment and depressive symptoms, specifically social support, social anxiety, social self-efficacy, relationship satisfaction, interpersonal negative events, and interpersonal dependency. Two studies failed to find mediating effects of social support and social self-efficacy. The findings of this review are interpreted with caution as there contained several methodological limitations that affect the ability to generalize to other populations and infer causation. Findings from the empirical study provided evidence for the role of therapist attachment style and mentalization in relation to the therapeutic alliance and clinical outcomes in chronic depression in CBASP. Client attachment style and mentalization were not found to have a significant impact on the process of change but did account for some variance in symptoms of depression. Findings should be cautioned due to the small sample size and lack of statistical power to detect smaller effects. **Discussion:** The findings of this thesis suggests that there exist social and interpersonal factors that mediate the relationship between attachment style and depressive symptoms, and this has clear socio-political and clinical implications. However more research using robust methods of design and statistical analysis are needed in order to provide clarity in this field. The empirical study provided rich and novel data that suggests that therapist attachment style and mentalization, more so than client factors, are important in developing the therapeutic alliance and promoting symptom reduction over the course of treatment. Further research utilizing a larger sample size could provide more robust evidence for this association.

2. Lay summary of thesis

Introduction: Depression is the leading cause of disability worldwide and is highly persistent and recurrent. Research has found it to be more common in people with an insecure attachment style. According to attachment theory, a person with an insecure attachment style tends to dismiss or avoid others, or excessively rely on others to meet their needs as a result of inconsistent or inadequate care in early childhood. A person's attachment style is also related to their ability to mentalize (i.e. imagine the mental states of self and others), and this will have an impact on the way they interact with others. Interpersonal theories of depression suggest that it is the way in which people interact with others that may cause or maintain symptoms of depression. Cognitive behavioural analysis system of psychotherapy (CBASP) is an interpersonal psychotherapy designed specifically for people with chronic depression.

Aims and methods: This thesis first aimed to identify and evaluate what social and interpersonal factors explain the association between attachment style and symptoms of depression. This question was answered through an evaluation of the current research literature in this area. The second study investigated the attachment style, mentalization, and therapeutic alliance of both therapists and clients receiving CBASP to see whether these factors had an impact on symptom change. **Main findings:** This study found that specific social and interpersonal factors do appear to have an impact on how attachment style and symptoms of depression are associated. These included social support, social self-efficacy, interpersonal negative events, relationship satisfaction, and social anxiety. Results from the second study provided evidence that therapists' secure attachment style and mentalization is important for developing the therapeutic relationship and reducing clients' symptoms in CBASP.

Conclusions: Overall, the findings of this thesis suggests that there exist social and interpersonal factors that mediate the relationship between attachment style and depressive symptoms. However more research is needed to provide clarity in this field. The empirical study provided evidence that suggests that therapist factors are important in the treatment of chronic depression in CBASP, however more research using a larger sample is needed in order to provide more evidence.

3. Chapter 1: Systematic review

The Social and Interpersonal Mediators of Attachment Style and Symptoms of Depression: A Systematic Review.

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This systematic review has been prepared in accordance with the author guidelines of *The Journal of Personality and Social Psychology* (see Appendix A).

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3.1 Abstract

Introduction: Attachment theory offers a comprehensive developmental framework from which depression can be understood. A growing body of research has linked insecure attachment and depression. More recent research has aimed to identify the mediators of this relationship. Using theoretical links, this review aims to identify and evaluate the social and interpersonal mediators of this relationship. **Method:** A systematic literature search was conducted in order to extract studies that investigated a social or interpersonal mediator in the relationship between attachment style and depressive symptoms. Studies were included if they conducted a mediation analysis, used standardised measures, focused on an adult population, and were peer-reviewed. Quality ratings were assessed for each study. **Results:** Twelve mediators were assessed in 10 studies that used robust mediation analysis. Ten mediators related to social support, social anxiety, social self-efficacy, relationship satisfaction, interpersonal negative events, and interpersonal dependency, were found to be significant. Two studies failed to find significant mediation effects for social support and social self-efficacy. The majority of studies had a number of methodological limitations and are interpreted with caution. **Discussion:** The findings from this review suggest that specific social and interpersonal variables have a mediating role in the relationship between attachment and depressive symptoms. However due to the methodological limitations of the studies included in this review it is not possible to make definite causal inferences. There are clear socio-political, research and clinical implications which are addressed in light of the findings in this review.

Key words: Attachment, depression, mediator, interpersonal, social.

3.2 Introduction

Attachment theory provides a framework from which individual differences in mental health can be understood through a developmental lens. According to Bowlby's theory of attachment (1969), a care giver that provides consistency and warmth provides a child with a 'secure base', helping the child to develop a working model of self as worthy and loveable, and a working model of others as trusting, consistent, and warm. Conversely, inconsistent or unpredictable care from a care provider promotes a child's insecure attachment and the development of a working model of self as unworthy and unlovable, and others as untrustworthy and unreliable. Children with an insecure attachment learn to manage their distress using strategies such as avoidance of proximity and care, or anxious and excessive proximity seeking.

Ainsworth (1978) provided an empirical basis for Bowlby's claims through the development of the 'strange situation' procedure, a semi-structured observational research tool that measures the quality of attachment between a carer and child. The researchers identified three classifications of attachment: secure, insecure avoidant, insecure ambivalent/resistant, and later added a fourth, insecure disorganized-disoriented. Secure children were easily soothed by their care giver when distressed; avoidant children maintained their independence from their care giver and did not seek contact with them when distressed; ambivalent/resistant children exhibited excessively dependent behaviour as well as rejection of the caregiver; and disorganized/disoriented children presented with unorganized patterns of behaviour when interacting with their care giver. Bowlby (1969) stated that these attachment systems provide a template, or 'internal working model', of what we expect and

predict in all relationships, how we view ourselves, and how we regulate our emotions.

Attachment theory was first applied to adults through the development of the adult attachment interview (AAI; George, Kaplan & Main, 1985), a semi-structured interview designed to assess attachment representations in adults. Respondents are classified as belonging to one of four attachment styles, which map onto Ainsworth's categorisations: secure, dismissing, preoccupied, and unresolved/disorganised. The AAI continues to be a commonly used measurement of attachment in research today, and is considered to be the most reliable and valid (Ravitz et al., 2010). Hazan and Shaver (1987) later introduced a methodological and conceptual shift towards romantic love as a proxy for adult attachment and developed a three-category classification: secure, avoidant, and anxious ambivalent. Brennan, Clark & Shaver (1998) subsequently introduced a two dimensional framework of attachment (anxiety and avoidance).

A host of self-report measures have since been developed to assess adult attachment through the construct of romantic love (Bartholomew & Horowitz, 1991; Collins & Read, 1990; Collins, 1996; Fraley, Waller & Brennan, 2000). The use of several attachment measures is evident across the literature, and debate continues regarding the most appropriate measure in terms of validity, and whether attachment should be regarded as a categorical or dimensional construct, or a state or trait (Fraley, Hudson, Heffernan, & Segal, 2015; Ravitz et al., 2010; Shi, Wampler, & Wampler, 2014).

3.2.1 Attachment and Depression

It has been argued that an individual's attachment orientation will have an impact on the way in which they relate to others, regulate emotions and cope during stressful times (Lopez, Mauricio, Gormley, Simko & Berger, 2011; Wei et al., 2005). An insecure attachment has been found to be associated with psychological distress and negative emotion (Mikulincer & Shaver, 2007; Wei, Vogel, Ku, & Zakalik, 2005) and a significant relationship exists between an insecure attachment and depression (Bifulco, Moran, Ball & Bernazzani, 2002; Carnelley, Pietromonaco & Jaffe, 1994; Scharfe, 2007). Developmental adversity or abuse has been found to be a key factor in disrupting attachment security, which then serves as a pathway to depression (Bifulco et al., 2006). However *how* insecure attachment and depression are related is less well understood as a result of limited research formally investigating mediating factors.

Interpersonal theories of depression, which suggest that it is interpersonal (i.e. relational) factors and processes that serve to maintain and perpetuate depression, offer a plausible way in which to understand this relationship (Coyne, 1976; Lewinsohn, 1974). For instance an individual with an anxious or ambivalent attachment, characterised by a fear of abandonment in relationships, can place a strain on relationships due to excessive reassurance seeking, proximity seeking, and need for approval (Shaver & Mikulincer, 2005). Conversely, an avoidant or dismissive attachment, characterised by autonomy and control in relationships, is associated with avoidance of emotional closeness, repression of internal emotions

and dependency on self (Mikulincer & Shaver, 2007; Shallcross, Howland, Bemis, Simpson & Frazier, 2011).

Coyne's interactional theory of depression (1976) states that depressive symptoms tend to initially engage the individual's social network, however excessive reassurance seeking and the persistence and repetition of symptoms leads to negative affect in others, resulting in a "self-perpetuating interpersonal system" (p.39). Constructs of this theory, such as excessive reassurance seeking, social isolation, negative affect, and interpersonal rejection by others has been evidenced in relation to depression in the literature (Joiner & Metalsky, 2001; Starr & Davila, 2008).

Psychological interventions that focus on interpersonal factors are now recommended as routine treatments for moderate to severe, and persistent/chronic depression within the United Kingdom's National Health Service (NHS; National Institute for Health and Care Excellence, 2009; Scottish Intercollegiate Guidelines Network, 2010; National Education for Scotland, 2015). Meta-analytic studies have demonstrated the growing wealth of literature and strong evidence base for interpersonal psychotherapy (IPT; Klerman et al., 1974) and cognitive behavioural analysis system of psychotherapy (CBASP; McCullough, 2000), two therapies with interpersonal factors at their core (Cuijpers, 2011; Negt et al., 2016; Weissman, Markowitz, & Klerman, 2000). IPT is a psychotherapy that is based on attachment and communication theory, and focuses on social and interpersonal issues which are seen to be the cause and maintenance of psychological distress. Similarly, CBASP, a psychotherapy model developed specifically for the treatment of chronic depression,

posits that the way in which an individual thinks and behaves in their social-interpersonal environment perpetuates interpersonal disconnection and symptoms of depression.

3.2.2 Aims of the current review

Both theory and empirical research have acknowledged that insecure attachment and depression are related. However, the process through which they are related is less well known as there is no systematic identification and evaluation of such mediators. This information would provide clinically meaningful information regarding depressive symptoms and have an impact on treatment delivery, prevention, and wider social policy. This is particularly relevant in the area of depression, where it has been found to be a highly recurrent disorder (Kessler et al., 2003) with rates of relapse (i.e. 30 – 45% over 2 years post-treatment) evident in follow up studies (Ramana et al., 1995; Surtees & Barkley, 1994). It is also relevant given the routine delivery of interpersonal psychotherapies for depression in the NHS. Taking this focus, this systematic review aimed to identify and evaluate the specific social and interpersonal mediators of the relationship between attachment style and depressive symptoms.

3.3 Methodology

3.3.1 Registration of protocol

A protocol for the current review was submitted to the PROSPERO international prospective register of systematic reviews (CRD42016051378). A copy of this protocol can be found in Appendix B.

3.3.2 Search strategy

A comprehensive systematic search was carried out in October 2016 using combined keywords from the following databases: PsychINFO (1806-2016), EMBASE (1974-2016), MedLine (1946-2016), CINAHL (1981-2016), PubMed (1957-2016), and ASSIA (1984-2016). Dates were chosen based on the maximum period by which the author could gain access. A tailored search strategy was informed by a previous systematic review and meta-analysis of mediators and adapted for suitability to the current review (Lee et al., 2015). The full search strategy can be found in Appendix C. Reference lists of included studies were scanned for any additional relevant studies. A repeat search conducted in April 2017 failed to identify any new studies appropriate for this review.

3.3.3 Inclusion/exclusion criteria

The following inclusion criteria were adhered to in all studies: (1) published in a peer-reviewed journal; (2) employed an adult population (i.e. over 18 years of age); (3) used a standardised measure of attachment style as an independent variable (4) used a standardised measure of depressive symptoms as a dependent variable; (5) used a standardised measure of the mediating variable under investigation; (6) used a formal mediation analysis to investigate the indirect relationship between attachment style and depressive symptoms; (7) assessed a social or interpersonal mediating variable; and (8) was written in English.

A measure of attachment style was considered to be valid if it was based on a standardized assessment and related to attachment categories or dimensions. A measure was considered invalid if it involved a clinician's subjective opinion of attachment style, or was interpersonally unrelated (e.g. attachment to God or attachment to objects). A mediation analysis was considered appropriate if the indirect effect of an intermediary variable was assessed. Methods of mediation analysis include structural equation modelling (SEM), path analysis, and bootstrapping. Despite the low power of the Baron & Kenny (1986) approach and the Sobel test (Zhao, Lynch, & Chen, 2010), studies utilizing this method were initially included in the current review in order to assess the number and quality of literature in this area (Fritz & MacKinnon, 2007). Variables that were linked to an individual's social or interpersonal world were considered appropriate for inclusion (e.g. interpersonal style, social anxiety, conflict behaviour). This review focused on studies that employed an adult population as it was postulated that the social and interpersonal factors that mediate the relationship between attachment and depressive symptoms may differ from those implicated in a child and adolescent population.

3.3.4 Quality rating

As this review focused on studies that tested for mediation, published guidelines of quality criteria were found to be unsuitable. A quality rating measure was thus created based on the aims of the current review, and with reference to a published systematic review and meta-analysis of mediation and observational studies (Lee et al., 2015). Recommendations by Strengthening the Reporting of Observational Studies in Epidemiology (STROBE; Vandenbroucke et al., 2007) also informed the

development of this rating. The devised quality rating measure consisted of seven items, with response ratings “good”, “adequate”, or “poor”, leading to a total score range of 0 - 16 (see Appendix D for this measure). This provided a pragmatic classification system to review the quality of the included studies. Studies that tested for mediation using low powered or incomplete methods are presented separately as these methods are no longer considered reliable and risk skewing the overall findings of this review. Table 2 and 3 provide a quality rating of each study.

3.3.5 Search results

The initial literature search provided a total of 2,386 potential studies (153 from ASSIA, 139 from CINHAL, 1628 from OVID, and 466 from PubMed). Duplicates were removed which resulted in 1,116 studies. Studies were extracted by their title on the basis that there was no relevance to the research question (i.e. related to non-human subjects, bio-medical sciences, attachment to objects or religion). Abstracts were then screened and studies were removed if the inclusion/exclusion criteria were not met. The remaining 103 studies were obtained in full and subject to the screening process again, which resulted in 51 studies that assessed a potential mediating variable. These studies were screened by the first author for specific social and interpersonal mediators, and subsequently screened by another researcher to ensure reliability of screening. 21 studies met the eligibility criteria. This search process is presented below as a flowchart in Figure 1.

3.3.6 Data extraction

Data was extracted from the studies using a form that was specifically developed for the current review. Extraction data included author, year of publication, research aims, setting and design, sample characteristics (i.e. sample size, age range, and gender distribution), measures used, mediator(s) under investigation, method of mediation analysis, beta coefficient statistics, and confidence intervals. Information was requested from a corresponding author if the above information was not present in the study. In cases where the corresponding author did not respond, a subsequent email was sent and copied to a second author. Where this failed to generate a response, attempts to obtain the data were terminated. A template contact form was developed for this purpose and can be found in Appendix E.

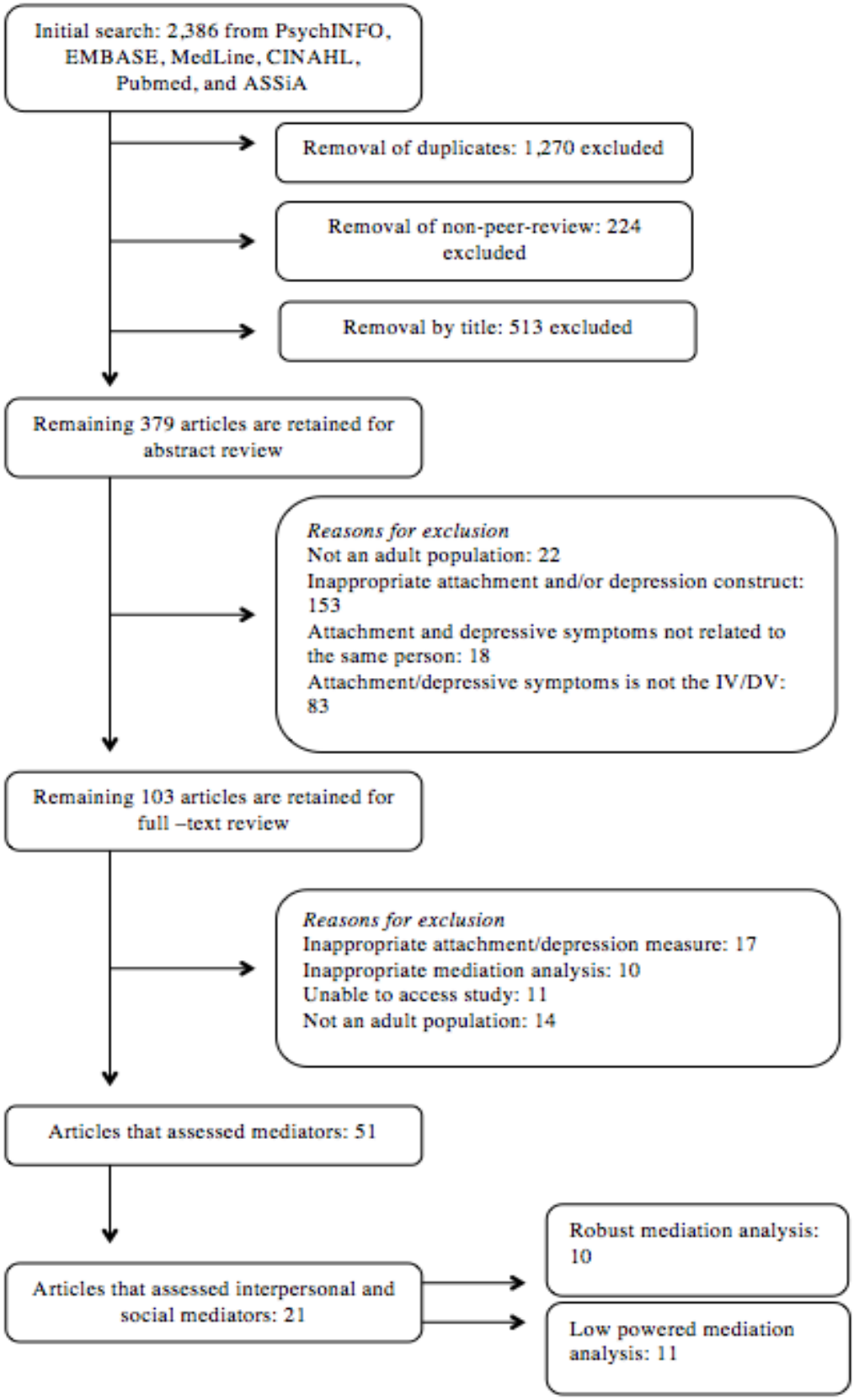

Figure 1
Systematic review search strategy flowchart.

3.4. Results

3.4.1 Study characteristics

Ten studies included in the review investigated at least one social and interpersonal mediator in relation to attachment style and depressive symptoms using more robust methods of mediation. The majority of studies (n = 7) were cross-sectional in nature, with the exception of three studies that utilized a longitudinal design (Clout & Brown, 2016; Hankin, Kessel, & Abela, 2005; Wei, Russel, & Zakalik, 2005). Sample sizes ranged from 105 - 425 (64% female) with an overall age range of 18 - 73 years. The majority of studies came from non-clinical settings (n = 8). Table 1 outlines the study characteristics, including design, sample source, sample size, age range, gender distribution, measures used, and method of mediation.

Eleven studies investigated social and interpersonal mediators using low powered or incomplete mediation analysis. As can be seen in Table 2, the majority of studies (n = 9) were cross-sectional in nature, with the exception of two studies that utilised a longitudinal design (Iles et al., 2011; Wijngaards-de Meij et al., 2007). Sample sizes ranged from 92 – 438 (54% female), with an overall age range of 18 – 88 (however one study - Hinnen et al., 2012 - did not report the age range of their sample and did not respond to the authors request for this information). Seven studies were completed in non-clinical settings, with the remaining four studies completed with samples in relation to cancer, social anxiety, postpartum, and human immunodeficiency virus (HIV).

Table 1

Characteristics of the studies under review (robust mediation analysis)

Author(s)	Design	Sample source	Sample size (female n)	Age of sample	Measure of attachment	Measure of depression	Mediator construct	Measure of mediator	Mediation analysis
Keleher, Wei & Yu-Hsin Liao, 2010	Cross-sectional	Lesbians; LGBT networks	163 (163)	18 – 63 (M=30)	ECR-S	DASS-S	Social support	MSPSS	Path analysis; bootstrap
Dodd et al., 2015	Cross-sectional	Spinal cord injury patients; inpatient	106 (38)	18 - 63 (M=44)	ECR	PHQ-9	Social support	SPS	Path analysis
Cantazaro & Wei, 2010	Cross-sectional	University students	424 (263)	18-32 (M=19)	ECR	CES-D-S; SRDS; DASS-D-S	Interpersonal dependence	DEQ; PSI-II	SEM; bootstrap
Wei, Mallinckrodt, Larson & Zakalik, 2005	Cross-sectional	University students	425 (261; 4 undisclosed)	18 – 36 (M=19)	ECR	CES-D	Need for reassurance; capacity for self-reinforcement	EXRS FSRQ	SEM; bootstrap
Manes et al., 2016	Cross-Sectional	Patients with Social Anxiety Disorder	194 (89)	18 - 68 (M=35)	ECR-R German	BDI	Social anxiety	LSAS	Bootstrap
Hankin, Kessel, Abela, 2005 (study 3)	Longitudinal study	University students	233 (163)	18-23 (M=19)	AAQ	BDI; MASQ	Interpersonal negative events	NLEQ	SEM
Paech et al., 2016	Cross-sectional	General population	343 (212)	18 – 73 (M=34)	ECR-S modified	CES-D modified	Positive relations with others	SPWB – positive relations subscales	Bootstrap
Wei & Ku, 2007	Cross-sectional	University students	390 (244)	18 – 28 (M=19)	ECR	DASS	Social self-efficacy	RSES	Path analysis; bootstrap

Wei, Russel, Zakalik, 2005	Longitudinal	University students	308 (184)	18-20 (M=18)	ECR	CES-D	Self disclosure; social self efficacy; loneliness	SSES; DDI; LS	SEM; bootstrap
Clout & Brown, 2016	Longitudinal	Pregnant women; non-clinical.	105 (105)	20 – 43 (M=32)	ECR	DASS; EPDS	Marital relationship quality	DAS	Baron & Kenny; bootstrap

Measures of attachment: ECR: Experiences in Close Relationships (Brennan et al., 1998); ECR-R: Experiences in Close Relationships Revised (Fraley et al., 2000); ECR-S: Experiences in Close Relationship Scale Short Form (Wei, Russel, Mallinckrodt, Vogel, 2007); AAQ: Adult Attachment Questionnaire (Simpson Rholes, Phillips, 1996); ASQ: Attachment Style Questionnaire (Feeney, Noller, Hanrahan, 1994). **Measures of depression**: DASS: Depression, Anxiety and Stress Scale (Lovibond & Lovibond, 1995); BDI: Beck Depression Inventory (Beck, Ward, Mendelson, Mock & Erbaugh, 1961; Beck, Steer, Brown, 1996); CES-D: Centre for Epidemiological Studies Depression Scale (Radloff, 1977); SRDS: Self Rating Depression Scale (Zung, 1965); EPNDS: Edinburgh Post Natal Depression Scale (Cox, Holden & Sagovsky, 1987); PHQ-9: Patient Health Questionnaire (Kroenke, Spitzer, & Williams, 2001); Mood and Anxiety Symptom Questionnaire (MASQ; Watson et al., 1995). **Measures of mediators**: EXRS: Excessive Reassurance Seeking (Joiner & Metalsky, 2001); FSRQ: Frequency of Self-Reinforcement Questionnaire (Heiby, 1982); DEQ: Depressive Experiences Questionnaire (Blatt, D'Affitti, & Quinlan, 1976); Personal Style Inventory-II (Robins et al., 1994); MSPSS: The Multidimensional Scale of Perceived Social Support (Zimet, Dahlem, Zimet & Farley, 1988); LSAS: Liebowitz Social Anxiety Scale (Liebowitz, 1987); SPWB: Scales of Psychological Well-Being (van Dierendonck, Diaz, Rodriguez-Carvajal, Blanco, & Moreno-Jimenez, 2008); SPS: The Social Provisions Scale (Cutrona & Russell, 1987); NLEQ: Negative Life Events Questionnaire (Metalsky & Joiner, 1992); RSES: Rosenberg Self Esteem Scale (Rosenberg, 1985); DDI: Distress Disclosure Index (Kahn & Hessling, 2001); DAS: Dyadic Adjustment Scale (Spanier, 1976); SSES: Social Self-Efficacy Scale (Sherer et al., 1982); LS: UCLA Loneliness Scale (Version 3; Russell, 1996).

Table 2

Characteristics of the studies under review (low powered/incomplete mediation analysis)

Author(s)	Design	Sample source	Sample size (female n)	Age of sample	Measure of attachment	Measure of depression	Mediator construct	Measure of mediator	Mediation analysis
Hinnen et al, 2012	Cross sectional	Patients with HIV; clinical setting	233 (24)	18-not reported (M=47)	RQ	BDI	Perceived social support	MOS-SSS	Baron & Kenny; Sobel
Cruddas et al., 2012	Cross-sectional	University students	92 (81)	18-52 (M=24)	AAS	DASS	Fear of disclosure	ITQ (fear of disclosure subscale)	Baron & Kenny; Sobel
Iles et al., 2011	Longitudinal study	Women postpartum and partners; clinical setting	413 (207)	19-56 (Female M=32; Male M=34)	ECR	EPNDS	Social support	SOS	Multiple regression; Sobel
Permuy et al., 2010	Cross-sectional	University students	164 (142)	18 – 31 (M=21)	RQ	BDI	Sociotropy; autonomy	PSI-II	Baron & Kenny; Sobel
Cooley et al., 2010	Cross-sectional	University students	93 (93)	18 - 51 (M=21)	RQ	BDI-II	Conflict management	ICQ	Baron & Kenny
Marchand-Reilly (2009)	Cross-sectional	University students	110 (83)	18-25 (M=19)	AAS	CES-D	Relationship conflict	CRBQ	Baron & Kenny
Aderka et al., 2009	Cross-sectional	Community sample	102 (72)	20 – 58 (M=29)	ECR	BDI	Social anxiety	LSAS-SR	Baron & Kenny

Besser & Priel, 2008	Cross-sectional	Older adults; community sample	113 (52)	69 – 85 (M=72)	RQ	DEQ; CES-D	Neediness	DEQ	Baron & Kenny; Sobel
Rodin (2007)	Cross-sectional	Cancer patients (stage IV); clinical setting	326 (140)	24-88 (M=62)	ECR	BDI-II	Social support	MOS-SSS	Baron & Kenny; Sobel
Wijngaards-de Meij et al., 2007	Longitudinal	Couples who lost a child; non-clinical	438 (219)	26-68 (M=42)	AAS	SCL-90	Marital satisfaction	RISS	Multilevel regression analysis; Sobel
Eng et al., 2001	Cross-sectional	Patients with Social Anxiety Disorder	118 (48)	19-65 (M=32)	RAAS	HAM-D; BDI	Social anxiety	LSAS	Baron & Kenny

Measures of attachment: ECR: Experiences in Close Relationships (Brennan et al., 1998); RQ: Relationship Questionnaire (Bartholomew & Horowitz, 1991); AAS: Adult Attachment Scale (Collins & Read, 1990); RAAS: Adult Attachment Scale Revised (Collins, 1996). **Measures of depression:** DASS: Depression, Anxiety and Stress Scale (Lovibond & Lovibond, 1995); BDI: Beck Depression Inventory (Beck et al., 1961); BDI-II: Beck Depression Inventory-II (Beck, Steer & Brown, 1996); CES-D: Centre for Epidemiological Studies Depression Scale (Radloff, 1977); DEQ: Depressive Experience Questionnaire (Blatt et al., 1976); EPNDS: Edinburgh Post Natal Depression Scale (Cox et al., 1987); HAM-D: Hamilton Depression Rating Scale (Hamilton, 1967); SCL-90: Symptom Checklist-90 (Derogatis, Lipman, & Covi 1973). **Measures of mediators:** Personal Style Inventory-II (Robins et al., 1994); ITQ: Interpersonal Trust Questionnaire (Forbes & Roger, 1999); CRBQ: Conflict-Resolution Behavior Questionnaire (Rubenstein & Feldman, 1993); ICQ: Interpersonal Competence Questionnaire (Buhrmester, Furman, Wittenberg & Reis, 1988); LSAS: Liebowitz Social Anxiety Scale (Liebowitz, 1987); MOS-SSS: Medical Outcomes Study Social Support Survey (Sherbourne, 1991); SOS: Significant Others Scale (Power, Champion, & Aris, 1998); RISS: The Relational Interaction Satisfaction Scale (Buunk, 1990).

3.4.2 Quality ratings of studies

Studies were assessed in relation to how well they addressed the aims of the current review. Overall, out of a possible score of 16, the highest rated study scored 12 (Clout & Brown, 2016). There were common methodological limitations across all studies such as a failure to conduct a power calculation to indicate the necessary sample size to detect an effect, and the predominant reliance on cross-sectional data, which fails to temporally order variables and thus cannot infer causation.

As mentioned earlier, over half of the studies in the review (n = 12) utilised low powered or incomplete methods of mediation which are at increased risk of type II error. All studies reported a broad theoretical framework (i.e. attachment theory) upon which to base their research questions and hypotheses. However some mediators were investigated without strong theoretical premises or empirical evidence, and thus received lower quality ratings. The majority of studies used opportunistic and non-randomised sampling methods, without specific inclusion/exclusion criteria, and failed to account for possible confounding variables that may be associated with their sample, thus reducing the generalisability of the findings. The quality rating for each study can be found in Table 3 and Table 4. Seventy percent of the studies were rated for quality by another researcher (LM) to ensure inter-rater reliability.

3.4.3 Measures of attachment and symptoms of depression

Four self-report measures of attachment style, and their revised versions, utilizing both categorical (RQ) and dimensional ratings, were employed in the 21 studies in this review. Three of these measures relate specifically to adult romantic and social relationships (i.e. ECR, AAQ, AAS) whereas the RQ relates to relationships in

general. Ravitz et al. (2010) conducted a 25-year review of all attachment measures and found these measures to have adequate to excellent psychometric properties. The AAI was deemed to be the most valid and reliable measure but was not utilised in any of the studies included in this review. Eleven measures of depressive symptoms were used in the 21 studies. The most commonly used measures were the BDI, CES-D, and DASS, which have all been found to have good reliability and validity in clinical and non-clinical populations (Beck, Steer & Garbin, 1988; Beck et al., 1961; Beck et al., 1996; Knight, Williams, McGee, & Olaman, 1997; Radloff, 1977; Whisman, Perez, & Ramel, 2000). The remaining eight measures – PHQ-9, SRDS, MASQ, EPDS, HAM-D, DEQ, SCL-90 – all assess depressive symptoms and have good internal reliability and validity (Bech et al., 2014; Martin, Rief, Klaiberg, & Braehler, 2006; Reynolds & Kobak, 1995; Riley & McCranie, 1990; Teissedre & Chabrol, 2004;).

3.4.4 Mediation analyses

A number of studies (n = 11) used Baron & Kennys' (1986) method of mediation. This method involves a series of independent linear regression models to infer mediation. Step one requires the independent variable (X) and the dependent variable (Y) to be significantly associated for further analysis to continue. This step has been criticized as simulation studies have found that it is possible for a mediation effect to exist despite the non-significance of X and Y (MacKinnon, Krull, & Lockwood, 2000; MacKinnon, Lockwood, Hoffman, West & Sheets, 2002). Analysis may be terminated at this step inaccurately. Step two requires X to be significantly associated with the mediator (M), and step three requires M to be significantly associated with Y, when X is controlled for. Lastly, step four requires the direct effect (i.e. the pathway from X to Y when controlling for M) to be either non-significant or reduced in

comparison to the total effect, representing "full" and "partial" mediation respectively. This approach infers mediation effects through a series of hypothesis tests, rather than estimating the size and significance of the indirect effect of X on Y. Studies have found this method to be the lowest in power, and specifically at risk of failing to detect effects (i.e. Type II error) (Fritz & MacKinnon, 2007; MacKinnon et al., 2002). The reference to "full" and "partial" mediation has also been criticized on the grounds that it is impossible to fully account for all variance, and doing so reduces the expansion of theoretical models and research in that area (Rucker, Preacher, Tormala & Petty, 2011).

The product of coefficients approach, known as the Sobel test (Sobel, 1982) was also used in several of the studies in this review (n = 7), typically as a supplement to the Baron & Kenny method (n = 5).The Sobel test estimates the ratio of the indirect effect *ab* to its standard error and uses this as a test statistic to determine whether it is significant at the .05 level (Hayes, 2009). A notable limitation of the Sobel test is the assumption that the indirect effect is normally distributed. However, the distribution of the indirect effect *ab* is rarely symmetrical, and as a result this test has low power. It is thus recommended that other tests that do not require such assumptions (e.g. bootstrapping) are used in replacement (Hayes, 2009; Stine, 1990).

More robust studies, such as bootstrapping, SEM and path analysis, were also utilized in the review (n = 10), and it is these studies that were considered when synthesizing findings. Bootstrapping is a non-parametric method that overcomes difficulties with small sample size and asymmetrical distribution through its process of resampling. It generates a percentile-based bootstrap confidence interval that allows one to infer

whether there is a true mediation effect. Simulation studies have found that bootstrapping is more powerful than the Baron & Kenny method and the Sobel test (MacKinnon et al., 2004; Williams & MacKinnon, 2008). Similarly, SEM and path analysis have also been found to be more powerful methods for testing mediation effects as they simultaneously test relationships among several independent and dependent variables, whilst controlling for measurement error, and allow for ease of extension to include multiple mediators and/or moderators (Gunzler, Chen, Wu, & Zhang, 2013; Hayes, 2009).

3.4.5 Interpersonal and social mediators

Ten studies, that utilized robust methods of mediation, analysed the mediating role of 12 social and interpersonal mediators, and have been grouped into thematic categories below.

3.4.5.1 Social support

Two studies investigated social support as a mediator between attachment style and depressive symptoms. These were conducted in both clinical and non-clinical settings. Both studies utilized a cross-sectional research design and used path analysis to test for mediation, with Kelleher et al. (2010) additionally conducting bootstrapping. Dodd et al. (2015) examined the mediating effect of social support between attachment (i.e. anxiety and avoidance subscales from the ECR) and depression in a sample of 106 individuals with spinal cord injuries. Their suggested model was proposed based on empirical evidence that found associations between social support and more positive health outcomes, and the theoretical plausibility that attachment style would affect the ability to utilize social support. Although both avoidant and anxious attachment were significantly correlated with depression (r = .37, p <.01; r

= .40, p <.01 respectively), social support was not found to be associated with depression (r = -.19, p >.01), and thus not considered to have a mediating effect. The authors outlined that the small sample size is a limitation of this study, and that a larger sample may have resulted in paths reaching statistical significance. Additionally, the nature of the sample may have affected the results, specifically that the recent nature of the injury and rehabilitation inpatient status may have resulted in an increased personal and professional support system.

Based primarily on theoretical underpinnings due to a lack of empirical literature, Kelleher, Wei & Liao (2010) investigated whether perceived support from others would act as a mediator between attachment (anxiety and avoidance subscales from ECRS) and depressive symptoms. Using a sample of 163 lesbian women recruited through a variety of public channels, the authors used path analysis and bootstrapping to test for mediation. Perceived general support from others was found to mediate the association between attachment anxiety and depressive symptoms. The indirect effect was tested for significance using 1,000 bootstrap samples, indicating that it was significant (b = 0.15, SE = .02, 95% CI [0.03, 0.11]). Perceived social support was not found to mediate the relation between attachment avoidance and depressive symptoms (b = .04, SE = .02, 95% CI [-0.02, 0.05]). This finding suggests that those with higher levels of attachment anxiety, but not attachment avoidance, perceive lower levels of support from others, which in turn is associated with higher depressive symptoms.

Table 3
Quality ratings of studies (robust mediation analysis)

Author	Theoretical framework	Representative sample	Study design	Inclusion/ exclusion criteria	Valid/ reliable measures	Confounding variables	Mediation analysis well powered	Power calculation	Total quality rating
Paech et al., 2016	2	1	0	0	1	0	2	0	6
Manes et al., 2016	2	2	0	2	1	0	2	0	9
Clout & Brown, 2016	2	2	1	2	2	0	1	2	12
Dodd et al., 2015	2	2	0	2	2	0	2	0	10
Kelleher et al., 2010	1	1	0	2	2	0	2	0	8
Cantazato & Wei, 2010	2	1	0	0	2	0	2	0	7
Wei & Ku, 2007	2	1	0	0	2	0	2	0	7
Wei, Russel, Zakalik, 2005	2	2	1	0	2	1	2	0	10
Wei, Mallinckrodt, Larson & Zakalik, 2005	2	1	0	0	2	0	2	0	7
Hankin et al., 2005	2	1	1	0	2	0	2	0	8

Table 4
Quality ratings of studies (low powered/incomplete mediation analysis)

Author	Theoretical framework	Representative sample	Study design	Inclusion/ exclusion criteria	Valid/ reliable measures	Confounding variables	Mediation analysis well powered	Power calculation	Total quality rating
Hinnen et al., 2012	2	1	0	2	2	1	0	0	8
Cruddas et al., 2012	1	0	0	0	2	0	0	0	3
Iles et al., 2011	2	2	1	2	1	0	0	0	8
Cooley et al., 2010	2	1	0	0	2	0	0	0	5
Permuy et al., 2010	2	1	0	0	1	0	0	0	4
Aderka et al., 2009	2	1	0	0	2	0	0	0	5
Marchand-Reilly, 2009	2	1	0	2	1	1	0	0	7
Besser & Priel, 2008	2	1	0	1	2	2	0	0	8
Wijngaards-ds-Meij et al., 2007	2	1	1	2	1	2	0	0	9
Rodin, 2007	2	2	0	2	2	0	0	0	8
Eng et al., 2001	2	2	0	2	2	0	0	0	8

3.4.5.2 Social self-efficacy

Two studies investigated the mediating role of social self-efficacy, which refers to the belief in one's social competence. Wei & Ku (2007) tested a conceptual model, based on theoretical conceputalisations and empirical evidence, where social self-efficacy was tested as a mediator in the relationship between attachment and psychological distress, namely depression and interpersonal distress. Their sample consisted of 390 university students, with females accounting for over 60% of the sample. Attachment was assessed using the anxiety and avoidance subscales of the ECR. Employing SEM and bootstrapping, social self-efficacy was not found to mediate the relationship between attachment anxiety and depression (*b* = -0.00, SE = .00, 95% CI = -0.00, 0.00), or attachment avoidance and depression (*b* = -0.00, SE = .00, 95% CI=-0.00, 0.00).

Wei, Russel, & Zakalik (2005) hypothesised that social self-efficacy would act as a mediator between attachment anxiety, loneliness, and depression, and that comfort level with self-disclosure would act as a mediator between attachment avoidance, loneliness, and subsequent depression in university students. Comfort with disclosure relates to the degree to which a person is comfortable sharing personally distressing information with others and in this sense relates to the social support concept where confiding can be viewed as a functional factor of positive social support. Similarly, loneliness can represent low social support. The authors employed a longitudinal design where all variables were measured at one time point, and depression was measured again after five months. Although this allowed for the temporal ordering of depression (i.e. allowing direction of effect to be inferred), both mediators were

measured at the same time point so it is not possible to identify the direction of effect. Using SEM and bootstrapping to test for mediation, and controlling for depression at time one, attachment anxiety was related to loneliness and subsequently depression at time two as mediated through social self-efficacy (b = 0.04, 95% CI [0.00, 0.02]), and attachment avoidance was related to loneliness and subsequent depression as mediated through comfort with self-disclosure (b = 0.03, 95% CI [0.00, 0.02]). These results suggest that individuals with high levels of attachment anxiety and avoidance have difficulties in social competence, which relate to loneliness and subsequent depressive symptoms. A limitation of this study is the large dropout rate in time two data (i.e. only 26% of the sample at time one participated in time two), which raises questions about the generalizability of the findings.

3.4.5.3 Social anxiety

Manes et al. (2016) was the only study in this review to assess social anxiety as a mediator between attachment and depression in individuals with social anxiety disorder (SAD). The authors employed a subset of individuals (n = 194) from a previously conducted randomized controlled trial, but did not outline what defined this subset. Using bootstrapping, social anxiety was found to mediate the association between both attachment anxiety and depressive symptoms (b = -1.06, 95% CI [-1.50, -0.44]), and attachment avoidance and depressive symptoms (b = -0.89, 95% CI [-1.49, -0.28]). This finding suggests that insecure attachment (both anxious and avoidant) in this sample is related to social anxiety, which in turn is related to an increase in depressive symptoms in individuals diagnosed with social anxiety disorder. This finding replicates the findings from Eng et al. (2001) who used low powered methods of mediation (see Table 2). The authors propose that because an insecure

attachment is linked to anxious thoughts and avoidance of interpersonal interaction, this results in a lack of positive and rewarding experiences that serve to cause and maintain depression.

3.4.5.4 Interpersonal dependency

Two studies assessed mediators relating to interpersonal dependency. Both used opportunistic methods to employ samples that were not representative of the general population, and collected data at one time point. This places limits on the generalizability of findings and the ability to infer causation. The need for reassurance from others and the capacity for self-reinforcement (i.e. an individual's ability to support and value themselves) were assessed as mediators in a university sample by Wei, Mallinckrodt, Larson & Zakalik (2005). SEM and bootstrapping was utilised to test for mediation. The need for reassurance from others was found to significantly mediate the association between attachment anxiety and depression (b = 0.11, SE = 0.06, 95% CI [0.00, 0.23]), but not attachment avoidance and depression (b = 0.00, SE = 0.06, 95% CI [-0.35, 0.07]). The capacity for self-reinforcement was found to significantly mediate the association between both anxious attachment (b = 0.20, SE = 0.05, 95% CI [0.13, 0.33]) and avoidance attachment (b = 0.10, SE = 0.04, 95% CI [0.04, 0.18]) and depression.

Table 5
Study findings (robust methods of mediation)

Author(s)	Mediation analysis	Mediation pathway tested	Path a beta coefficient (β)	Path b beta coefficient (β)	Indirect effect (b)	Confidence Intervals	Significant
Manes et al., 2016	Bootstrap	Anxiety – social anxiety – depression	-5.9*	.18*	-1.06	-1.50, -.44	Yes
		Avoidance – social anxiety –depression	-4.95*	.18*	-.89	-1.49, -.28	Yes
Clout & Brown, 2016	Baron & Kenny; Bootstrap	Anxiety – dyadic satisfaction – depression	Not reported	-.22	Not reported	-.35, -.05	Yes
		Avoidance – dyadic satisfaction – depression	Not reported	-.22	Not reported	-.38, -.07	Yes
		Anxiety – affectional expression – depression	Not reported	-.26	Not reported	-.74, .27	No
		Avoidance – affectional expression - depression	Not reported	-.26	Not reported	-.88, .14	No
Paech et al., 2016	Bootstrap	Anxiety – positive relations – depression	-.31	-.17	0.05	0.01, 0.06	Yes
		Avoidance – positive relations – depression	-.51	-.17	0.09	0.02, 0.11	Yes

Dodd et al., 2015	Path analysis	Anxiety – social support – depression	-.05	.12	-.01	Not reported	No
		Avoidance – social support – depression	-.57	.12	-.01	Not reported	No
Cantazaro & Wei, 2010	SEM; Bootstrap	Anxiety – dependence – depression	.65	.28	0.18	.14, .28	Yes
		Avoidance – dependence - depression	-.35	.28	-0.10	-.23, -.10	Yes
Kelleher, Wei & Yu-Hsin Liao, 2010	Path analysis; Bootstrap	Anxiety – social support – depression	-.37	-.41	0.15	.027, .11	Yes
		Avoidance – social support – depression	-.10	-.41	0.04	-.02, .05	No
Wei & Ku, 2007	SEM; Bootstrap	Anxiety – social self efficacy – depression	.03	-.03	-.00	-.00, .00	No
		Avoidance – social self efficacy - depression	.06	-.03	-.00	-.00, .00	No
Hankin, Kessel, Abela, 2005 (study 3)	SEM	Anxiety – Interpersonal negative events – depression	.30	Not reported	Not reported	Not reported	Yes
		Avoidant – interpersonal negative events - depression	.22	Not reported	Not reported	Not reported	Yes

Wei, Russel, & Zakalik, 2005	SEM; Bootstrap	Anxiety – social self-efficacy – loneliness – depression	-.44	-.37 -> .24	.04	0.00, 0.02	Yes
		Avoidance – distress disclosure – loneliness - depression	-.38	-.37 -> .24	.03	0.00, 0.02	Yes
Wei, Mallinckrodt, Larson, & Zakalik, 2005	SEM; Bootstrap	Anxiety –reassurance from others – depression	.61	.18	0.11	0.00, 0.23	Yes
		Avoidance – reassurance from others – depression	.00	.18	.00	-0.35, 0.06	No
		Anxiety – self-reinforcement – depression	-.45	-.45	.20	0.13, 0.33	Yes
		Avoidance – self-reinforcement - depression	-.22	-.45	.10	0.04, 0.18	Yes

* Unstandardized regression coefficients

Cantazaro & Wei (2010) similarly used SEM and bootstrapping to assess whether dependence on others would act as a mediator in the relationship between attachment (anxiety and avoidance subscales from the ECR) and depressive symptoms in a sample of 424 university students. Using SEM and bootstrapping, dependence on others was found to significantly mediate the relationship between attachment anxiety and depressive symptoms (*b* = 0.18, 95% CI [0.14, 0.28]), and between attachment avoidance and depressive symptoms (*b* = -0.10, 95% CI [0.13, 0.29]). This finding suggests that individuals with a higher anxiety or avoidant attachment are more likely to depend on others, which relates to an increase in depressive symptoms. This is an interesting finding given the theoretical assumption that those with an avoidant attachment style are differentiated from those with an anxious attachment style as a result of their independence and avoidance of support from others. This finding suggests that despite this behaviour, those with an avoidant attachment style are increasingly likely to depend on others, which in turn relates to depressive symptoms.

3.4.5.5 Relationship satisfaction/positivity

Two studies investigated mediators relating to the satisfaction or positivity of ones relationships. Paech, Schindler & Fagundes (2016) investigated whether positive relations with others mediate the relationship between attachment style and depressive symptoms in a community sample of 343 adults. The authors tested for moderated mediation effects using bootstrapping methods (Preacher, Rucker & Hayes, 2007). Positive relations with others was found to be a significant mediator in the relationship between avoidant attachment (*b* = 0.09, BC 95% CI [0.02, 0.11]) and depressive symptoms, and anxious attachment (*b* = 0.05, 95% CI [0.01, 0.06]) and depressive symptoms. This finding indicates that individuals high on

insecure attachment (i.e. either avoidant or anxious) report less positive relations with others, which in turn relates to higher depressive symptoms.

Clout & Brown (2016) conducted a longitudinally designed study to evaluate whether marital relationship quality during pregnancy mediated the relationship between attachment style and symptoms of depression, anxiety and stress postpartum. The study's hypotheses were generated on the basis of limited empirical evidence, but with theoretical relevance. Although this study was sufficiently powered to detect a small to medium effect size, and used bootstrapping to determine significance of the indirect effect, the authors report following Baron & Kennys' (1986) required conditions for mediation which is low powered. Marital relationship quality was assessed using the Dyadic Adjustment Scale (Spanier, 1976) which produces four subscales, namely dyadic consensus, dyadic satisfaction, dyadic cohesion, and affectional expression, and were all tested for mediation. Dyadic satisfaction was the only subscale found to mediate the relationship between anxious attachment to depression (p = .01, 95% [-0.35, -0.05]), and attachment avoidance to depression (p = .01, 95% CI [-0.38, -0.07]). This finding suggests that women with an avoidant or anxious attachment are at an increased risk of experiencing depressive symptoms postpartum if they experience marital dissatisfaction. However the authors do not report full statistical parameters in order to ascertain a mediation effect (i.e. beta values) and thus these results should be interpreted with caution.

3.4.5.6 Interpersonal negative events

Hankin, Kassel, & Abela (2005) was the only study to look at the role of interpersonal negative events as a mediator between anxiety and avoidance attachment styles and depressive symptoms over the course of two years. They employed a longitudinal design with

233 university students in order to account for the temporal precedence of variables, however measured the mediator and depressive symptoms at the same time point which means it is not possible to identify the effect order of these two variables. Participants were asked to complete a repeat set of measures two years following their initial completion and the study retained 90% of the original sample. The authors report using SEM to test for mediation and state that interpersonal negative events mediated the relationship between anxious and avoidant attachment, and time two depressive symptoms. The authors do not provide full test parameters in order to evidence this finding and failed to respond to the author's correspondence requesting clarification. These results should therefore be interpreted with caution.

3.5 Discussion

The current review aimed to understand in more complexity the relationship between attachment style and depressive symptoms by identifying and evaluating significant mediators in the literature. Social and interpersonal mediators were the focus of this review given the relevance of these variables in a depressed population and the growing evidence base for interpersonal psychotherapies in the treatment of depression, as well as their relation to attachment theory.

Several variables were found to have mediation effects including social support, social anxiety, social self-efficacy, relationship satisfaction, interpersonal negative events, and interpersonal dependency. These results build on the already existent evidence that insecure attachment and depressive symptoms are indeed associated, and provides support for the theoretical assumptions that an insecure attachment impacts an individual's ability to utilize

social structures and relate to others constructively which is associated with depressive symptoms. Although this review focused on studies that used more robust statistical methods to detect mediation effects, they all contained methodological limitations that limit the ability to infer causation and make definite conclusions. Despite this, the synthesis of findings provides a fruitful discussion on the variability of the results, methodology, measures, and samples, and the current state of research in this field.

3.5.1 Methodological and statistical limitations of the studies

As mentioned already, there are a number of methodological and statistical limitations evident in the studies included in this review such as the use of cross sectional research design and university students as sample populations. As the empirical associations between social and interpersonal factors and clinical depression are well established, it is surprising that a sample of individuals with a diagnosis of clinical depression was not employed in any of the studies. Identifying the mediators in this population could provide novel findings, different from that of a non-clinical sample. Over half of the studies in this review employed low powered and incomplete methods of mediation which are now considered to be obsolete due to the development of more sophisticated methods (Hayes, 2009; Rucker et al., 2011).

The variability in which authors report findings of mediation analyses create difficult conditions for readers to interpret and make their own informed conclusions. As mediation studies as a field continues to develop, there is a lack of standardized or recommended reporting guidelines. This would be important for future research to develop in this area. These limitations reduce the ability to make definite claims about the mediational pathways, and thus there is a need for further research to address this issue.

3.5.2 Limitations in measurement of attachment

The studies in this review employed various self-report questionnaires with both categorical and dimensional frameworks to measure attachment style, which limits the comparability across studies. The use of categorical versus dimensional measures of attachment is a contentious issue within this field (Ravitz et al., 2010). Categorical measures are predominantly criticized for their failure to account for variance within attachment styles, for attaching an all-encompassing label to an individual (Crittenden, 2000), and for their reduced statistical power in comparison to dimensional measures (Fraley & Shaver, 2000). Despite this, one of the more widely used categorical measures, the AAI, is considered to be one of the most reliable measures when compared to all other measurements of attachment in a twenty-five year period (Ravitz et al., 2010). Interestingly, the AAI was not utilised in any of the studies in this review.

Categorical measures continue to be employed widely in research and this may be due to the clinical utility of assigning categories in accordance with prototypes (Ravitz et al., 2010). Some researchers argue that due to the underlying principles of attachment theory, it does not make any difference what classification system is used (Waters & Beauchaine, 2003), whereas recent empirical evidence, using taxometric analysis, has suggested that attachment styles may be continuously distributed (Fraley et al., 2015). This initial evidence however is based on the ECR-RS using two non-clinical and unrepresentative samples, and does not take into consideration other measurements that are widely used, such as the AAI. Further research is needed in order to delineate which framework, either categorical or dimensional, is most appropriate on a clinical, research, and conceptual level. There are other complexities in relation to the study of attachment that are relevant, but beyond the scope of this review. In

particular, whether attachment is a state or trait, and whether attachment differs in accordance to situation and context, is still debated.

3.5.3 Socio-political implications

Clinical and research implications formulated from the findings of this review should be considered in light of the neoliberalist ideologies that are currently endorsed in Western society (i.e. values of individual responsibility and autonomy, the increasing privatization of public services). Everett (2010) highlights that although attachment research has contributed to the implementation of child welfare policies, little attention has been placed on the attachment needs of adults.

Given this review has evidenced the social and interpersonal mediators in the pathway from insecure attachment to depressive symptoms in adults, the very structures that impact social and interpersonal connectedness and attachment style should be scrutinised because of their influence on the social and interpersonal environment (Carr & Costas Batlle, 2015). These structures include economic and governmental principles that encourage and reward individual gain and autonomy, and policies that influence the importance placed on early attachment and social welfare (e.g. the reduction of funding in public health, education and community, inflexible working contracts). Addressing these very structures that impact on the psychological well-being of individuals is particularly poignant given the current political climate, but is rarely addressed in the literature (see Carr & Costas Batlle, 2015 for a review), or voiced by psychologists (Sugarman, 2015). In order to promote secure attachment and psychological health, it is important that these issues are advocated for within the policies that govern society.

3.5.4 Clinical and research implications

Given the social and interpersonal mediational pathways evidenced in this review, prevention and minimization of the developmental trajectory of psychopathology from insecure attachment is important. Psycho-education of parental/carer attachment in early childhood as a preventative intervention would be particularly relevant in settings such as maternity services, education, foster care and adoptive parenting. Attachment-based interventions offer further avenues of prevention and minimization, however the barriers associated with the implementation from research to public health level, which are well acknowledged in the literature, pose challenges (Berlin, Ziv, Amaya-Jackson, & Greenberg, 2005; Cassidy, Jones, & Shaver, 2013).

There is a need for further research to clarify the long-term effectiveness of such interventions. This review also provides strength to the theoretical underpinnings of interpersonal psychotherapies already provided by the NHS for the treatment of depression (i.e. IPT and CBASP). Given the predominance of cross sectional research design in this review, it is important for future research in this area to consider strong methodological design for testing mediation (Imai, Keele, Tingley, & Yamamoto, 2010), taking into consideration the generalisability of their results and ability to infer causation. As mentioned earlier, it will be important for the future of mediation studies to have a standardized way in which to report findings which promotes accessibility in this field.

3.5.5 Strengths and limitations of this review

As this was the first review of its kind, a broad set of studies were included in order to provide a snapshot of the existent literature and its quality. This inevitably introduces a higher level of methodological heterogeneity and places some limitations on the conclusions

that can be made. Future research should focus on representative samples or individuals with a diagnosis of clinical depression if possible, which would allow comparison across studies. By focusing solely on specific social and interpersonal mediators in the current review, other mediators that are relevant in the association between attachment and depressive symptoms have been intentionally neglected. Despite these limitations, this research offers a wide ranging and fresh review investigating the social and interpersonal mediators between attachment and depressive symptoms, and provides useful clinical and research implications.

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4. Chapter 2: Empirical paper

Attachment Style and Reflective Functioning in Cognitive Behavioural Analysis System of Psychotherapy: A Case Series Study.

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This study has been prepared in accordance with the author guidelines of *Clinical Psychology & Psychotherapy* (see Appendix F).

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4.1 Abstract

Introduction: Cognitive behavioural analysis system of psychotherapy (CBASP) is an interpersonally-focused psychotherapy designed specifically for the treatment of chronic depression. A growing evidence base has highlighted its effectiveness, but how it is effective is less well known. Based on theoretical assumptions, this research aims to investigate the role of therapist and client attachment style and mentalization on the therapeutic alliance and clinical outcomes in CBASP. **Method:** A longitudinal case series design was employed. Twelve clients and six therapists were recruited. Session by session measures tracked symptom change and therapeutic alliance ratings throughout treatment. The Adult Attachment Interview was used to assess attachment style and was also coded for level of reflective functioning (i.e. the operationalization of mentalization). Analyses included descriptive statistics, visual analysis, and multilevel modelling. **Results:** Higher ratings of the therapeutic alliance was significantly associated with reduced symptoms of depression. Therapists' secure attachment style and mentalization had a significant positive effect on client symptom reduction, but not on the therapeutic alliance. Clients with an insecure attachment style experienced more symptom fluctuation over the course of treatment. **Discussion:** Therapist attachment style and ability to mentalize have clear implications for the therapeutic alliance and clinical outcomes in CBASP. Client attachment style and mentalization, although not statistically significant, accounted for some variance in symptom reduction and the therapeutic alliance and should be investigated further with a more robust sample that can better detect effects. Clinical and research implications of these findings are discussed.

Key words: Depression, attachment, mentalization, alliance, CBASP.

4.2 Key practitioner message

- Clients with an insecure attachment style, in comparison to secure attachment, tend to experience more symptom fluctuation over the course of treatment.
- The therapeutic alliance is an important factor in reducing symptoms of depression in CBASP.
- Therapists' secure attachment style and mentalization both have a positive effect on client symptom reduction.

4.3 Introduction

Chronic depression, also known as persistent depressive disorder (American Psychological Association (APA), 2013), is defined as a chronic and persistent reduction in mood for a minimum of two years. It affects approximately 2 – 5% of the population (National Institute for Clinical Excellence (NICE) 2009) and is associated with poorer quality of life and higher health care costs when compared to episodic or major depressive disorder (Howland, 1993; Wells, Burnam, Rogers, Hays, & Camp, 1992). It is therefore important that treatments for depression are specifically designed for chronic forms and aim to reduce the current and future risk of depressive episodes (Cuijpers, Huibers, & Furukawa, 2017; Swan & Hull, 2007).

4.3.1 Cognitive behavioural analysis system of psychotherapy (CBASP)

CBASP is the only psychotherapy that has been developed specifically for the treatment of chronic depression (McCullough, 2000). It is a manualised psychotherapy based on Piaget's model of cognitive development (Piaget, 1936), which is comprised of four consecutive stages of child development. CBASP posits that individuals experiencing chronic depression function at the "preoperational"

stage because of maltreatment or inadequate nurturance in childhood and it is "preoperational" behaviour that maintains depression. This stage refers to egocentricity and the tendency to think primarily in concrete terms, finding it difficult to see another persons' perspective. It is on this theoretical grounding that CBASP employs a variety of cognitive, behavioural and interpersonal techniques within the therapeutic relationship to help individuals evaluate their interpersonal exchanges and consider the implications of their behaviour. However, a small body of research investigating this central tenet of CBASP has produced variable results.

Mattern et al. (2015) investigated theory of mind (ToM) abilities (i.e. the ability to attribute different mental states to self and others) in 26 participants with chronic depression and matched healthy controls. Those with chronic depression had significantly lower ToM abilities, specifically affective ToM. Similarly, Zobel et al. (2010) compared ToM abilities in 30 chronically depressed individuals and matched healthy controls using two picture story tests. Chronically depressed individuals had significantly reduced abilities in all ToM tasks in comparison to the control group. Finally, Wilbertz, Brakmeier, Zobel, Harter & Schramm (2010) employed several measures of ToM with a group of 16 individuals with early onset chronic depression and matched healthy controls, but failed to find any significant differences in ToM performance across the two groups. The variability of these findings may have been impacted by the different measurements employed to assess ToM, as well as the use of ToM as a proxy for preoperational thinking.

Techniques specific to CBASP include the "significant other history" (SOH), where the client is asked to provide a list of people who have had a significant impact on

their development. This establishes any specific learning or expectancies learned from these relationships that may influence future relationships. “Situational analysis” (SA), is the cornerstone of the majority of sessions. This technique involves collaboratively dissecting an interpersonal exchange and recognising the cause and effect of self and others behaviour. Attention is paid to the consequences of the client’s behaviour, cognitions, and prior learning that may be influencing the situation.

One distinct feature of CBASP is ‘disciplined personal involvement’ (DPI), which refers to the way in which therapists become personally involved with clients in a disciplined way. Two techniques related to DPI include ‘contingent personal responsivity’ (CPR) and ‘interpersonal discrimination exercise’ (IDE). CPR involves the therapist providing the client with emotional feedback on the personal impact of their behaviour. This is used to develop the client’s insight into the consequences of their behaviour and promote opportunities for the client to correct their behaviour within a safe environment. The IDE is an exercise administered by the therapist when an 'interpersonal hotspot' is identified. It highlights the discrepancy between the therapist’s behaviour from the significant other. The aim of this technique is to enable the client to discriminate between what he/she expects as a result of prior learning in the past and the therapist’s actual response. McCullough (2003) posits that it is the therapeutic relationship that supports skill acquisition through the use of these techniques, and models positive relational experiences, which promotes interpersonal change.

4.3.2 Evidence base for CBASP

CBASP has a growing evidence base that supports its use as an effective treatment for chronic depression. Negt et al. (2016) conducted a systematic review and meta-analysis of six randomised controlled trials that compared CBASP to a variety of other psychological and pharmacological treatments. At post-treatment, CBASP was found to have a small significant combined effect (g = 0.34, SE = 0.13, 95% CI [0.09 - 0.59), p = 0.01) when compared with all other treatments. The authors note that Kocsis et al. (2009), the only study that failed to find significant positive effects, administered 12 sessions of CBASP in comparison to the other studies that administered 16 - 25. Cuijpers et al. (2011) conducted a meta-analysis into the effectiveness of interpersonal psychotherapy for chronic depression and recommended that at least 18 sessions of psychotherapy is necessary to achieve positive outcomes in chronic depression. Taking this into consideration, it is possible that the reduction of sessions in Kocsis et al. (2009) study may have contributed to the lack of significant findings.

Although all studies included in this review were regarded as having high methodological quality, they are heterogeneous in terms of study design, treatment duration, and treatment sequence, which may have affected the synthesis of effect sizes. More recently, Schramm et al. (2017) found that CBASP was significantly more effective than nonspecific supportive psychotherapy after 20 weeks of treatment, with a mean difference on the Hamilton Rating Scale for Depression (HRSD) of -2.51 (95% CI [-4.16, -0.86], p = .00; d = 0.31). This finding remained significant with a larger effect size following eight subsequent maintenance sessions over 24 weeks, with a mean difference on the HRSD of -3.13 (95% CI [-5.01, -1.25], p = .00; d =

0.39. Despite the growing evidence base supporting the efficacy of CBASP, there is less research investigating what therapist and client factors are associated with positive outcomes. This type of research aims to advance our understanding of the process of change, which has clear clinical and theoretical implications (Llewelyn & Hardy, 2001). Thus far, only therapeutic alliance, skill acquisition, and therapeutic reactance have been investigated, through use of the same data from a large multi-site trial (Arnow & Constantino, 2003; Keller et al., 2000; Klein et al., 2003; Santiago et al., 2005).

4.3.3 Attachment style

One such variable that could theoretically have an impact on clinical outcomes, specifically in relation to CBASP, is attachment style. According to attachment theory (Bowlby, 1988), a secure attachment, fostered by consistent, predictable, and responsive caregiving in early childhood, results in an ability to feel secure in relationships. Conversely, an insecure attachment, brought about by inconsistent or unreliable caregiving in early childhood, results in a negative representation of self and others, and a pattern of behaviours where one attempts to get their needs met. Anxiously attached individuals may feel dependent on others and require excessive reassurance in times of need, whereas individuals with an avoidant attachment tend to rely on themselves to meet their needs, and as a result can be dismissive of others.

Given the relational processes involved in the therapeutic dyad, it is conceivable that the development and quality of the therapeutic alliance can be understood from an attachment perspective. Indeed there is some evidence to suggest that therapists can

be viewed as attachment figures, and the therapeutic relationship may activate a client's attachment style (Farber, Lippert & Nevas, 1995; Skourteli & Lennie, 2011).

There has been a growth in research that focuses on both client and therapist attachment style, and their interaction, as influencing therapeutic alliance and treatment outcomes. Degnan, Seymour-Hyde, Harris & Berry, (2016) conducted a systematic review on the impact of therapist attachment style on the therapeutic alliance and clinical outcomes in psychotherapy. Although there was some evidence to suggest that therapists'secure attachment predicted better client outcomes, overall the results were inconsistent. The authors recommend more methodologically rigorous research in this area. Bucci, Seymour-Hyde, Harris & Berry (2016) recently investigated whether both client and therapist attachment style were related to the therapeutic alliance in psychotherapy. They found that therapist and client attachment style were not independently associated with the therapeutic alliance, however there was a significant and negative association between therapist insecure attachment and therapeutic alliance in clients with higher symptoms (fearful r = -0.63, p = .02; preoccupied r = -.80, p = .00; dismissing r = .75, p = .00), all with large effects. The authors suggest that this finding indicates that attachment style and the therapeutic alliance within psychotherapy is complex and may involve interactions with other factors such as clients'symptomology.

4.3.4 Mentalization

Related to attachment style is mentalization, the implicit and explicit recognition and interpretation of the behaviour of self and others in relation to each other's mental states. Mentalization has been operationalized as reflective functioning (RF) which

refers to the psychological processes that underpin the ability to mentalize (Fonagy, Target, Steele & Steele, 1998). According to Fonagy & Target (1996), mentalization is developed from the opportunity in early childhood to observe and understand a primary caregiver's mental state. This is facilitated by the caregiver's accurate recognition, interpretation, and contained reflection of the child's emotions in their reactions and behaviours towards the child. A secure attachment enables a child to think about their caregiver's mental state via a trusting and predictable relationship. Conversely, an insecure attachment may result in an excessive preoccupation with one's own mental state, or avoidance and dismissal of the mental states of self and others (Fonagy & Target, 1997). Mentalization allows one to develop a sense and meaning of the self and others in interpersonal exchanges and thus has many important interpersonal and intrapersonal effects, such as promoting effective communication, and facilitating meaningful relationships with others (Fonagy et al., 1998).

The evidence base linking mentalization and depression is limited, and findings are varied. Fisher-Kern et al. (2013) found that female psychiatric inpatients with major depressive disorder had significantly lower mentalization abilities (M = 2.40, SD = 1.50) when compared to healthy controls (M = 4.10, SD = 0.90) (Z = -4.43; p = .00, d = 1.40). This study suggested that depressive symptoms function as a response to potential threats to interpersonal relations, which results in a distorted or reduced ability to mentalize. Taubner, Bucheim, Kachele & Staun (2011) measured abilities to mentalize in 20 individuals with chronic depression receiving long term psychoanalytic treatment and compared this to matched healthy controls. Overall RF scores were not found to differ between patients (M = 4.00, SD = 1.04) and controls

(M = 3.56, SD = 1.5) (p = .32). Cologon, Schweitzer, King, & Nolte (2017) recently found that therapists with higher scores of RF predicted better client outcomes in psychotherapy. This result was not replicated for therapists with a secure attachment style. The authors suggest that this association may be because therapists' mentalization facilitates the growth in clients'mentalization, and it is this that contributes to positive outcomes in therapy.

4.3.5 Study aims and hypotheses

Although theoretically linked to depression and the therapeutic alliance, attachment style and mentalization have not been extensively researched in relation to the process of change in psychological treatment. This is particularly relevant to CBASP, an interpersonal psychotherapy where the therapeutic relationship is considered a key component facilitating symptom change. This study therefore aimed to explore the relationship between therapist and client attachment style and RF on clinical outcomes in CBASP. The hypotheses of the study are:

(a) Clients and therapists with a secure attachment and/or higher levels of RF will be associated with higher therapeutic alliance over the course of treatment.
(b) Clients and therapists with a secure attachment and/or higher levels of RF will be associated with a reduction of depressive symptoms over the course of treatment.
(c) Higher rates of the therapeutic alliance will be associated with a reduction of symptoms of depression over time.

4.4 Methodology

4.4.1 Design

A longitudinal observational case series design was used to address the aims of the research. This type of design has a number of advantages such as reducing variance accountable to research design, providing detailed data that can assess change over time, and the ability to measure within-participant factors that may impact treatment outcomes.

4.4.2 Participants and sample size

Both clients and therapists were necessary to participate in the study. Therapists of any profession were invited to take part if they were trained in CBASP as well as an additional psychological therapy. Clients were invited to take part in the study if they were aged 18 – 64, met the DSM-5 criteria for persistent depressive disorder, spoke fluent English, and were able to provide informed consent. Clients were excluded if they currently experienced significant substance misuse, psychosis, or were receiving another psychological therapy. A total of six therapists and 12 clients were recruited for the current study.

The primary objective of this study was to gather rich and novel data about the process of change within individuals in CBASP, which would allow for an extension to a more robust randomized controlled trial. Given the study design and the exploratory nature of the study, a formal power calculation was not deemed appropriate and numbers were instead considered in line with the resources available within the health board. Abu-Zidan, Abbas & Hefny (2012) conducted a review of clinical case series and recommended that a minimum sample size of four is necessary

for case-series design. This recommendation was taken into consideration during the design and recruitment phases of the study.

4.4.3 Measures

Consideration was given to participation burden associated with completing questionnaires throughout treatment (Newington & Metcalfe, 2014). Thus, questionnaires that validly and reliably measured the constructs of interest and were time efficient were chosen. Specifically tailored demographic questionnaires were designed for the purpose of this study. These can be found in Appendix F and G.

The *Clinical Outcomes in Routine Evaluation-10* (CORE-10; Barkham et al., 2013) is a ten-item psychological distress outcome measure developed from the 34-item CORE-Outcome Measure (CORE-OM; Evans et al., 2000). It is routinely administered within mental health services and rates how respondents feel subjectively over the previous week in the domains of well-being, functioning, symptoms and risk to self. Higher scores are indicative of greater psychological distress. Barkham et al. (2013; 2012) found it to have excellent internal reliability (.90), and correlated with the CORE-OM at .94 and .92 in clinical and non-clinical samples respectively.

The *Patient Health Questionnaire-9* (PHQ9; Kroenke, Spitzer, & Williams, 2001) is a nine-item measure of severity of depression over the past two weeks. The PHQ-9 has good test-retest reliability (.84) (Kroeneke et al., 2001). A systematic review found that it has good sensitivity for detecting depressive disorders and identifying change

over time, which is an important characteristic for use in this study (Kroenke, Spitzer, Williams, & Lowe, 2010).

The *Adult Attachment Interview* (AAI; George, Kaplan & Main, 1985) is a semi-structured interview that asks a series of open-ended questions. The interviewer aims to evoke a narrative of the interviewee's memory of childhood attachment experiences and how these experiences have shaped their adult personality. Interviews in the current study lasted between 45 minutes and 95 minutes and were audio-recorded and transcribed verbatim. Trained and reliable raters (training provided by the AAI Training Institute) rated them based on the classification system outlined in the AAI manual (Version 7.1; Main, Goldwyn, & Hesse, 2002). Interviews are allocated to one of three main classifications for descriptive statistics (secure-autonomous, insecure-dismissing, and insecure-preoccupied) and into two classifications for MLM due to the small sample size (insecure and secure). Several studies have reported reliability (both short and longer term) for this measure in differing clinical and non-clinical populations (Sagi et al., 1994; Allen, McElhaney, Kuperminc, & Jodl, 2004; Crowell et al., 1996). In the current study, nine (i.e. 50%) randomly selected AAIs were re-coded by an independent rater, which resulted in excellent inter-rater reliability, the weighted kappa score between the two raters was .81, $p = .00$, indicating excellent agreement (Fleiss, 1981).

Level of reflective functioning was derived from AAI transcripts using the *RF coding framework* (Fonagy et al., 1998). This produces a total score that maps onto an 11-point likert scale ranging from minus one (which represents negative RF; a narrative characterised by a lack of mentalization or where the mental states of others are

distorted) to nine (which represents exceptional RF; a narrative characterised by multiple complex and elaborate understanding of the mental states of self and others). The reliability of the RF scale has been found to be between .81 and .94 when used with reliable raters (Bouchard et al., 2008). In the current study, RF was coded by two reliable raters who were trained in the coding system. Similar to the AAI, nine transcripts (i.e. 50%) were randomly re-coded by an independent rater, which resulted in an excellent intraclass correlation coefficient (ICC = .91, $p < .001$). The internal consistency of the RF scale in this sample was evaluated by Cronbach's alpha (α = .95), which indicates a high degree of internal consistency (Streiner, 2003).

The *Working Alliance Inventory – short version* (WAI-S; Tracey & Kokotovic, 1989) is a 12-item version of the original Horvath & Greenberg (1989) 36-item questionnaire for measuring therapeutic alliance. This scale can be broken down into three subscale scores for bond (i.e. the bond between therapist and client), goals (i.e. the level of agreement relating to the goals of treatment), and tasks (i.e. the level of agreement relating to the tasks involved in achieving the goals). Each item is rated on a seven-point likert scale with higher scores indicative of stronger working alliance. The WAI-S has been found to have good internal reliability (.95) for therapists and (.98) for patients, as well as concurrent and predictive validity (Tracey & Koktovic, 1989). The shorter client and therapist version was chosen for the current study in order to reduce participation burden and because it has been found to have comparable psychometric properties to the original version (Busseri & Tyler, 2003). In order to reduce social desirability rating, participants were provided with envelopes to place each completed questionnaire before sealing.

4.4.4 Ethics

This study was granted ethical approval by the South East Scotland Research Ethics Committee in 2016 (REC reference: 15/SS/0232; see Appendix H). The associated NHS Research and Development Office also provided approval for this study (see Appendix I). A protocol for the study was registered on www.clinicaltrials.gov (https://clinicaltrials.gov/ct2/show/NCT02748187). The anonymity and confidentiality of participant data was upheld at each stage of the research process. An online tool provided randomly generated numbers, which were then assigned to participant's data. Audio-recordings, transcripts, and data were saved in a password-protected folder on an NHS computer. A document linking ID number to participant name was locked in a separate filing cabinet and only accessible by the lead researcher.

4.4.5 Procedure

Two health boards in NHS Scotland that offer CBASP as a psychological treatment were invited to participate in this research. One of the two health boards was unable to participate due to their involvement in other on-going research, which resulted in the recruitment of one health board. The lead researcher attended CBASP therapist group supervisions to provide information about the study and followed this up with email correspondence to all CBASP trained professionals within the health board inviting them to participate. The lead researcher met with those who expressed interest to obtain informed consent, and to complete a demographic questionnaire and the adult attachment interview (AAI).

Therapists were provided with a research pack which included a guide on what measures to administer at each session, information sheets, demographic and consent forms, and session-by-session measures for both clients and therapists. Therapists identified clients suitable for this study through in-service waiting lists and assessment appointments. At their first appointment, clients who met the inclusion and exclusion criteria were invited to take part in the study. They were provided with information on the study and told that their participation, or lack thereof, would not affect their treatment. They were provided with a minimum of 24 hours to read and consider the information, and the opportunity to contact the researcher prior to providing informed consent. Following consent, treatment commenced and the lead researcher contacted the client to complete the AAI. All AAIs were conducted within NHS premises and recorded using an encrypted audio-recorder. These recordings were transcribed verbatim and stored in a password-protected folder on the NHS server. All transcriptions were anonymised and allocated with ID numbers. These transcriptions were then rated for attachment style and RF by reliably trained coders.

4.4.6 Data analysis

There has been an increase in the use and evidence of multilevel modelling methods (MLM) for analysing data from cases with repeated measures nested data (Twisk, 2010; Collins & Sayer, 2001; Singer & Willet, 2003). Baek et al. (2011) suggest that statistical modelling is most appropriate for case series research if the aim of the study is to assess change over time and across cases. MLM has advantages in dealing with longitudinal data that is nested within pre-existing structures, and managing missing and varying data collection time points across individuals. In the current study this was important given the two-level structure of the data (i.e. observations within

participants). MLM does not assume independent observations, unlike other statistical tools, which is important when analysing longitudinal data where adjacent time points may be highly correlated.

Recent empirical research has provided initial evidence of the use of MLM in single case research (Moeyaert, Ferron, Beretvas, & Van den Noortgate, 2014; Rindskopf & Ferron, 2014; Shadish, Kyse, & Rindskopf, 2013). This marks a shift from the traditional method of visual analysis or effect size calculation for analyzing single cases (Kromrey & Foster-Johnson, 1996; Parsonson & Baer, 1978; Shadish et al., 2013), which has been criticised for increased unreliability and not providing quantification of effects (DeProspero & Cohen, 1979). This study aimed to add to the growing literature and utilize MLM techniques to address the study's hypotheses. Analyses were performed using IBM SPSS (version 23).

Visual analysis was also conducted in order to explore each individual's trend (i.e. direction of data over time), level (i.e. the magnitude of data) and stability (i.e. the variability of data) of symptoms throughout the course of treatment (Gast & Spriggs, 2014). This method is commonly used in case series research (e.g. Brossart, Parker, Olson, & Mahadevan, 2006; Kazdin, 1982), although it has an increased risk of Type 1 error where data is auto-correlated. Thus, results were considered tentatively on these grounds. Graphs were plotted using Microsoft Excel 2016, with missing data represented as a missing data point.

4.5 Results

4.5.1 Sample characteristics

Of the six therapists recruited for the current study, one was unable to recruit a suitable client and is therefore only included in descriptive statistical analysis. Twelve clients were recruited by five therapists, nine of which had completed treatment at the time of writing (hereafter referred to as "whole sample" and "completers" respectively). Of these nine, four ended treatment prematurely (i.e. participant six – nine) and thus completed fewer sessions. Therapist professional background included clinical psychologists (n = 2), trainee clinical psychologist (n = 1) nurse therapist (n = 1), and psychological therapists (n = 2). All therapists were trained in CBASP and received regular supervision by a CBASP-trained professional. Further descriptive statistics can be found below in Table 6.

Table 6.
Descriptive statistics of all clients and therapists

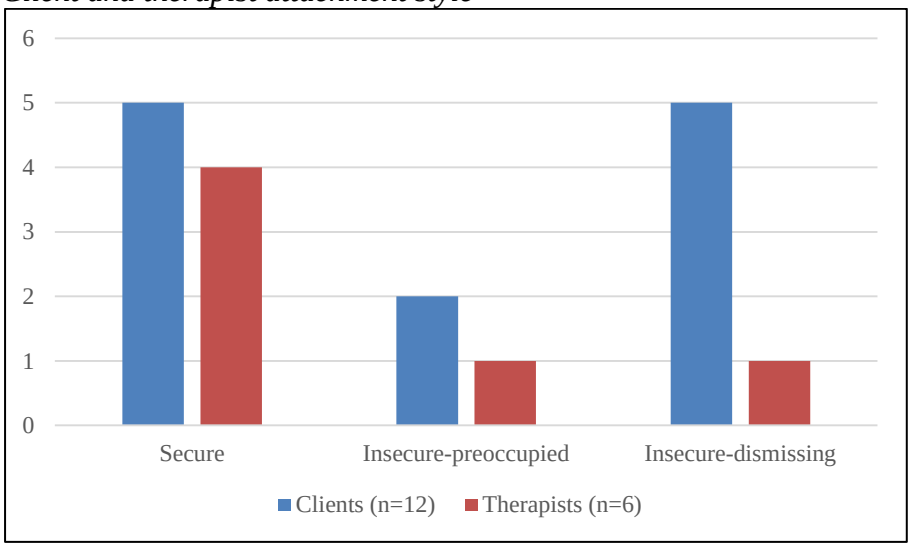
Variable	Range	M	SD	Range	M	SD
	Clients			Therapists		
Age	26 - 58	43.25	11.55	31-56	43.67	10.17
Male, n(%)	-	7(58%)	-	-	3(50%)	-
No. of sessions	8 - 22	16.22	4.99	-	-	-
Chronicity of depression (years)	6 - 40	24.83	11.77	-	-	-
Early on-set (before 21), n(%)	-	10(83%)	-	-	-	-
Therapeutic experience	-	-	-	5 - 19	12.5	5.13

4.5.2. Attachment and RF patterns for whole sample

The distribution of attachment style for therapists and clients can be seen in Figure 2. A Fisher's exact test indicated there was no significant difference between client and therapist secure and insecure attachment style (two-sided; p = .62).

A series of Mann-Whitney U tests revealed that there were no significant differences in initial symptoms of depression (U = 2313, z = -1.62, p = .11) or client-rated therapeutic alliance (U = 2161, z = -1.27, p = .20) for clients who were categorized as securely or insecurely attached. A statistically significant difference in initial levels of psychological distress was found for those with a secure attachment (Md = 19, n = 50) and insecure attachment style (Md = 27, n = 121), U = 2112, z = -3.10, p = .00, r = .02.

Figure 2.
Client and therapist attachment style



Client mean level of RF was 3.17 (min = 1, max = 6, SD = 1.85), whereas therapist mean level was 4.0 (min = 2, max = 6, SD = 1.55). This is out of a possible total score of nine, with higher scores denoting higher RF. A Mann-Whitney U Test found that

there was no significant difference between client and therapist RF scores, $U = 26.00$, $z = -.95$, $p = .39$. There was also no significant difference in RF scores for clients ($U = 6.50$, $z = 34.50$, $p = .07$) or therapists ($U = .50$, $z = -1.67$, $p = .13$) in relation to their secure or insecure attachment style. A Spearman rho found that RF was not correlated with initial symptoms of depression ($r = -.29$, $p = .36$), psychological distress ($r = -.43$, $p = .17$), or the therapeutic alliance ($r = .22$, $p = .49$).

4.5.2. Symptom change over time for completers

A series of Wilcoxon Signed Rank tests were conducted in order to compare the differences in scores at first and last session. This is presented below in Table 7 and graphically in Figure 3. There was a statistically significant decrease in symptoms of depression and psychological distress over time and both had a large effect. PHQ-9 median scores reduced from a classification of severe depression to moderate depression, and CORE-10 median scores reduced from a classification of severe psychological distress to a mild level of psychological distress. Therapeutic alliance, rated by client or therapist, was not found to significantly differ from first to last session.

Table 7.
Pre and post treatment median scores for completers

Variable	Median Time 1	Median Time 2	z	p	r
PHQ9	21.00	12.00	-2.37	.02	.56
CORE10	27.00	13.00	-2.52	.01	.59
WAIS	10.00	11.75	-.83	.41	.20
WAISRT	11.00	12.25	-1.68	.09	.40

Figure 3.
Pre-post mean symptom change for completers

4.5.4. Modeling symptom change using multilevel modelling

Several models using all available data were tested in order to assess change over time. Model 1 (i.e. the unconditional model; Singer & Willett, 2003) evaluated depressive symptoms/therapeutic alliance at the beginning of therapy to ensure there was enough variance to continue with further models. Model 2 formed the unconditional growth model and evaluated the effect of time, in the form of session number. Model 3 modelled within-subject variance by taking into account the possible auto-regressive nature of the data. These models formed baseline models from which predictor variables (attachment style, RF, therapeutic alliance) were added and constituted new models aiming to account for the remaining variance in the base model. Parameters for the models for the whole sample and completers can be found in Tables 8, 9 and 10.

4.5.4.1 PHQ-9 as the dependent outcome

Unconditional model (Model 1). An unconditional growth model was first analysed. The intraclass correlation coefficient (ICC) was calculated to be 0.59, indicating that approximately 59% of the variance in symptoms of depression was attributable to differences between participants. **Unconditional growth model (Model 2).** When time was added to this model to account for growth, it was found to be significant, indicating that PHQ-9 scores significantly decreased over the course of treatment. There was no significant relationship between initial symptom severity and change in symptom scores over time. **Modelling within-subjects variance (Model 3).** A correlation structure of within-subjects effects was modelled in order to take into account the likely auto-regressive nature of the data. A non-significant rho parameter (*rho* = .18, *p* = .07) suggested that scores on PHQ-9 at adjacent time-points were not related, however modelling this non-independence produced a small improvement in model fit. Analyses were re-run for the nine completers. This found a significant rho parameter (*rho* = .44, *p* = .00) suggesting that scores on PHQ-9 at adjacent time-points were related for those who completed treatment. **Client attachment (Model 4).** The inclusion of clients' attachment style (i.e. dummy coded as secure and insecure) resulted in an improved model fit when compared to model 3. Analyses re-run on completers did not provide large difference in results. **Client RF (Model 5).** The inclusion of clients' RF resulted in an improved model fit. Analyses re-run on completers did not provide large difference in results. **Client-rated alliance (Model 6).** The inclusion of WAISR resulted in a largely improved model fit and was found to be significantly associated with overall PHQ-9 scores but not over time for both the whole sample and completers. **Therapist attachment (Model 7).** Therapists' secure attachment style was significantly associated with overall lower level of PHQ-9 scores, but not with change in scores over time. The addition of this variable resulted

in a better model fit in comparison to model 3. Similar statistically significant findings were found when analyses were re-run for completers. **Therapist RF (Model 8).** The inclusion of therapists' RF resulted in an improved model fit in comparison to Model 3 and was found to be significantly associated with overall PHQ-9 scores, but not with change in scores over time. When analyses were re-run for the completers, therapist RF lost significance in relation to PHQ-9 **Therapist-rated alliance (Model 9).** The inclusion of therapist-rated alliance resulted in a largely improved model fit but failed to reach significance with overall PHQ-9 scores(p = .058) for the full sample, but reached significance for completers. This significance was not found for scores over time.

Table 8.
Summary parameters with PHQ-9 as dependent variable (whole sample)

	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8	Model 9
Full sample									
Intercept	15.75 (1.58)***	18.67(1.42)***	18.64(1.40)***	19.52(1.83)***	18.98(3.02)***	30.52***	24.40(1.69)***	26.29(3.29)***	27.51***
Time		-.47(.18)*	-.45(.16)*	-.28(.19)	.10(.27)	-.70(.40)	-.40(.25)	-.32(.50)	-.41(.65)
Client attachment				-1.79(2.90)					
Client attachment*time				-.52(.34)					
Client RF					-.11(.84)				
Client RF*time					-.17(.08)				
WAISR						-1.13(.31)**			
WAISR*time						.02(.03)			
Therapist-rated attachment							-5.46(2.38)*		
Therapist attachment*time							-.14(.35)		
Therapist RF								-2.18(.88)*	
Therapist RF*time								-.04(.13)	
WAISRT									-.82(.43)
WAISRT*time									.01(.05)
-2LL	997.41	922.95	919.50	912.39	916.80	822.47	910.64	914.07	802.12

Parentheses values = standard errors; ***p<.001, **p<.01, *p<.05

Table 9.
Summary parameters with PHQ-9 as dependent variable (completers)

	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8	Model 9
Completers									
Intercept	14.72(1.79)***	18.26(1.71)***	18.25(1.66)***	18.08(2.36)***	18.49(4.47)*	32.16(4.49)***	23.15(2.14)***	27.67(4.41)***	36.79(7.42)***
Time		-.55(.22)*	-.53(.21)*	-.34(.26)	.17(.41)	-.96(.49)	-.57(.39)	-.73(.74)	-1.23(.85)
Client attachment				.72(3.60)					
Client attachment*time				-.53(.44)					
Client RF					-.04(1.10)				
Client RF*time					-.19(.10)				
WAISR						-.13(.40)**			
WAISR*time						.04(.04)			
Therapist attachment							-7.23(2.63)*		
Therapist attachment*time							.03(.49)		
Therapist RF								-2.41(1.08)	
Therapist RF*time								.05(.18)	
WAISRT									-1.62(.62)*
WAISRT*time									.07(.07)
-2LL	812.29	754.53	751.10	746.08	749.37	657.58	741.05	747.26	632.14

Parentheses values = standard errors; ***p<.001, **p<.01, *p<.05

4.5.4.2 WAISR as the dependent outcome

Unconditional model (Model 1). The ICC was calculated to be 0.56, indicating that approximately 56% of the variance in therapeutic alliance was attributable to differences between participants. **Unconditional growth model (Model 2).** Time was found to improve model fit when entered into the model but was not significant. This was found for both the whole sample and completers. **Modelling within-subjects variance (Model 3).** A significant rho parameter (*rho*=.29, p=.02) suggested that ratings of the WAISR at adjacent time-points were related across time. Analyses were re-run for the nine completers and similarly found a significant rho parameter (*rho*=.58, p=.00). **Client attachment (Model 4).** Client attachment style, when added to the model, improved model fit in comparison to Model 3 but was not significantly associated with WAISR. The same result occurred when the analyses were re-run for completers. **Client RF (Model 5).** Client RF was not significantly associated with WAISR and resulted in a poorer model fit for both the whole sample and completers. **Therapist attachment (Model 6).** Therapist's attachment was not significantly associated with WAISR, but did improve model fit slightly for both the whole sample and completers. **Therapist RF (Model 7).** Therapist RF was not significantly associated with WAISR and resulted in a poorer model fit in comparison to Model 3 for both the whole sample and completers.

Table 10

Summary parameters with WAISR as dependent variable

	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7
Full sample							
Intercept	10.85(.48)***	10.44(.55)***	10.43(.55)***	10.22(.74)***	9.96(1.16)***	9.54(.71)***	7.69(1.35)***
Time		.07(.07)	.06(.07)	.06(.09)	.10(.15)	.05(.11)	.24(.31)
Client attachment				.51(1.16)			
Client attachment*time				.01(.16)			
Client RF					.15(.32)		
Client RF*time					-.01(.04)		
Therapist attachment						1.80(1.01)	
Therapist attachment*time						.03(.15)	
Therapist RF							.78(.36)
Therapist RF*time							-.05(.05)
-2LL	590.72	521.31	515.04	514.90	520.15	510.77	515.45
Completers							
Intercept	10.96(.56)***	10.64(.58)***	10.62(.57)***	10.86(.80)***	10.29(1.53)***	9.35(.85)***	7.96(1.64)**
Time		.06(.09)	.05(.09)	.02(.13)	.05(.25)	-.02(.16)	.24(.344)
Client attachment				-.61(1.22)			
Client attachment*time				.11(.22)			
Client RF					.09(.37)		
Client RF*time					.00(.06)		
Therapist attachment						1.91(1.05)	
Therapist attachment*time						.12(.20)	
Therapist RF							.68(.40)
Therapist RF*time							-.05(.08)
-2LL	468.44	420.91	417.37	416.44	421.56	411.41	418.31

Parentheses values = standard errors; ***p<.001, **p<.01, *p<.05

4.5.5. Visual analysis

Participant's individual symptom change throughout treatment is presented below in Figure 4. Cooper, Heron & Heward (2007) recommend looking at trend, level change, and stability, or variability, of data when conducting visual analysis. Overall, there appears to be a descending trend for symptoms over time, with a minimal and varied trend in the therapeutic alliance. Without a multiple baseline, and large data fluctuation across time, it is difficult to attribute this trend to the intervention.

Gast & Spriggs (2014) guidelines suggest that 80% of individual data should be within 25% of the median to be considered stable. Although the therapeutic alliance was found to be stable across all individuals, ranging from 80 to 100 percent, high variability in symptoms was found across the majority of participants (n=6). Five participants (i.e. participant one – five) showed high levels of variability in both symptoms of depression and psychological distress, with participant eight showing high variability in symptoms of psychological distress only. Visually, those with an insecure attachment (i.e. participant one, two, and five) appear to have more fluctuating profiles than those with a secure attachment.

Level change was assessed by comparing symptom level at first and last session. McMillan, Gilbody & Richards (2010) suggest that clinically significant change on the PHQ-9 involves a baseline score of 10 or higher on the PHQ-9, followed by a post-treatment score of nine or lower, with at least five decreased time points. Although the majority of participants experienced a reduction in symptoms of depression (n=6), only participant one (first session = 20, last session =1), two (first session = 21, last session = 9), five (first session = 10, last session = 2) and seven (first session = 21, last session = 4) met criteria for clinically significant change. Psychological distress was found to decrease for all participants, although

there are no known guidelines for assessing clinically significant change in a depressed sample using the CORE-10. Participants three, five, and eight showed a small decline in the therapeutic alliance (i.e. a poorer rating of the therapeutic alliance). Decline for participant three was in tandem with relatively stable symptoms throughout treatment, whereas participant five's decline occurred alongside PHQ9 scores reducing from a moderate level of depression to minimal and CORE10 scores reducing from mild psychological distress to low level. Participant eight completed only 11 sessions and had several sessions of missing data, which makes it difficult to interpret any clear trend.

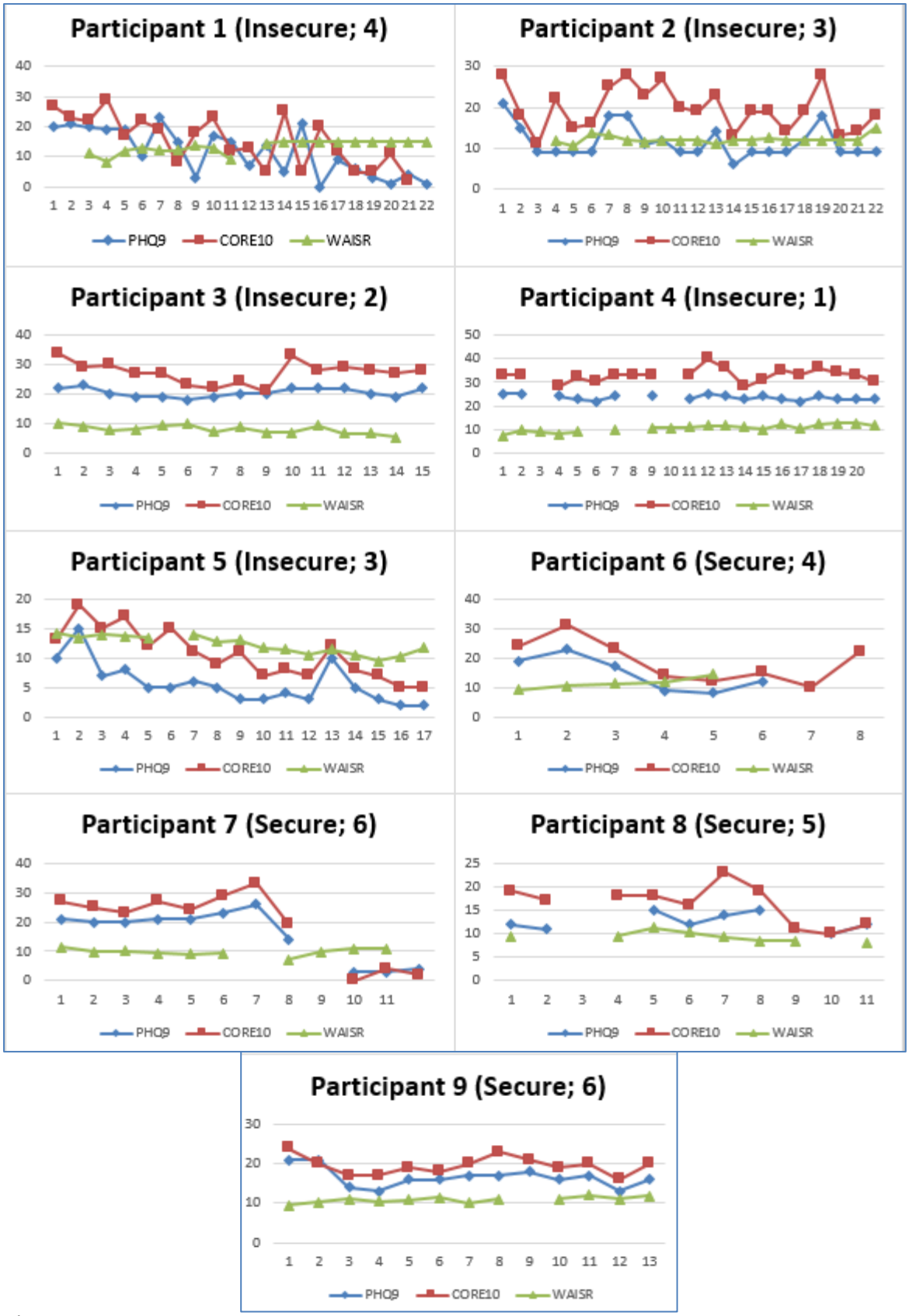


Figure 4.

Individual symptom change with attachment style and RF scores in parentheses.

4.6 Discussion

Based on interpersonal theories of depression, this study sought to explore the relationship between client and therapist attachment style and mentalization on the therapeutic alliance and clinical outcomes in CBASP. A secondary aim of this study was to evaluate the usefulness of MLM with this type of research design.

Symptoms of depression and psychological distress were found to significantly reduce over the course of treatment. Although the mean therapeutic alliance was found to increase through the course of treatment, this was not statistically significant. Regression to the mean was not considered to have an effect, which indicated that there were other variables accountable for the reduction in symptoms of depression. This provides support for the use of CBASP as an effective treatment for depression in this client group, although this interpretation is considered tentatively as the lack of a control group and multiple baseline period means it is not possible to attribute change to the treatment specifically.

Despite minimal change in the therapeutic alliance over time, this resulted in the largest improvement in model fit and was significantly associated with symptoms of depression. This supports the theoretical framework upon which CBASP rests upon, that it is the therapeutic relationship that is the vehicle of change for this client group. In relation to the variables investigated to predict the therapeutic alliance, both client and therapist attachment style were not found to be statistically significant, although did improve model fit, and client and therapist mentalization specifically resulted in a poorer model fit. Existing research has repeatedly found a significant association between client secure attachment and higher therapeutic alliance using pre-post designs, which supports the theoretical assertion that those with a secure attachment are more likely to develop trusting and meaningful relationships

(Byrd, Patterson & Tuchik, 2010; Horvath & Symonds, 1991; Kivlighan, Patton & Foote, 1998; Kivlighan & Shaughnessy, 2000; Mallinckrodt, Coble & Gantt, 1995). The finding that mentalization did not have an effect on the therapeutic alliance is surprising given the theoretical links aforementioned and is suggestive that the ability to identify and consider self and others mental states does not impact on the alliance between client and therapist. There is a small evidence base that has found an association between client low pre-treatment mentalization and lower ratings of therapeutic alliance during psychotherapy (Falkenstrom, Ekebald, & Holmqvist, 2016), whereas other research has failed to find an association between therapist mentalization and client-rated therapeutic alliance (Cologon et al., 2017).

Client attachment style and mentalization were not statistically associated with symptoms of depression, however did produce a better model fit indicating that they accounted for some variance. Interestingly, visual analysis highlighted that those with an insecure attachment displayed more fluctuation of symptoms in comparison to those with a secure attachment, suggesting that the process of change may differ for these groups. Additionally, clients with an insecure attachment attended on average 19 sessions, whereas securely attached clients attended 11. Theory and research have highlighted that those with an insecure attachment often appraise and react to stressful situations negatively, feel overwhelmed by their distress, and utilise unhelpful strategies such as directing attention to distress and rumination (Berant, Mikulincer, & Florian, 2001; Birnbaum, Orr, Mikulincer, & Florian, 1997; Mikulincer & Orbach, 1995; Shaver & Hazan, 1993). This may account for the increased fluctuation of symptoms for those with an insecure attachment and explain why they tended to stay engaged in treatment longer.

The evidence base in relation to client mentalization and clinical outcomes in psychotherapy is mixed and inconclusive, and thus the lack of a statistically significant association between the two variables in this study may be accurate, rather than attributable to a lack of power to detect effects (Fonagy et al., 1996; Katznelson, 2014; Muller, Kaufhold, Overbeck & Grabhorn, 2006; Taubner et al., 2011). This would suggest that a client's ability to identify and understand the mental states of self and others does not significantly contribute to symptom reduction in CBASP. Conversely, therapists' secure attachment and mentalization were significantly associated with lower levels of depressive symptoms. This provides empirical evidence in support of the importance of therapists' ability to identify and understand the mental states in the self and others, and in facilitating a supportive and secure relationship with others (Farber et al., 2009), which are important therapeutic processes. These findings replicate a small evidence base that has found that therapist secure attachment and higher mentalization are associated with symptom reduction in psychotherapy (Black, Hardy, Turpin, & Parry, 2005; Cologon et al., 2017; Sauer, Lopez & Gormley, 2003; Wongpakaran & Wongpakaran, 2012;).

These findings are interesting when considering the theory that CBASP is premised on, namely that individuals with chronic depression operate at a pre-operational level. Using reflective functioning/mentalization as a proxy for pre-operational thinking, the findings from this study would suggest that individuals with chronic depression are no different in their ability to mentalize when compared to therapists, and clients' level of mentalization does not have an impact on symptoms of depression. This finding adds to the already existing inconclusive picture regarding the role of pre-operational thinking (as measured by Theory of Mind abilities in previous literature) in individuals with chronic depression. Future research, utilizing a more robust sample, would be useful in providing a clearer and more definite

understanding of pre-operational thinking in this population, and would have implications for the CBASP theoretically.

Another interesting finding is the disparity between the role of therapist and client attachment style and mentalization on symptoms of depression, with therapist variables reaching statistical significance but client variables failing to do so. This would suggest that it is the therapists secure attachment and ability to consider the mental states of self and other that produces significant and positive symptom change, possibly through the therapists ability to provide the client with a secure base and reflect back self and others internal states. Disciplined personal involvement, unique to CBASP, can be seen to involve therapist mentalization (i.e. where the therapist acknowledges and describes their own, and their clients', internal mental states and shares this) which may over time help the client to mentalize in other relationships, increasing interpersonal effectiveness. In order to delineate whether it is indeed techniques specific to CBASP that contribute to this finding it would be important to produce research that can infer causation (e.g. experimental research, randomised controlled trial).

4.6.1 Evaluation of MLM

MLM provided a number of advantages such as accounting for the auto-regressive nature of repeated measures and nested structure of the data, and managing missing and varied data collection time points across individuals. A disadvantage of the use of MLM in the current study was the increased risk of Type I and Type II error given the small sample size, and limited statistical complexity that could be accommodated given this increased risk. There is no clear consensus in the literature regarding an appropriate sample size in MLM for case series research.

Shadish et al. (2013) suggest that power in this type of research depends on the number of cases and time points, effect size, ICC, and inter-correlation, and recommend increasing the number of cases, rather than time points, which would provide more power. Although the authors report preliminary standards for case series research as a minimum of three cases and five time points, this is not in relation to obtaining sufficient power to detect effects and not specific to MLM (Kratochwill et al., 2010). Due to the lack of power in the current study, model fit statistics and trends in the data, rather than statistical significance, were the main focus. This provided information regarding symptom change throughout treatment, and complimented the use of visual analysis, which provided detailed analysis of individual symptom change and highlighted possible clinically observable effects.

4.6.2 Strengths and limitations

This is the first study of its kind to explore the impact of therapist and client attachment style and mentalization on clinical outcomes in CBASP. This adds to the limited research that has investigated the process of change in CBASP and implicates important factors in this process. A limitation of this study is the small sample size employed, which was negatively affected by logistical factors, but acceptable for case series design. This reduced the ability to perform further analyses (e.g. interaction effects between predictors), and generalize findings. The lack of a multiple baseline period means it is difficult to assess whether symptom change was a result of treatment or chance. Future research should aim to introduce a multiple baseline period with a more robust sample size, which would allow further interpretation and generalization. Despite these limitations, this study has provided findings that promote theoretical consideration of the effect of attachment style and mentalization in CBASP.

4.6.3 Clinical and research implications

The findings in this study highlight the clinical importance of therapist attachment style and ability to mentalize in reducing client symptoms throughout treatment. This finding may be due to the way a therapist relates to their client and promotes a trusting and empathetic relationship, which is of paramount importance in CBASP. Taking these factors into consideration when training therapists in psychological treatments would offer potential clinical benefits. Training could place more emphasis on developing self-awareness of, and reflecting on, ones' attachment style and mentalization, as well as education on the importance of the therapeutic alliance and how to foster this in session.

The findings also suggest that the number of sessions for this client group, specifically for those with an insecure attachment style, is an important consideration clinically, as symptoms tend to decrease over time amid fluctuations. This is an important finding clinically, and for future research which should consider more extensive longitudinal or follow-up research designs to identify whether this fluctuation reduces or changes over time. Additionally, in relation to the finding that therapeutic alliance produced the most improved model fit in reducing symptoms of depression, it would be important for future research to disentangle whether this is unique to CBASP specifically, or more of a general psychotherapeutic outcome. This could be facilitated through future research that aims to investigate the impact of techniques specific to CBASP, via an experimental design using a comparison group, which would provide information on causation.

4.6.4 Overall conclusion

The findings from this study provide evidence of the importance of the therapeutic alliance, and therapist attachment style and ability to mentalize in CBASP, specifically in relation to

reducing clients' symptoms of depression. Although hypothesized based on theoretical and empirical evidence, client attachment style and ability to mentalize did not have a significant impact on symptom change throughout treatment or the therapeutic alliance, but did improve model fit, which suggests it does have some influence. Further research, with a more robust sample size, is needed to expand on these initial findings.

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5. Appendices

Appendix A. The Journal of Personality and Social Psychology author guidelines

Submission

Submit manuscripts to the appropriate section editor.

Section editors reserve the right to redirect papers as appropriate. When papers are judged as better suited for another section, editors ordinarily will return papers to authors and suggest resubmission to the more appropriate section. Rejection by one section editor is considered rejection by all; therefore a manuscript rejected by one section editor should not be submitted to another.

All three sections of *Journal of Personality and Social Psychology* are now using a software system to screen submitted content for similarity with other published content. The system compares the initial version of each submitted manuscript against a database of 40+ million scholarly documents, as well as content appearing on the open web. This allows APA to check submissions for potential overlap with material previously published in scholarly journals (e.g., lifted or republished material).

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Submit manuscripts electronically to the **Attitudes and Social Cognition** section.

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University of Michigan
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Ann Arbor, MI 48106-1248

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For all research articles, authors must include the following information:

- a broad discussion on how the authors sought to maximize power in terms of, for example, sample size, improvement of measures, manipulation checks, and other elements as applicable;
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The cover letters should:

1. Include the author's postal address, e-mail address, telephone number, and fax number for future correspondence;
2. State that the manuscript is original, not previously published, and not under concurrent consideration elsewhere;
3. Indicate whether a previous version of the submitted manuscript was previously rejected from any section of *Journal of Personality and Social Psychology*; and if so, identify the action editor handling the previous submission, provide the prior manuscript #, and describe how the present article differs from the previously rejected one;
4. State that the data were collected in a manner consistent with ethical standards for the treatment of human subjects;
5. Inform the journal editor of the existence of any published work using the same data (in whole or in part) as was used in the present manuscript; if such publications exist, describe the extent and nature of any overlap between the present submission and the previously published work;
6. Mention any supplemental material being submitting for the online version of the article.

Replications

Although not a central part of its mission, the *Journal of Personality and Social Psychology* values replications and encourages submissions that attempt to replicate important findings previously published in social and personality psychology.

Major criteria for publication of replication papers include

- the theoretical importance of the finding being replicated
- the statistical power of the replication study or studies
- the extent to which the methodology, procedure, and materials match those of the original study
- the number and power of previous replications of the same finding
- Novelty of theoretical or empirical contribution is not a major criterion, although evidence of moderators of a finding would be a positive factor.

Preference will be given to submissions by researchers other than the authors of the original finding, that present direct rather than conceptual replications, and that include attempts to replicate more than one study of a multi-study original publication. However, papers that do not meet these criteria will be considered as well.

Submit through the Manuscript Submission Portal [to the appropriate section editor as noted above] and please note that the submission is a replication article.

Replication manuscripts will be peer-reviewed and if accepted will be published online only and will be listed in the Table of Contents in the print journal.

As in the past, papers that make a substantial novel conceptual contribution and also incorporate replications of previous findings continue to be welcome as regular submissions.

Masked Review Policy

The journal has adopted a policy of masked review for all submissions. The cover letter should include all authors' names and institutional affiliations. The first page of text should omit this information but should include the title of the manuscript and the date it is submitted. Every effort should be made to see that the manuscript itself contains no clues to the authors' identity.

Manuscript Preparation

Prepare manuscripts according to the *Publication Manual of the American Psychological Association* (6th edition). Manuscripts may be copyedited for bias-free language (see Chapter 3 of the *Publication Manual*).

Review APA's Checklist for Manuscript Submission before submitting your article.

Double-space all copy. Other formatting instructions, as well as instructions on preparing tables, figures, references, metrics, and abstracts, appear in the *Manual*. Additional guidance on APA Style is available on the APA Style website.

If your manuscript was mask reviewed, please ensure that the final version for production includes a byline and full author note for typesetting.

Below are additional instructions regarding the preparation of display equations, computer code, and tables.

Display Equations

We strongly encourage you to use MathType (third-party software) or Equation Editor 3.0 (built into pre-2007 versions of Word) to construct your equations, rather than the equation support that is built into Word 2007 and Word 2010. Equations composed with the built-in Word 2007/Word 2010 equation support are converted to low-resolution graphics when they enter the production process and must be rekeyed by the typesetter, which may introduce errors.

To construct your equations with MathType or Equation Editor 3.0:

- Go to the Text section of the Insert tab and select Object.
- Select MathType or Equation Editor 3.0 in the drop-down menu.

If you have an equation that has already been produced using Microsoft Word 2007 or 2010 and you have access to the full version of MathType 6.5 or later, you can convert this equation to MathType by clicking on MathType Insert Equation. Copy the equation from Microsoft Word and paste it into the MathType box. Verify that your equation is correct, click File, and then click Update. Your equation has now been inserted into your Word file as a MathType Equation.

Use Equation Editor 3.0 or MathType only for equations or for formulas that cannot be produced as Word text using the Times or Symbol font.

Computer Code

Because altering computer code in any way (e.g., indents, line spacing, line breaks, page breaks) during the typesetting process could alter its meaning, we treat computer code differently from the rest of your article in our production process. To that end, we request separate files for computer code.

In Online Supplemental Material

We request that runnable source code be included as supplemental material to the article. For more information, visit Supplementing Your Article With Online Material.

In the Text of the Article

If you would like to include code in the text of your published manuscript, please submit a separate file with your code exactly as you want it to appear, using Courier New font with a type size of 8 points. We will make an image of each segment of code in your article that exceeds 40 characters in length. (Shorter snippets of code that appear in text will be typeset in Courier New and run in with the rest of the text.) If an appendix contains a mix of code and explanatory text, please submit a file that contains the entire appendix, with the code keyed in 8-point Courier New.

Tables

Use Word's Insert Table function when you create tables. Using spaces or tabs in your table will create problems when the table is typeset and may result in errors.

Submitting Supplemental Materials

APA can place supplemental materials online, available via the published article in the PsycARTICLES® database. Please see Supplementing Your Article With Online Material for more details.

Abstract and Keywords

All manuscripts must include an abstract containing a maximum of 250 words typed on a separate page. After the abstract, please supply up to five keywords or brief phrases.

References

List references in alphabetical order. Each listed reference should be cited in text, and each text citation should be listed in the References section.

Examples of basic reference formats:

- **Journal Article:**
  Hughes, G., Desantis, A., & Waszak, F. (2013). Mechanisms of intentional binding and sensory attenuation: The role of temporal prediction, temporal control, identity prediction, and motor prediction. *Psychological Bulletin, 139,* 133–151. http://dx.doi.org/10.1037/a0028566
- **Authored Book:**
  Rogers, T. T., & McClelland, J. L. (2004). *Semantic cognition: A parallel distributed processing approach.* Cambridge, MA: MIT Press.
- **Chapter in an Edited Book:**
  Gill, M. J., & Sypher, B. D. (2009). Workplace incivility and organizational trust. In P. Lutgen-Sandvik & B. D. Sypher (Eds.), *Destructive organizational communication: Processes, consequences, and constructive ways of organizing* (pp. 53–73). New York, NY: Taylor & Francis.

Figures

Graphics files are welcome if supplied as Tiff or EPS files. Multipanel figures (i.e., figures with parts labeled a, b, c, d, etc.) should be assembled into one file.

The minimum line weight for line art is 0.5 point for optimal printing.

For more information about acceptable resolutions, fonts, sizing, and other figure issues, please see the general guidelines.

When possible, please place symbol legends below the figure instead of to the side.

APA offers authors the option to publish their figures online in color without the costs associated with print publication of color figures.

The same caption will appear on both the online (color) and print (black and white) versions. To ensure that the figure can be understood in both formats, authors should add alternative wording (e.g., "the red (dark gray) bars represent") as needed.

For authors who prefer their figures to be published in color both in print and online, original color figures can be printed in color at the editor's and publisher's discretion provided the author agrees to pay:

- $900 for one figure
- An additional $600 for the second figure
- An additional $450 for each subsequent figure

Permissions

Authors of accepted papers must obtain and provide to the editor on final acceptance all necessary permissions to reproduce in print and electronic form any copyrighted work, including test materials (or portions thereof), photographs, and other graphic images (including those used as stimuli in experiments).

On advice of counsel, APA may decline to publish any image whose copyright status is unknown.

- Download Permissions Alert Form (PDF, 13KB)

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APA policy prohibits an author from submitting the same manuscript for concurrent consideration by two or more publications.

See also APA Journals® Internet Posting Guidelines.

APA requires authors to reveal any possible conflict of interest in the conduct and reporting of research (e.g., financial interests in a test or procedure, funding by pharmaceutical companies for drug research).

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In light of changing patterns of scientific knowledge dissemination, APA requires authors to provide information on prior dissemination of the data and narrative interpretations of the data/research appearing in the manuscript (e.g., if some or all were presented at a conference or meeting, posted on a listserv, shared on a website, including academic social networks like ResearchGate, etc.). This information (2–4 sentences) must be provided as part of the Author Note.

Authors of accepted manuscripts are required to transfer the copyright to APA.

- For manuscripts **not** funded by the Wellcome Trust or the Research Councils UK
  Publication Rights (Copyright Transfer) Form (PDF, 83KB)
- For manuscripts funded by the Wellcome Trust or the Research Councils UK
  Wellcome Trust or Research Councils UK Publication Rights Form (PDF, 34KB)

Ethical Principles

It is a violation of APA Ethical Principles to publish "as original data, data that have been previously published" (Standard 8.13).

In addition, APA Ethical Principles specify that "after research results are published, psychologists do not withhold the data on which their conclusions are based from other competent professionals who seek to verify the substantive claims through reanalysis and who intend to use such data only for that purpose, provided that the confidentiality of the participants can be protected and unless legal rights concerning proprietary data preclude their release" (Standard 8.14).

APA expects authors to adhere to these standards. Specifically, APA expects authors to have their data available throughout the editorial review process and for at least 5 years after the date of publication.

Authors are required to state in writing that they have complied with APA ethical standards in the treatment of their sample, human or animal, or to describe the details of treatment.

- Download Certification of Compliance With APA Ethical Principles Form (PDF, 26KB)

The APA Ethics Office provides the full Ethical Principles of Psychologists and Code of Conduct electronically on its website in HTML, PDF, and Word format. You may also request a copy by emailing or calling the APA Ethics Office (202-336-5930). You may also read "Ethical Principles," December 1992, *American Psychologist*, Vol. 47, pp. 1597–1611.

Other Information

- Appeals Process for Manuscript Submissions
- Preparing Auxiliary Files for Production
- Document Deposit Procedures for APA Journals

Appendix B: Systematic review protocol

UNIVERSITY of York
Centre for Reviews and Dissemination

NHS
National Institute for Health Research

PROSPERO International prospective register of systematic reviews

The social and interpersonal mediators of attachment style and depressive symptoms: a systematic review

Sarah Buckley, Matthias Schwannauer

Citation
Sarah Buckley, Matthias Schwannauer. The social and interpersonal mediators of attachment style and depressive symptoms: a systematic review. PROSPERO 2016:CRD42016051378 Available from http://www.crd.york.ac.uk/PROSPERO/display_record.asp?ID=CRD42016051378

Review question(s)
What are the mediators between attachment style and depressive symptoms?

Searches
Databases such as the Database of Abstracts of Review of Effects (DARE), the Cochrane Database of Systematic Reviews (CDSR) and The Campbell Collaboration will be explored to ensure that other reviews have not been completed in this area.

Electronic search engines such as PsycINFO, PubMed, Embase, EBSCO, ASSIA, MEDLINE, CINAHL, ERIC and the Cochrane Central Register for Controlled Trials (CENTRAL) will be used to answer the research question.

Reference lists from identified articles and relevant review papers will also be explored.

A librarian with experience in systematic searches will be consulted on the strategies and search terms to be used. Search terms will include terms such as "(depress* OR dysthymi*)" AND "attach*" AND "mediat*". Other studies search terms will be reviewed during the screening phase and included in the current search strategy if deemed appropriate to the current research questions.

The searches will be re-run prior to the final analysis to ensure all recent studies have been retrieved for inclusion.

There will be no period of restriction in relation to the searches.

Papers in a language other than English that are identified as useful for the current review, and are easily translatable by the review team, will be considered for inclusion.

Types of study to be included
As this review aims to identify and evaluate studies that have assessed mediators, any peer reviewed quantitative study that includes a mediation analysis between attachment style and depressive symptoms in an adult population (i.e. 16 years and above) will be included. Studies where attachment style (assessed by a validated measure) is the independent variable, and depressive symptoms (assessed by a validated measure) is the dependent variable, will be included. If this information is unavailable, efforts will be made to contact the authors to obtain this data.

Reviews, professional opinions, editorial publications, and book chapters will not be included. Case studies and small n designs will initially be considered for inclusion but a final decision to include or exclude these designs will be made in the context of the full set of eligible studies. Dissertations, or unpublished material, will not be included.

Condition or domain being studied
Depressive symptoms.

Participants/ population
Studies that include human individuals, above the age of 16, who have completed measures of depressive symptoms and attachment style will be included for review. These individuals may be part of a clinical or non-clinical population.

Intervention(s), exposure(s)
This review is aimed at investigating the mediators between two variables, namely attachment style and depressive symptoms. Thus this quantitative review does not focus on interventions (outcome-focused research). Studies will not be excluded based on the intervention participants may have received.

Comparator(s)/ control
Not applicable to this study.

Context
Studies will not be excluded based on the setting in which they were conducted.

Outcome(s)
Primary outcomes
The identification of mediators between attachment style and depressive symptomology.

Secondary outcomes
The quality of studies conducted in this area.

Data extraction, (selection and coding)
The first author will initially select and screen the studies obtained by the systematic search in relation to the inclusion and exclusion criteria. Results will be exported to a reference management software, EndNote, where duplicates will be removed. Only relevant article titles, in relation to the inclusion criteria, will remain.

Full articles will be then be reviewed to determine eligibility. This process will be recorded and checked with the study supervisor. Where disagreement may arise between the two reviewers in relation to inclusion/exclusion of articles, effort will be made to resolve via discussion, before consulting a third reviewer for consensus.

Using a pro-forma, extraction details will include author, year of publication, participant characteristics (i.e. age and gender), sample size, study question and design, measures used and mediation analysis conducted, study setting (clinical or nonclinical), mediator(s) studied, and other key findings. Data extraction will be completed by the primary researcher and a proportion of these studies will be checked for consistency by an independent rater using an extraction form. Discrepancies will be resolved via discussion, before consulting a third reviewer for consensus.

Risk of bias (quality) assessment
As this study is concerned with mediators, as opposed to treatment efficacy, published guidelines assessing quality will not be appropriate for the included studies. Instead, a quality assessment measure will be devised based on the aims of the current research. This will follow closely the recommendations set out in the Strengthening the Reporting of Observational Studies in Epidemiology (STROBE) initiative (von Elm et al., 2007) and previously published meta-analyses and systematic reviews of mediating variables.

Von Elm, E., Altman, D. G., Egger, M., Pocock, S. J., Gotzsche, P. C., Vandenbroucke, J. P. et al. (2007). The Strengthening the Reporting of Observational Studies in Epidemiology (STROBE) Statement: Guidelines for Reporting Observational Studies. PLoS Medicine, 4(10).

Strategy for data synthesis
Due to the heterogeneity of studies (due to the different samples, and measures), a meta-analysis of the studies will not be completed. Instead a narrative synthesis will be carried out.

Analysis of subgroups or subsets
Due to the move to more robust mediation analysis in recent years, it is hypothesized that this may have an impact on the quality of the studies. This will be considered in analysis of subgroups.

Dissemination plans
It is anticipated that the finished review will be submitted for publication in a peer-reviewed journal. The review will also form part of a doctoral thesis in clinical psychology. A link to the publication will be made available on the University of Edinburgh's Department of Clinical and Health Psychology thesis database.

Contact details for further information
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University of Edinburgh

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Organisational affiliation of the review
University of Edinburgh, NHS Lothian

www.ed.ac.uk, www.nhslothian.scot.nhs.uk

Review team
Ms Sarah Buckley, University of Edinburgh
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Anticipated or actual start date
05 September 2016

Anticipated completion date
01 August 2017

Funding sources/sponsors
University of Edinburgh.

NHS Lothian.

Conflicts of interest
None known

Language
English

Country
Scotland

Subject index terms status
Subject indexing assigned by CRD

Subject index terms
Depression; Humans; Interpersonal Relations; Risk Factors; Signs and Symptoms

Stage of review
Ongoing

Date of registration in PROSPERO
14 November 2016

Date of publication of this revision
21 June 2017

Stage of review at time of this submission	Started	Completed
Preliminary searches	Yes	Yes
Piloting of the study selection process	Yes	Yes
Formal screening of search results against eligibility criteria	Yes	Yes
Data extraction	Yes	Yes
Risk of bias (quality) assessment	Yes	Yes
Data analysis	Yes	Yes

Appendix C. Systematic search strategy

Mediat* OR sobel* OR "causal pathway" OR "intermediate" OR "indirect effect" OR "process variable" OR "process evaluation" OR "mediation analysis" OR "structural equation modelling" OR "structural equation modeling" OR "baron and kenny" OR “baron & Kenny” OR "product of coefficient" OR "difference in coefficient" OR "SEM" OR "process of change" OR "Preacher and Hayes" OR “preacher & hayes” OR bootstrap*

AND

“Attachment style” OR attach* OR “adult attachment”

AND

Depression OR “depressive disorder” OR depress* OR dysthym* OR MDD

Appendix D. Systematic review quality criteria

1. A theoretical framework links the mediating variable to attachment style and depressive symptoms.	**Good:** A clear theoretical framework exists linking the specific mediator to both attachment style and depressive symptoms; these links are supported by empirical evidence in the study. **Adequate:** There is a theoretical framework linking the specific mediator to attachment style and depressive symptoms but there is no empirical evidence that supports this link; or a theoretical link is evident for some, but not all variables of interest to this study. **Poor:** There is no theoretical framework linking the specific mediator to attachment style and depressive symptoms.
2. Does the study have a representative sample?	**Good:** Participants are recruited from a representative setting that relates to the studies aims and hypotheses. **Adequate:** Participants are recruited from a setting that is somewhat representative of the studies aims and hypotheses (e.g. a student sample to represent the general population). **Poor:** Participants are not recruited from a representative sample that relates to the studies aims and hypothesizes (e.g. a clinical population to represent the general population or vice versa).

3. Is the study design appropriate to allow causal inference?	**Good:** A longitudinal design, experimental design, or randomized controlled trial is utilised, where temporal ordering of variables is evident. **Adequate**: A longitudinal design, experimental design, or randomized controlled trial is utilized, where some temporal ordering of variables (but not all) is evident. **Poor:** A cross sectional, or observational study design is utilised, and temporal ordering of variables is not evident.
4. Does the study have a clear inclusion/exclusion criteria?	**Good:** A detailed inclusion and exclusion criteria is outlined. **Adequate:** Inclusion/exclusion criteria are not specifically outlined, but it is clear that participants were included or excluded based on certain conditions. **Poor:** Inclusion or exclusion criteria are not reported and it is not clear whether any were employed.

5. Measures used are valid and reliable.	**Good:** All measures have good psychometric properties (i.e. validity and reliability) in relation to the population under study. These are outlined in the study, or referred to in another peer-reviewed study. **Adequate:** Measures have reasonable psychometric properties (i.e. validity and reliability) for the population under study, or some but not all measures have good psychometric properties. **Poor:** Measures have good psychometric properties but have been translated or modified for the purposes of this study.
6. Identification of potential confounding variables are controlled for.	**Good:** Variables that may impact on results are identified and controlled for in terms of design (e.g. through sampling methods) and statistical analysis. **Adequate:** Variables that impact on results are identified and controlled for in terms of design (e.g. through sampling methods) or statistical analysis, but not both. **Poor:** No potential confounding variables are identified or controlled for.

7. Method of mediation is well powered for the study	**Good:** Well powered analyses of mediation are used, such as SEM, path models, or bootstrapping. **Adequate:** Low powered or incomplete analyses of mediation are used in association with more robust methods of mediation (e.g. Baron & Kenny + SEM; Baron & Kenny + bootstrapping) **Poor:** Low powered or incomplete analyses of mediation are used, such as the Baron & Kenny (1986) method and the Sobel test.
8. A power calculation is conducted and the study is sufficiently powered for mediation	**Good**: A power calculation is carried out, and the study is adequately powered to detect mediation (above .8). **Poor:** No power calculation has been conducted.

Quality criteria markings: 2 = good, 1 = adequate, 0 = fair

Appendix E. Systematic review contact template

Dear [corresponding author's name],

I am currently completing a systematic review of the social and interpersonal mediators in the relationship between between attachment and depressive symptoms. Your study, [insert title of study] has been found to be relevant to this review. I am emailing you to ask you for further information in relation to this study, specifically [enter what information you require].

I would be very grateful for this information.

Yours sincerely,

Sarah Buckley

Trainee Clinical Psychologist

University of Edinburgh

Appendix F. Clinical Psychology and Psychotherapy author guidelines

Clinical Psychology & Psychotherapy

Edited By: Paul Emmelkamp and Mick Power

Impact Factor: 1.933

ISI Journal Citation Reports © Ranking: 2016: 56/121 (Psychology Clinical)

Online ISSN: 1099-0879

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For additional tools visit Author Resources - an enhanced suite of online tools for Wiley Online Library journal authors, featuring Article Tracking, E-mail Publication Alerts and Customized Research Tools.

Author Guidelines

MANUSCRIPT SUBMISSION

Clinical Psychology & Psychotherapy operates an online submission and peer review system that allows authors to submit articles online and track their progress via a web interface. Please read the remainder of these instructions to authors and then visit http://mc.manuscriptcentral.com/cpp and navigate to the *Clinical Psychology & Psychotherapy* online submission site.

IMPORTANT: Please check whether you already have an account in the system before trying to create a new one. If you have reviewed or authored for the journal in the past year it is likely that you will have had an account created.

Pre-submission English-language editing

Authors for whom English is a second language may choose to have their manuscript professionally edited before submission to improve the English. A list of independent suppliers of editing services can be found at http://wileyeditingservices.com/en/. All services are paid for and arranged by the author, and use of one of these services does not guarantee acceptance or preference for publication.

Guidelines for Cover Submissions

If you would like to send suggestions for artwork related to your manuscript to be considered to appear on the cover of the journal, please follow these general guidelines.

All papers must be submitted via the online system.

File types. Preferred formats for the text and tables of your manuscript are .doc, .docx, .rtf, .ppt, .xls. **LaTeX** files may be submitted provided that an .eps or .pdf file is provided **in addition** to the source files. Figures may be provided in .tiff or .eps format.

New Manuscript

- Non-LaTeX users. Upload your manuscript files. At this stage, further source files do not need to be uploaded.
- LaTeX users. For reviewing purposes you should upload a single .pdf that you have generated from your source files. You must use the File Designation "Main Document" from the dropdown box.

Revised Manuscript

- Non-LaTeX users. Editable source files must be uploaded at this stage. Tables must be on separate pages after the reference list, and not be incorporated into the main text. Figures should be uploaded as separate figure files.
- LaTeX users. When submitting your revision you must still upload a single .pdf that you have generated from your revised source files. You must use the File Designation "Main Document" from the dropdown box. In addition you must upload your TeX source files. For all your source files you must use the File Designation "Supplemental Material not for review". Previous versions of uploaded documents must be deleted. If your manuscript is accepted for publication we will use the files you upload to typeset your article within a totally digital workflow.

MANUSCRIPT STYLE

The language of the journal is English. 12-point type in one of the standard fonts: Times, Helvetica, or Courier is preferred. It is not necessary to double-line space your manuscript. Tables must be on separate pages after the reference list, and not be incorporated into the main text. Figures should be uploaded as separate figure files.

- During the submission process you must enter the full title, short title of up to 70 characters and names and affiliations of all authors. Give the full address, including email, telephone and fax, of the author who is to check the proofs.
- Include the name(s) of any **sponsor(s)** of the research contained in the paper, along with **grant number(s)** .
- Enter an **abstract** of up to 250 words for all articles [except book reviews]. An abstract is a concise summary of the whole paper, not just the conclusions, and is understandable without reference to the rest of the paper. It should contain no citation to other published work.
- All articles should include a **Key Practitioner Message** — 3-5 bullet points summarizing the relevance of the article to practice.
- Include up to six **keywords** that describe your paper for indexing purposes.

Types of Articles

- **Research Articles:** Substantial articles making a significant theoretical or empirical contribution.
- **Reviews**: Articles providing comprehensive reviews or meta-analyses with an emphasis on clinically relevant studies.
- **Assessments:** Articles reporting useful information and data about new or existing measures.
- **Practitioner Reports:** Shorter articles (a maximum of 1200 words) that typically contain interesting clinical material. These should use (validated) quantitative measures and add substantially to the literature (i.e. be innovative).

Title and Abstract Optimisation Information. As more research is read online, the electronic version of articles becomes ever more important. In a move to improve search engine rankings for individual articles and increase readership and future citations to Clinical Psychology & Psychotherapy at the same time please visit **Optimizing Your Abstract for Search Engines** for guidelines on the preparation of keywords and descriptive titles.

Illustrations. Upload each figure as a separate file in either .tiff or .eps format, the figure number and the top of the figure indicated. Compound figures e.g. 1a, b, c should be uploaded as one figure. Grey shading and tints are not acceptable. Lettering must be of a reasonable size that would still be clearly legible upon reduction, and consistent within each figure and set of figures. Where a key to symbols is required, please include this in the artwork itself, not in the figure legend. All illustrations must be supplied at the correct resolution:

- Black and white and colour photos - 300 dpi
- Graphs, drawings, etc - 800 dpi preferred; 600 dpi minimum
- Combinations of photos and drawings (black and white and colour) - 500 dpi

The cost of printing **colour** illustrations in the journal will be charged to the author. The cost is approximately £700 per page. If colour illustrations are supplied electronically in either **TIFF** or **EPS** format, they **may** be used in the PDF of the article at no cost to the author, even if this illustration was printed in black and white in the journal. The PDF will appear on the *Wiley Online Library* site.

REFERENCE STYLE

In-text Citations
The APA system of citing sources indicates the author's last name and the date, in parentheses, within the text of the paper. Cite as follows:

1. **A typical citation of an entire work consists of the author's name and the year of publication** .
   Example: Charlotte and Emily Bronte were polar opposites, not only in their personalities but in their sources of inspiration for writing (Taylor, 1990). Use the last name only in both first and subsequent citations, except when there is more than one author with the same last name. In that case, use the last name and the first initial.
2. **If the author is named in the text, only the year is cited** .
   Example: According to Irene Taylor (1990), the personalities of Charlotte. .
3. **If both the name of the author and the date are used in the text, parenthetical reference is not necessary.**
   Example: In a 1989 article, Gould explains Darwin's most successful. . .
4. **Specific citations of pages or chapters follow the year** .
   Example: Emily Bronte "expressed increasing hostility for the world of human relationships, whether sexual or social" (Taylor, 1988, p. 11).
5. **When the reference is to a work by two authors, cite both names each time the reference appears** .
   Example: Sexual-selection theory often has been used to explore patters of various insect matings (Alcock & Thornhill, 1983) . . . Alcock and Thornhill (1983) also demonstrate. . .
6. **When the reference is to a work by three to five authors, cite all the authors the first time the reference appears. In a subsequent reference, use the first author's last name followed by *et al* . (meaning "and others")** .
   Example: Patterns of byzantine intrigue have long plagued the internal politics of community college administration in Texas (Douglas *et al* ., 1997) When the reference is to a work by six or more authors, use only the first author's name followed by *et al* . in the first and all subsequent references. The only exceptions to this rule are when some confusion might result because of similar names or the same author being cited. In that case, cite enough authors so that the distinction is clear.
7. **When the reference is to a work by a corporate author, use the name of the organization as the author**.
   Example: Retired officers retain access to all of the university's educational and recreational facilities (Columbia University, 1987, p. 54).
8. **Personal letters, telephone calls, and other material that cannot be retrieved are not listed in References but are cited in the text** .
   Example: Jesse Moore (telephone conversation, April 17, 1989) confirmed that the ideas. . .
9. **Parenthetical references may mention more than one work, particularly when ideas have been summarized after drawing from several sources. Multiple citations should be arranged as follows** .
   Examples:
   - List two or more works by the same author in order of the date of publication: (Gould, 1987, 1989)
   - Differentiate works by the same author and with the same publication date by adding an identifying letter to each date: (Bloom, 1987a, 1987b)
   - List works by different authors in alphabetical order by last name, and use semicolons to separate the references: (Gould, 1989; Smith, 1983; Tutwiler, 1989).

Reference List

APA – American Psychological Association

References should be prepared according to the Publication Manual of the American Psychological Association (6th edition). This means in text citations should follow the author-date method whereby the author's last name and the year of publication for the source should appear in the text, for example, (Jones, 1998). The complete reference list should appear alphabetically by name at the end of the paper.

A sample of the most common entries in reference lists appears below. Please note that a DOI should be provided for all references where available. For more information about APA referencing style, please refer to the APA FAQ. Please note that for journal articles issue numbers are not included unless each in the volume begins with page one.

Journal article

Beers, S. R. , & De Bellis, M. D. (2002). Neuropsychological function in children with maltreatment-related posttraumatic stress disorder. *The American Journal of Psychiatry*, *159*, 483–486. doi:10.1176/appi.ajp.159.3.483.

Book edition

Bradley-Johnson, S. (1994). Psychoeducational assessment of students who are visually impaired or blind: Infancy through high school (2nd ed.). Austin, TX: Pro-ed.

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POST ACCEPTANCE

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Appendix G. Study information sheet (client version)

INFORMATION SHEET

Department of Clinical Psychology at the University of Edinburgh

You are being invited to take part in a research study. Before you decide whether or not to take part, it is important for you to understand why the research is being done and what it will involve. Please take the time to read the following information carefully. Please contact us if there is anything that is not clear or if you would like more information.

PROJECT TITLE

Does attachment style and ability to imagine mental states in self and others relate to outcomes in therapy?

INVITATION

My name is Sarah Buckley and I am currently undertaking a thesis as part of the Doctorate in Clinical Psychology with the University of Edinburgh. This research is supervised by Dr. Matthias Schwannauer (University of Edinburgh) and Dr. Massimo Tarsia (NHS Lothian),

You are being asked to take part in a research study that explores how psychotherapies for chronic depression work, specifically Cognitive Behavioural Analysis System of Psychotherapy (CBASP) and Interpersonal Psychotherapy (IPT). Gaining knowledge about this will allow us to adapt and tailor training and delivery to ensure successful therapy. You were identified by the service as being eligible to receive this treatment. Identifying people for psychological therapies is standard practice for the service.

COGNITIVE BEHAVIOURAL ANALYSIS SYSTEM OF PSYCHOTHERAPY (CBASP)

CBASP is a psychological talking therapy that was designed specifically for people with chronic depression. This therapy aims to help people to develop an understanding of the cognitive, emotional and behavioural consequences of their interpersonal interactions. Research into CBASP has evidenced that it is a successful treatment for chronic depression. CBASP typically involves 20 weekly 1 hour sessions.

DO I HAVE TO TAKE PART?

No, it is up to you to decide whether or not to take part. If you decide to take part you, and your therapist, will be asked to sign a consent form. If you decide to take part you are still free to withdraw at any time without giving a reason. Deciding not to take part or withdrawing from the study will not affect you in any way.

WHAT WILL HAPPEN

In this study, you will receive treatment as usual. In addition to treatment as usual you will be asked to complete an interview and three questionnaires before starting treatment. The interview, which will be recorded and last approximately 1 hour, will ask you questions about your relationships in early childhood, and will be carried out by trained PHD students from the University of Edinburgh. You will be asked to complete three additional short questionnaires during each session with your therapist, one of

which is standard practice. These questionnaires will ask you about how you have felt over the past week and about your relationship with your therapist. Your therapist will also be recruited to this study and will undergo the same interview, and complete similar questionnaires during each session.

TIME COMMITMENT
This study will begin once you sign the consent form and finish following (approximately) 20 sessions with your therapist.

BENEFITS AND RISKS
There are no direct benefits to you taking part in this study, but the results from this study might inform the future training and delivery of CBASP and IPT.

There are no known risks to taking part in this study however some people may find the interview emotional. There will be support available to you on site should this be necessary.

COST, REIMBURSEMENT AND COMPENSATION
Your participation in this study is voluntary and you will not receive any reimbursement.

PARTICIPANTS' RIGHTS
You may decide to stop being part of the research study at any time without explanation. You have the right to ask that any data you have supplied to that point be withdrawn/destroyed. You have the right to omit or refuse to answer or respond to any question that is asked of you. You have the right to have your questions about the procedures answered. If you have any questions as a result of reading this information sheet, you should ask the researcher before the study begins.

CONFIDENTIALITY/ANONYMITY
All the information collected during the course of the study will be kept confidential. There are strict laws and policies in place that safeguard your privacy at every stage. The collection, storage and management of data in this study will be conducted in accordance with NHS Lothian code of confidentiality and will also follow the University of Edinburgh data management policy.

To ensure that the study is being run correctly, we will ask your consent for responsible representatives from the Sponsor and NHS Institution to access your medical records and data collected during the study, where it is relevant to you taking part in this research. The Sponsor is responsible for overall management of the study and providing insurance and indemnity.

With your consent we will inform your GP that you are taking part.

WHAT WILL HAPPEN TO THE RESULTS OF THE STUDY?
The study will be written up as part of fulfilment of the Doctorate in Clinical Psychology. You will not be identifiable in any published material. The analysed data will be published in a peer review international journal, as well as presented nationally and internationally. There will be an opportunity for you to express interest in receiving a summary of the results when the research is complete.

Who has reviewed the study?

All research in the NHS is looked at by an independent group of people, called a Research Ethics Committee. A favourable ethical opinion has been obtained from the South East Scotland Research Ethics Committee. NHS management approval has also been obtained.

FOR FURTHER INFORMATION

We will be glad to answer your questions about this study at any time. You can contact us at sarah.buckley@nhslothian.scot.nhs.uk or Massimo.tarsia@nhslothian.scot.nhs.uk.

Should you wish to speak to someone independent of this study, please contact Helen.griffiths@ed.ac.uk

If you wish to make a complaint about the study please contact NHS Lothian:
NHS Lothian Complaints Team
2nd Floor
Waverley Gate
2 - 4 Waterloo Place
Edinburgh
EH1 3EG
Tel: 0131 465 5708
complaints.team@nhslothian.scot.nhs.uk.

Thank you for taking the time to read this information sheet.

Appendix H. Study information sheet (therapist version)

INFORMATION SHEET

Department of Clinical Psychology at the University of Edinburgh

You are being invited to take part in a research study. Before you decide whether or not to take part, it is important for you to understand why the research is being done and what it will involve. Please take the time to read the following information carefully. Please contact us if there is anything that is not clear or if you would like more information.

PROJECT TITLE

Are therapist and client attachment style and reflective functioning (i.e. the ability to imagine mental states in self and others) associated with outcomes in therapy; a longitudinal proof of concept study.

INVITATION

My name is Sarah Buckley and I am currently undertaking a thesis as part of the Doctorate in Clinical Psychology with the University of Edinburgh. This research is supervised by Dr. Matthias Schwannauer (University of Edinburgh) and Dr. Massimo Tarsia (NHS Lothian), and has been reviewed and given favourable opinion by South East Scotland Research Ethics Committee.

You are being asked to take part in a research study that explores therapist and client variables that may contribute to outcomes in interpersonal psychotherapies (i.e. IPT and CBASP), specifically attachment style and reflective functioning. Gaining this knowledge will allow us gain further knowledge of how interpersonal therapies work, and enable us to adapt and tailor training and delivery to ensure optimum clinical outcomes.

DO I HAVE TO TAKE PART?

No, it is up to you to decide whether or not to take part. If you decide to take part you will be asked to sign a consent form. If you decide to take part you are still free to withdraw at any time without giving a reason. Deciding not to take part or withdrawing from the study will not affect you in any way.

WHAT WILL HAPPEN?

In this study, you will be asked to complete a demographic questionnaire and an interview. The interview, which will be recorded, will ask you questions about your relationships in early childhood, and will be carried out by trained PHD students from the University of Edinburgh. You will be asked to administer two questionnaires to clients (who have consented to partake in this research) during each session and complete one questionnaire yourself during each session. Your sessions will follow treatment as usual. Your name will be transformed into an ID

number and data will be inputted into a confidential database, which will only be accessed by the researchers.

TIME COMMITMENT

This study will begin once you sign the consent form and finish following completed treatment with your client (approx 16 – 20 sessions). Approximately one hour will be necessary to complete the Adult Attachment Interview. Sessions will follow treatment as usual with the addition of completing and administering questionnaires in your sessions.

BENEFITS AND RISKS

There are no direct benefits to you taking part in this study, but the results from this study might inform the future training and delivery of interpersonal psychotherapies. There are no known risks to taking part in this study however some people may find the interview emotional. There will be support available to you on site should this be necessary.

COST, REIMBURSEMENT AND COMPENSATION

Your participation in this study is voluntary and there will not be any reimbursements for your participation.

PARTICIPANTS' RIGHTS

You may decide to stop being part of the research study at any time without explanation. You have the right to ask that any data you have supplied to that point be withdrawn/destroyed. You have the right to omit or refuse to answer or respond to any question that is asked of you. You have the right to have your questions about the procedures answered. If you have any questions as a result of reading this information sheet, you should ask the researcher before the study begins.

CONFIDENTIALITY/ANONYMITY

All the information collected during the course of the study will be kept confidential. There are strict laws and policies in place that safeguard your privacy at every stage. Anonymised data collected during the study may be looked at by individuals from the Sponsor, from the NHS organisation or other authorities, where it is relevant to your taking part in this research. The sponsor of this research will also have access to non anonymised information.

WHAT WILL HAPPEN TO THE RESULTS OF THE STUDY?

The study will be written up as part of fulfilment of the Doctorate in Clinical Psychology. You will not be identifiable in any published material. The analysed data will be published in a peer review international journal. We are happy to provide you with a summary of the results and you will have the opportunity to express your interest in this following consent to the study.

FOR FURTHER INFORMATION

We will be glad to answer your questions about this study at any time. You can contact us at sarah.buckley@nhslothian.scot.nhs.uk or Massimo.tarsia@nhslothian.scot.nhs.uk

Should you wish to speak to someone independent of this study, please contact Helen.griffiths@ed.ac.uk

If you wish to make a complaint about the study please contact NHS Lothian:
NHS Lothian Complaints Team
2nd Floor
Waverley Gate
2 - 4 Waterloo Place
Edinburgh
EH1 3EG
Tel: 0131 465 5708
complaints.team@nhslothian.scot.nhs.uk.

Appendix I. Study information sheet (G.P version)

INFORMATION SHEET

Department of Clinical Psychology at the University of Edinburgh

Re: NAME OF CLIENT/DOB/ADDRESS

My name is Sarah Buckley and I am currently undertaking a thesis as part of the Doctorate in Clinical Psychology with the University of Edinburgh. This research is supervised by Dr. Matthias Schwannauer (University of Edinburgh) and Dr. Massimo Tarsia (NHS Lothian), and has been approved by the NHS Research Ethics Committee.

The above named person has provided written consent to take part in a voluntary research study that explores the variables that contribute to outcomes in Cognitive Behavioural Analysis System of Psychotherapy (CBASP) and Interpersonal Psychotherapy (IPT), specifically attachment style and reflective functioning (i.e. the ability to imagine mental states in self and others).

In this study, the above named person will be asked to complete an interview and a series of questionnaires. They will receive treatment as usual with the exception of additional questionnaires.

Please find attached information in relation to this research study.

FOR FURTHER INFORMATION

Dr. Massimo Tarsia and myself will be glad to answer your questions about this study at any time. You can contact us at Massimo.tarsia@nhslothian.scot.nhs.uk and sarah.buckley@nhslothian.scot.nhs.uk.

Appendix J. Demographic form (client version)

DEMOGRAPHIC PROFILE

Department of Clinical Psychology at the University of Edinburgh

PARTICIPANT NO: _____

Thank you again for your co-operation and participation in this study. Below are a series of questions about yourself.

Gender: ( ) Male ( ) Female

Age: _____(years)

Age of first episode of depression: _____ (years)

Other diagnoses/conditions:

_____

Prior treatment experience:

_____

_____

Other current treatments (including medication):

_____

_____

Appendix K. Demographic form (therapist version)

DEMOGRAPHIC PROFILE

Department of Clinical Psychology at the University of Edinburgh

PARTICIPANT NO: _____

Thank you again for your co-operation and participation in this study. Below are a series of questions about yourself.

Gender: ( ) Male ( ) Female

Age: _____(years)

Qualifications/accreditations:

_____

_____

Years of therapeutic experience: _____ (years)

Date of IPT/CBASP training: _____

Appendix L. Consent form (client version)

CONSENT FORM

Does attachment style and ability to imagine mental states in self and others relate to outcomes in therapy?

Participant ID:

[Insert contact details of person taking consent]

	Please initial box
1. I confirm that I have read and understand the information sheet (version3; 13/06/16) for the above study and have had the opportunity to consider the information and ask questions.	☐
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 relevant sections of my medical notes and data collected during the study may be looked at by individuals from the Sponsor (University of Edinburgh and NHS Lothian), from the NHS organisation or other authorities, where it is relevant to my taking part in this research. I give permission for these individuals to have access to my records.	☐
4. I agree to my anonymised data being used in future studies.	☐
5. I agree to my General Practitioner being informed of my participation in this study.	☐
6. I agree for my participation in the Adult Attachment Interview to be recorded.	☐
7. I agree for the researcher to use anonymised data previously collected should I lose the capacity to consent during this study.	☐

8. I agree to take part in the above study.

_____	_____	_____
Name of Participant	Date	Signature
_____	_____	_____
Name of person taking consent	Date	Signature

Original (x1) to be retained in site file. Copy (x1) to be retained by the participant.

Appendix M. Consent form (therapist version)

CONSENT FORM

The effects of attachment style and reflective functioning in therapy

Participant ID:

[Insert contact details of person taking consent]

	Please initial box
1. I confirm that I have read and understand the information sheet (version 3; 13/06/16) for the above study and have had the opportunity to consider the information and ask questions.	☐
2. I understand that my participation is voluntary and that I am free to withdraw at any time, without giving any reason, without being affected.	☐
3. I understand that relevant sections of my medical notes and data collected during the study may be looked at by individuals from the Sponsors [University of Edinburgh and NHS Lothian], from the NHS organisation or other authorities, where it is relevant to my taking part in this research. I give permission for these individuals to have access to my records.	☐
4. I agree to my anonymised data being used in future studies.	☐
6. I agree for my participation in the Adult Attachment Interview to be recorded.	☐
7. I agree for the researcher to use data previously collected should I lose the capacity to consent during this study.	☐
8. I agree to take part in the above study.	☐

_____ _____ _____

Name of Participant Date Signature

_____ _____ _____

Name of person taking consent Date Signature

Original (x1) to be retained in site file. Copy (x1) to be retained by the participant.

Appendix N. Debrief form (client version)

DEBRIEF FORM

Department of Clinical Psychology at the University of Edinburgh

Thank you for participating in this study. This study explored the relationship between attachment style and ability to imagine mental states in self and others in relation to outcomes in Cognitive Behavioural Analysis System of Psychotherapy (CBASP) and Interpersonal Psychotherapy (IPT). Gaining knowledge about this will allow us to adapt and tailor training and delivery to ensure successful therapy.

In this study you received treatment as usual with an addition of an interview and questionnaires to complete. This data allowed us to track your progress throughout treatment and to understand your attachment style and ability to imagine mental states in self and others.

If you have not already done so, please contact us at the below email addresses if you would like a summary of the findings from this study. Additionally you can contact us if you have any questions regarding the study.

Thank you again for your co-operation and participation in this study.

You can contact us at **sarah.buckley@nhslothian.scot.nhs.uk** or **Massimo.tarsia@nhslothian.scot.nhs.uk**

Appendix O. Debrief form (therapist version)

DEBRIEF FORM

Department of Clinical Psychology at the University of Edinburgh

Thank you for participating in this study. This study explored whether therapist and client attachment style and reflective functioning was associated with outcomes in Cognitive Behavioural Analysis System of Psychotherapy (CBASP) and Interpersonal Psychotherapy (IPT). Gaining knowledge about this will allow us to adapt and tailor training and delivery to ensure optimum clinical outcomes.

In this study you completed a demographic questionnaire and the Adult Attachment Interview. This interview assessed your attachment style based on attachment theory and your reflective functioning. You completed individual therapy with clients who also consented to participate in the research. This was treatment as usual with the addition of questionnaires. These additional questionnaires allowed us to look at the client's progress through treatment and the therapeutic alliance.

Upon completion of the study and analysis of the data you will be supplied with a summary of the findings. Additionally you can contact us if you have any questions regarding the study.

Thank you again for your co-operation and participation in this study.

You can contact us at sarah.buckley@nhslothian.scot.nhs.uk or
Massimo.tarsia@nhslothian.scot.nhs.uk

Appendix P. Empirical paper REC approval

Lothian NHS Board

South East Scotland Research Ethics Committee 02

Waverley Gate
2-4 Waterloo Place
Edinburgh
EH1 3EG
Telephone 0131 536 9000

www.nhslothian.scot.nhs.uk

Date 11 January 2016
Your Ref
Our Ref

Enquiries to: Joyce Clearie
Extension: 35674
Direct Line: 0131 465 5674
Email: Joyce.Clearie@nhslothian.scot.nhs.uk

11 January 2016

Ms. Sarah Buckley
Doctorate in Clinical Psychology Programme, University of Edinburgh
Medical School Doorway 6, Teviot Place
Edinburgh
EH89AG

Dear Ms. Buckley

Study title:	**Are therapist and client attachment style and reflective functioning associated with outcomes in Cognitive Behavioural Analysis System of Psychotherapy (CBASP); a longitudinal proof of concept study.**
REC reference:	**15/SS/0232**
IRAS project ID:	**187352**

Thank you for your letter of 5 January 2016, responding to the Committee's request for further information on the above research and submitting revised documentation.

The further information has been considered on behalf of the Committee by the Chair.

We plan to publish your research summary wording for the above study on the HRA website, together with your contact details. Publication will be no earlier than three months from the date of this opinion letter. Should you wish to provide a substitute contact point, require further information, or wish to make a request to postpone publication, please contact the REC Manager, Ms Joyce Clearie, joyce.clearie@nhslothian.scot.nhs.uk.

Confirmation of ethical opinion

On behalf of the Committee, I am pleased to confirm a favourable ethical opinion for the above research on the basis described in the application form, protocol and supporting documentation as revised, subject to the conditions specified below.

Conditions of the favourable opinion

The REC favourable opinion is subject to the following conditions being met prior to the start of the study.

Management permission must be obtained from each host organisation prior to the start of the study at the site concerned.

NHS
Lothian

Management permission should be sought from all NHS organisations involved in the study in accordance with NHS research governance arrangements. Each NHS organisation must confirm through the signing of agreements and/or other documents that it has given permission for the research to proceed (except where explicitly specified otherwise).
Guidance on applying for NHS permission for research is available in the Integrated Research Application System, www.hra.nhs.uk or at http://www.rdforum.nhs.uk.

Where a NHS organisation's role in the study is limited to identifying and referring potential participants to research sites ("participant identification centre"), guidance should be sought from the R&D office on the information it requires to give permission for this activity.

For non-NHS sites, site management permission should be obtained in accordance with the procedures of the relevant host organisation.

Sponsors are not required to notify the Committee of management permissions from host organisations

Registration of Clinical Trials

All clinical trials (defined as the first four categories on the IRAS filter page) must be registered on a publically accessible database within 6 weeks of recruitment of the first participant (for medical device studies, within the timeline determined by the current registration and publication trees).

There is no requirement to separately notify the REC but you should do so at the earliest opportunity e.g. when submitting an amendment. We will audit the registration details as part of the annual progress reporting process.

To ensure transparency in research, we strongly recommend that all research is registered but for non-clinical trials this is not currently mandatory.

If a sponsor wishes to contest the need for registration they should contact Catherine Blewett (catherineblewett@nhs.net), the HRA does not, however, expect exceptions to be made. Guidance on where to register is provided within IRAS.

It is the responsibility of the sponsor to ensure that all the conditions are complied with before the start of the study or its initiation at a particular site (as applicable).

Ethical review of research sites
NHS sites

The favourable opinion applies to all NHS sites taking part in the study, subject to management permission being obtained from the NHS/HSC R&D office prior to the start of the study (see "Conditions of the favourable opinion" below).

Non-NHS sites

Approved documents

The final list of documents reviewed and approved by the Committee is as follows:

Document	*Version*	*Date*
GP/consultant information sheets or letters [Information sheet - GPs]	2	05 January 2016
Interview schedules or topic guides for participants [Adult attachment Interview protocol schedule]		
Non-validated questionnaire [PHQ-9]	1	24 November 2015
Non-validated questionnaire [CORE-10]	1	24 November 2015

Non-validated questionnaire [Service Engagement Scale]	1	24 November 2015
Non-validated questionnaire [Demographic form - therapists]	1	09 November 2015
Non-validated questionnaire [Demographic form - clients]	1	09 November 2015
Other [Response to REC meeting]	1	05 January 2016
Participant consent form [Consent form - clients]	2	05 January 2016
Participant consent form [Consent form - therapists]	2	05 January 2016
Participant information sheet (PIS) [Debrief form - clients]	1	09 November 2015
Participant information sheet (PIS) [Debrief form - therapists]	1	09 November 2015
Participant information sheet (PIS) [Information sheet - clients]	2	05 January 2016
Participant information sheet (PIS) [Information sheet - therapists]	2	05 January 2016
REC Application Form [REC_Form_25112015]		25 November 2015
Research protocol or project proposal [Research Protocol]	1	17 November 2015
Summary CV for Chief Investigator (CI) [Sarah Buckley CV]	1	24 November 2015
Summary CV for supervisor (student research) [Supervisor CV]	1	24 November 2015
Validated questionnaire [Service Engagement Scale]		
Validated questionnaire [Working alliance Inventory Short revised Client]		
Validated questionnaire [Working alliance Inventory Short revised Therapist]		

Statement of compliance

The Committee is constituted in accordance with the Governance Arrangements for Research Ethics Committees and complies fully with the Standard Operating Procedures for Research Ethics Committees in the UK.

After ethical review

Reporting requirements

The attached document *"After ethical review – guidance for researchers"* gives detailed guidance on reporting requirements for studies with a favourable opinion, including:

- Notifying substantial amendments
- Adding new sites and investigators
- Notification of serious breaches of the protocol
- Progress and safety reports
- Notifying the end of the study

The HRA website also provides guidance on these topics, which is updated in the light of changes in reporting requirements or procedures.

User Feedback

The Health Research Authority is continually striving to provide a high quality service to all applicants and sponsors. You are invited to give your view of the service you have received and the application procedure. If you wish to make your views known please use the feedback form available on the HRA website: http://www.hra.nhs.uk/about-the-hra/governance/quality-assurance/

HRA Training

NHS
Lothian

We are pleased to welcome researchers and R&D staff at our training days – see details at http://www.hra.nhs.uk/hra-training/

15/SS/0232	Please quote this number on all correspondence

With the Committee's best wishes for the success of this project.

Yours sincerely

Ms Joanne Mair
Chair

Email:joyce.clearie@nhslothian.scot.nhs.uk

Enclosures: "After ethical review – guidance for researchers" *[SL-AR2]*

Copy to: *Mrs Jo-Anne Robertson*
Mr Gavin Robertson, NHS Lothian Research and Development Office

Appendix Q. R&D approval

University Hospitals Division

NHS Lothian

Queen's Medical Research Institute
47 Little France Crescent, Edinburgh, EH16 4TJ

FM/GM/Approval

27th January 2016

Ms Sarah Buckley
Trainee Clinical Psychologist
Doctorate in Clinical Psychology,
University of Edinburgh
Medical school, Doorway 6, Teviot Place
Edinburgh
EH89AG

Research & Development
Room E1.12
Tel: 0131 242 3330

Email:
R&DOffice@nhslothian.scot.nhs.uk

Director: Professor David E Newby

Dear Ms Buckley

Lothian R&D Project No: 2016/0020

Title of Research: Are therapist and client attachment style and reflective functioning associated with outcomes in Cognitive Behavioural Analysis System of Psychotherapy (CBASP); a longitidunal proof of concept study.

REC No: 15/SS/0232

Participant Information Sheet:
(Clients) Version 2 Dated 5th January 2015
(Therapists) Version 2 Dated 5th January 2015
Protocol: Version 2 Dated 17th November 2015

Consent Form:
(Clients) Version 2 Dated 5th January 2015
(Therapists) Version 2 Dated 5th January 2015

I am pleased to inform you that this study has been approved for NHS Lothian and you may proceed with your research, subject to the conditions below. This letter provides Site Specific approval for NHS Lothian.

We note that this project includes a researcher who will require a Clinical Research Access letter from NHS Lothian. The individual concerned Laura Maclean should contact our offices with a view to applying for the necessary documentation. Please note all final paperwork will have to be signed and returned to our R&D offices before the researcher can commence work on the project.

Please note that the NHS Lothian R&D Office must be informed if there are any changes to the study such as amendments to the protocol, recruitment, funding, personnel or resource input required of NHS Lothian.

Substantial amendments to the protocol will require approval from the ethics committee which approved your study and the MHRA where applicable.

Please inform this office when recruitment has closed and when the study has been completed.

I wish you every success with your study.

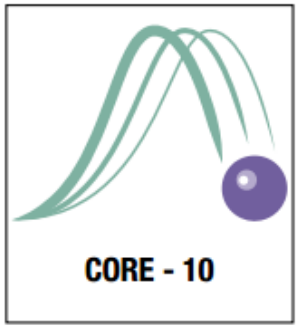
Yours sincerely

Fiona McArdle.

Ms Fiona McArdle
Deputy R&D Director

cc: Mr Tim Montgomery, Director of Operations, REH

Appendix R. CORE-10



CORE - 10

Site ID

Client ID

Therapist ID | numbers only (1) | numbers only (2)

Sub codes

Date form given (D D M M Y Y Y Y)

Age

Male ☐ **Female** ☐

Stage Completed

S Screening
R Referral
A Assessment
F First Therapy Session
P Pre-therapy (unspecified)
D During Therapy
L Last Therapy Session
X Follow up 1
Y Follow up 2

Stage

Episode

IMPORTANT – PLEASE READ THIS FIRST

This form has 10 statements about how you have been OVER THE LAST WEEK.
Please read each statement and think how often you felt that way last week.
Then tick the box which is closest to this.
Please use a dark pen (not pencil) and tick clearly within the boxes.

Over the last week	Not at all	Only Occasionally	Sometimes	Often	Most or all the time
1 I have felt tense, anxious or nervous	☐ 0	☐ 1	☐ 2	☐ 3	☐ 4
2 I have felt I have someone to turn to for support when needed	☐ 4	☐ 3	☐ 2	☐ 1	☐ 0
3 I have felt able to cope when things go wrong	☐ 4	☐ 3	☐ 2	☐ 1	☐ 0
4 Talking to people has felt too much for me	☐ 0	☐ 1	☐ 2	☐ 3	☐ 4
5 I have felt panic or terror	☐ 0	☐ 1	☐ 2	☐ 3	☐ 4
6 I made plans to end my life	☐ 0	☐ 1	☐ 2	☐ 3	☐ 4
7 I have had difficulty getting to sleep or staying asleep	☐ 0	☐ 1	☐ 2	☐ 3	☐ 4
8 I have felt despairing or helpless	☐ 0	☐ 1	☐ 2	☐ 3	☐ 4
9 I have felt unhappy	☐ 0	☐ 1	☐ 2	☐ 3	☐ 4
10 Unwanted images or memories have been distressing me	☐ 0	☐ 1	☐ 2	☐ 3	☐ 4

Total (Clinical Score*) ☐

* **Procedure**: Add together the item scores, then divide by the number of questions completed to get the mean score, then multiply by 10 to get the Clinical Score. If fewer than nine items completed, score should only be used very cautiously.

Quick method for the CORE-10 (if all items completed): Add together the item scores to get the Clinical Score.

THANK YOU FOR YOUR TIME IN COMPLETING THIS QUESTIONNAIRE

Appendix S. PHQ-9

PATIENT HEALTH QUESTIONNAIRE-9 (PHQ-9)

Over the last 2 weeks, how often have you been bothered by any of the following problems? *(Use "✔" to indicate your answer)*	Not at all	Several days	More than half the days	Nearly every day
1. Little interest or pleasure in doing things	0	1	2	3
2. Feeling down, depressed, or hopeless	0	1	2	3
3. Trouble falling or staying asleep, or sleeping too much	0	1	2	3
4. Feeling tired or having little energy	0	1	2	3
5. Poor appetite or overeating	0	1	2	3
6. Feeling bad about yourself — or that you are a failure or have let yourself or your family down	0	1	2	3
7. Trouble concentrating on things, such as reading the newspaper or watching television	0	1	2	3
8. Moving or speaking so slowly that other people could have noticed? Or the opposite — being so fidgety or restless that you have been moving around a lot more than usual	0	1	2	3
9. Thoughts that you would be better off dead or of hurting yourself in some way	0	1	2	3

FOR OFFICE CODING 0 + _____ + _____ + _____

=Total Score: _____

If you checked off any problems, how difficult have these problems made it for you to do your work, take care of things at home, or get along with other people?

Not difficult at all	Somewhat difficult	Very difficult	Extremely difficult
☐	☐	☐	☐

Developed by Drs. Robert L. Spitzer, Janet B.W. Williams, Kurt Kroenke and colleagues, with an educational grant from Pfizer Inc. No permission required to reproduce, translate, display or distribute.

Appendix T. WAI-SR

Working Alliance Inventory – Short Revised (WAI-SR)

Instructions: Below is a list of statements and questions about experiences people might have with their therapy or therapist. Some items refer directly to your therapist with an underlined space -- as you read the sentences, mentally insert the name of your therapist in place of _____ in the text. Think about your experience in therapy, and decide which category best describes your own experience.

IMPORTANT!!! Please take your time to consider each question carefully.

1. As a result of these sessions I am clearer as to how I might be able to change.

①	②	③	④	⑤
Seldom	Sometimes	Fairly Often	Very Often	Always

2. What I am doing in therapy gives me new ways of looking at my problem.

⑤	④	③	②	①
Always	Very Often	Fairly Often	Sometimes	Seldom

3. I believe___likes me.

①	②	③	④	⑤
Seldom	Sometimes	Fairly Often	Very Often	Always

4. ___and I collaborate on setting goals for my therapy.

①	②	③	④	⑤
Seldom	Sometimes	Fairly Often	Very Often	Always

5. ___and I respect each other.

⑤	④	③	②	①
Always	Very Often	Fairly Often	Sometimes	Seldom

6. ___and I are working towards mutually agreed upon goals.

⑤	④	③	②	①
Always	Very Often	Fairly Often	Sometimes	Seldom

7. I feel that___appreciates me.

①	②	③	④	⑤
Seldom	Sometimes	Fairly Often	Very Often	Always

8. _____ and I agree on what is important for me to work on.

⑤	④	③	②	①

Always Very Often Fairly Often Sometimes Seldom

9. I feel _____ cares about me even when I do things that he/she does not approve of.

① ② ③ ④ ⑤
Seldom Sometimes Fairly Often Very Often Always

10. I feel that the things I do in therapy will help me to accomplish the changes that I want.

⑤ ④ ③ ② ①
Always Very Often Fairly Often Sometimes Seldom

11. _____ and I have established a good understanding of the kind of changes that would be good for me.

⑤ ④ ③ ② ①
Always Very Often Fairly Often Sometimes Seldom

12. I believe the way we are working with my problem is correct.

① ② ③ ④ ⑤
Seldom Sometimes Fairly Often Very Often Always

 Goal Items: 4, 6, 8, 11; Task Items: 1, 2, 10, 12; Bond Items: 3, 5, 7, 9

Appendix U. WAI-SRT

Working Alliance Inventory – Short Revised - Therapist (WAI-SRT)

Instructions: Below is a list of statements about experiences people might have with their client. Some items refer directly to your client with an underlined space – as you read the sentences, mentally insert the name of your client in place of ___ in the text.

IMPORTANT!!! Please take your time to consider each question carefully.

1. ___ and I agree about the steps to be taken to improve his/her situation.

①	②	③	④	⑤
Seldom	Sometimes	Fairly Often	Very Often	Always

2. I am genuinely concerned for ___'s welfare.

⑤	④	③	②	①
Always	Very Often	Fairly Often	Sometimes	Seldom

3. We are working towards mutually agreed upon goals.

①	②	③	④	⑤
Seldom	Sometimes	Fairly Often	Very Often	Always

4. ___ and I both feel confident about the usefulness of our current activity in therapy.

①	②	③	④	⑤
Seldom	Sometimes	Fairly Often	Very Often	Always

5. I appreciate ___ as a person.

⑤	④	③	②	①
Always	Very Often	Fairly Often	Sometimes	Seldom

6. We have established a good understanding of the kind of changes that would be good for ___.

⑤	④	③	②	①
Always	Very Often	Fairly Often	Sometimes	Seldom

7. ___ and I respect each other.

①	②	③	④	⑤
Seldom	Sometimes	Fairly Often	Very Often	Always

8. ___ and I have a common perception of his/her goals.

⑤	④	③	②	①
Always	Very Often	Fairly Often	Sometimes	Seldom

9. I respect ___ even when he/she does things that I do not approve of.

①	②	③	④	⑤
Seldom	Sometimes	Fairly Often	Very Often	Always

10. We agree on what is important for ___ to work on.

⑤	④	③	②	①
Always	Very Often	Fairly Often	Sometimes	Seldom

Appendix V. Empirical paper study protocol

Doctorate in Clinical Psychology
Study Protocol

Are therapist and client attachment style and reflective functioning associated with outcomes in Cognitive Behavioural Analysis System of Psychotherapy (CBASP); a longitudinal proof of concept study.

Sarah Buckley

Version 2; 17/11/15

1) Introduction

The National Institute of Clinical Excellence (NICE, 2009) guidelines describe depression as the most common mental health disorder, with 4 – 10% of the population likely to experience major depression, and 2 – 5% likely to experience dysthymia (a mild, chronic form of depression). In particular, one in five people in Scotland will experience depression in their lifetime (Braunholtz, Davidson, King, 2004). The cognitive, emotional, and motivational effects that characterise depression have been shown to significantly reduce one's ability to work (Wang et al., 2014), lead to an increase in physical illness (Bultmann et al., 2006), and increase the risk of suicide (Chachamovich, Stefanello, Botega, Turecki, 2009).

Chronic depression

Chronic depression, also known as persistent depressive disorder, is defined as a "chronic and persistent disturbance in mood present for at least 2 years… and characterized by relatively typical depressive symptoms, such as anorexia, insomnia, decreased energy, low self-esteem, difficulty concentrating, and feelings of hopelessness" (DSM5, 2013). Research into chronic depression has been complicated by changes in diagnostic terms, with some authors defining chronicity as symptomology present for a period of six months or more, and others defining it as present for two years or more. Keller et al. (1992) found that 40% of those diagnosed with depression continued to meet diagnostic criteria one year on, with 20% meeting criteria over two years later. In contrast to acute depression, chronic depression is associated with poorer social functioning (Friedman, 1995), less responsivity to treatment (Thase, Reynolds, Frank and Simons, 1994), unmet treatment needs (Blanco, Okuda, Markowitz, Liu, Grant & Hasin, 2010), and greater comorbidity and functional impairment (Klein, 2008).

National guidelines for intervention

The Scottish Intercollegiate Guidelines Network (SIGN) concluded, on the basis of the evidence available, that behavioural activation, individual cognitive behavioural therapy (CBT), and interpersonal therapy are recommended as first line treatments for patients with depression. Secondary to this, group mindfulness based cognitive therapy (MBCT), problem-solving therapy, and short-term psychodynamic psychotherapy were also suggested as effective treatments (SIGN, 2010). However, these guidelines are based on broad and wide-ranging classifications of depression severity, with a tendency for studies to either include only patients with mild to moderate depression, or fail to specify the severity of depression studied. As a result of this disparity, SIGN prospectively excluded several groups when conducting a review of the evidence base, including severe depression and dysthymia. It must therefore be acknowledged that the evidence base and resulting guidelines for intervention fail to adequately account for severe, enduring, and chronic forms of depression.

CBASP

Cognitive behavioural analysis system of psychotherapy (CBASP) is one of the only psychological models and treatments that has been designed specifically for patients diagnosed with chronic depression, defined as symptoms occurring for 2 years or more (McCullough, 1984). It is a manualised psychotherapeutic treatment that draws upon

Piaget's (1926) model of cognitive-emotional development, suggesting that the aetiology of chronic depression is a result of arrested maturational development (McCullough, 2000). It states specifically that patients operate at a preoperational level as a result of maltreatment or limited/absent nurturing in childhood. CBASP aims to help patients to understand how their 'stimulus value' within their environment affects the outcome of interpersonal situations. This is aided through a combination of cognitive, behavioural, and interpersonal techniques, many of which are distinct to CBASP.

At the cornerstone of the treatment is the structured technique "situational analysis" (SA), which aims to teach patients the consequences of their behaviour through the focus on thoughts and related behaviour of a specific situation. Therapists utilise the "transference hypothesis" (learned interpersonal expectancies developed in early life), which is formulated early in treatment, to help patients to recognize the distinction between therapist and other, and resolve similar difficulties outside of the therapeutic relationship. Therapists are promoted to actively address problematic interpersonal behaviour and transference as they occur, via the therapeutic relationship and disciplined personal involvement (DPI) in order to "shape behaviour and to compare and contrast the practitioners' positive behaviours with those of malevolent significant others" (McCullough, Schramm, & Penberthy, 2015, p. 30). In summary, CBASP provides the therapist with guidance and techniques to help teach the patient the effects their cognitive and behavioural responses can cause interpersonally. Additionally it helps patients to gain desired outcomes through using CBASP techniques such as problem solving and modelling.

Evidence base for CBASP

Much of the research into CBASP has come from a large multi-centre randomized control trial conducted into the efficacy of CBASP for individuals with chronic depression, defined as meeting DSM-IV criteria for a chronic major depressive disorder for at least 2 years duration. Keller et al. (2000) compared Nefazodone (an antidepressant), CBASP, and their combination with 681 participants. Following 12 weeks of treatment in which participants were randomized into one of the conditions, CBASP alone was found to be as effective as antidepressants (73% in the combined group, compared with 48% in each individual treatment group). The combination of both CBASP and Nefazodone was found to be the most effective. These positive outcomes sustained at four month follow up highlighting that CBASP and antidepressants maintain positive gains. Subsequent analyses of the data from this trial found that those with childhood trauma responded better to psychotherapy alone rather than to antidepressant monotherapy, and combination treatment was only marginally superior with this cohort (Nemeroff, 2003). This suggests that CBASP specifically provides a vital contribution in the treatment of patients with chronic depression and with a history of childhood abuse. Additionally, Schatzberg et al. (2005) found that a change from Nefazodone to CBASP, or vice versa, was associated with significant positive symptom improvement. This finding suggests that for patients who do not respond to anti-depressants, CBASP can be an effective treatment, and vice versa. However caution must be given considering this study did not have a placebo control group, and there was a large drop out rate in the group receiving CBASP first, which raises concerns around generalisation. Out width the Keller et al. (2000) data, Swan et al., (2014) conducted an independent study with 46 patients who met either DSM-IV criteria for

chronic major depressive disorder or criteria for a recurrent major depressive disorder with incomplete remission (APA, 2000) and were receiving CBASP. They found through analysis of the Hamilton Rating Scale for Depression (HRSD-24; Hamilton, 1967) and Beck Depression Inventory (BDI-II; Beck et al., 1996) that 61% of patients who completed treatment either met criteria for remission or showed clinically significant improvement, whereas 39% of patients showed no change. Additionally, all subscales on the Brief Symptom Inventory (BSI; Derogatis and Melisaratos, 1983) were reduced at post-treatment, and 68% of patients no longer met DSM-IV diagnostic criteria for major depression.

More recent research has attempted to account for the variance that patient variables contribute to outcomes in CBASP. Blalock et al. (2008), utilizing data from the aforementioned Keller et al. (2000) study, looked at the role of cognitive and behavioural mediators in combined pharmacotherapy and CBASP. Through a path analysis model, they found that attributional style for negative events and escape-avoidance coping were significantly related to treatment outcome, accounting for 60% of the difference in outcome in combination treatment. The researchers suggest that these variables are potential treatment mechanisms in combination therapy, and point to the impact that CBASP and pharmacotherapy in combination can have on maladaptive cognitions and coping. Arnow et al. (2013) looked at the role of therapeutic reactance in relation to outcome. Reactance can be defined as "a motivational state aimed at recapturing the affected freedom and preventing the loss of others" (Fogarty, 1997), or "the client's reluctance to change" (Cowan and Presbury, 2000, p.412). Reactance was found to positively predict treatment outcomes in CBASP alone, independently of therapeutic alliance. These results suggest that therapeutic reactance may serve a useful function with the chronically depressed population in which therapists respond directly to ruptures in the therapeutic relationship. Santiago et al. (2005) also looked at the patient's role in relation to outcomes, specifically whether patient skill acquisition, particularly SA acquisition, would act as a mediator of the therapeutic alliance and depression symptomology at end of treatment. This study found that both the therapeutic alliance and skill acquisition contributed independently to the reduction of depressive symptomology. Klein et al. (2003) found similar results in which early therapeutic alliance significantly predicted improvement in depressive symptoms.

The above highlights the increasing number of studies looking at the role of patient variables in relation to clinical outcomes in CBASP. Vocissano et al. (2014) is the only study that has looked at therapist variables in relation to CBASP outcomes. They found that the therapeutic relationship, lower overall caseload, and therapist psychodynamic orientation were associated with positive change in the depression outcome measures post treatment. However the role of other therapist variables, and the possible interaction with client variables, in relation to CBASP has been neglected.

Limitations of evidence of CBASP

There has been an increasing amount of research conducted into the effectiveness of CBASP in relation to chronic depression. As a result of this research we now know that CBASP in combination with antidepressants is the most effective treatment for chronic depression. However, we are less aware of the role that specific and common ingredients of

this therapy are accounted for in outcomes. Given the specific and unique techniques in CBASP that therapists must adhere to (such as disciplined personal involvement, transference and countertransference, situational analysis), little research has looked at therapist and client variables that may contribute to therapeutic alliance/engagement, and clinical outcomes.

Current study

The current study proposes to explore two therapist variables that are hypothesized to contribute to outcomes based on the theoretical framework CBASP is grounded on, namely therapist attachment style and reflective functioning.

Evidence suggests that therapist attachment style influences therapeutic alliance and treatment outcome, in particular higher therapist attachment security was associated with better therapeutic alliance and outcome with more severely impaired patients (Schauenbrg et al., 2010). Caution must be taken when considering these results as a range of psychotherapies were used on a wide range of client presentations. Similarly, as a result of the care-giving nature of the therapeutic process, research has suggested that patient attachment styles may be relevant to engagement, process, and outcomes of psychological therapies (Levy et al., 2011; Smith et al., 2010). However there is a lack of research investigating the importance and effects of both therapist and client attachment styles, their potential interaction, and how they affect the process and outcome in psychological therapies. Given the emphasis CBASP places on interpersonal deficits and the therapeutic relationship, it is of relevant interest to explore the effects of attachment styles of both therapist and client.

Similarly, therapist and client reflective functioning (RF) have been relatively unexplored in relation to therapeutic outcomes. RF is a process whereby one makes sense of their own and others mental and emotional state. In a therapeutic context RF facilitates attunement and therapeutic engagement, which in turn allows for the exploration of interpersonal sensitive difficulties. With the encouraged active role in facilitating interpersonal exploration within the CBASP framework and the emphasis on DPI, therapist and client reflective functioning is hypothesized to play an important role in CBASP and in treatment outcomes.

In addition to looking at clinical outcomes (i.e. reduction of depressive symptomology), this study proposes to view therapeutic alliance and engagement as important outcomes considering they are essential to the CBASP framework. Therapeutic alliance, conceptualized broadly as "the collaborative and affective bond between therapist and patient" (Martin, Garske, & Davis, 2000, p.438) and its association with treatment outcomes in psychotherapy has been evidenced several times. Researchers suggest that it "now stands as a necessary condition of change across all forms of psychotherapy" (Constantino, Castanguay, & Schut, 2002, p.120). The therapeutic alliance is of particular importance with individuals with chronic depression given the interpersonal deficits, early childhood maltreatment, and little expectation of change they experience (Santiago et al., 2005). Treatment engagement, which can be defined as "being an active participant in a collaborative relationship with a therapist to work to improve one's condition" (Lizardi &

Stanley, 2010, p. 1184), has similarly been associated with positive treatment outcomes in psychotherapy (LeBeau et al., 2013). Much of engagement research has been conducted in the areas of parent and family therapy, and substance abuse treatment (Holdsworth, Bowen, Brown & Howat, 2014), with a lack of specificity to chronic depression. Considering the established association of treatment engagement with positive outcomes it was deemed important to include this variable in the study for exploration.

2) Research Questions / Objectives

Principal research question / objective.
Are therapist and client attachment style and reflective functioning associated with outcomes in CBASP?

Secondary research questions / objectives.
Is there an interaction effect between therapist and client attachment style and reflective functioning that is associated with outcomes in CBASP?

3) Methodology

Participants
The study will be completed within the NHS Lothian. Two sets of participants from this health board will be included in this study. NHS Lothian therapists (approximately n = 10) who have been trained in CBASP will be invited to take part in this research. Clients on the in-service waiting list or identified as suitable from team clinicians will be invited to take part in this study. A minimum of 2 clients per therapist (approximately n = 20) will be invited to take part in this research.

Design
A longitudinal case series design will be utilised to address the research question. As this is a proof of concept study, a longitudinal research design will be implemented to investigate possible relationships. This study design was chosen for its ability to describe and explore the variables under investigation in the intervention, understanding how the intervention is implemented and also received. Case series analysis in particular allows detailed identification of variables that influence individual experience and outcome.

Procedure
CBASP therapists will be presented with written information (via email or internal mail) on the study prior to consenting to participation. They will have the opportunity to meet with the researcher to discuss their involvement. CBASP clients will be recruited via service waiting lists and through identification for suitability in the study by team clinicians. Clients who are deemed appropriate for the study and meet the inclusion criteria will be provided with written information (i.e. provided by clinician already involved in their care or via post) and contact details of the researchers should they wish to participate. Those expressing interest will meet with the researcher first. Information regarding the study will again be relayed to ensure they understand their involvement. They will be told that their participation is voluntary and they may terminate their participation at any stage.

Confidentiality and anonymity of audio recordings and outcome measures will also be explained. Those wishing to consent following this explanation will then be asked to complete a written consent form. This consent form will include information about their understanding of the study, and consent regarding the audio recording of the Adult Attachment Interview (AAI) and outcome measures. In this session, clients will also be asked to complete baseline measure(s) and a demographic questionnaire. Details of these questionnaires are detailed elsewhere in this protocol.

CBASP will consist of treatment of usual (i.e. one one-hour individual sessions on a weekly basis for up to 20 weeks) with additional outcome measures to be completed at each session. Therapists will receive a research pack which will outline when, and what, measures to administer and complete. To ensure anonymity and confidentiality of data collected, participants will be given ID numbers before data is submitted to a spread sheet for analysis.

4) Principal inclusion and exclusion criteria

Inclusion criteria
Clients will be included in this study if they meet the following criteria:
Meet DSM-5 criteria for persistent depressive disorder.
Have the capacity to provide informed consent
Are aged 18 – 64 inclusive
Speak fluent English
Do not meet any of the exclusion criteria.
Therapists will be included in the study if they meet the following criteria:
Have received training in CBASP.
Have a qualification in at least one psychological therapy.

Exclusion criteria
Clients will be excluded from the study if they do not meet inclusion criteria, as well as fulfilling any of the following criteria:
Current significant substance misuse.
Undergoing other psychological treatment.
Presence of learning disability or significant cognitive impairment.
Presence of psychosis.

Therapists will be excluded from the study if they do not meet the inclusion criteria.

5) Data collection

Outcome measures
Participant demographic will be collected at first appointment via a written questionnaire. For clients this will include information such as age, sex, first episode of depression, other current treaatments, and any co-morbid conditions. CBASP therapist demographic factors will also be collected and will include information such as age, sex, years of experience as a

therapist, date trained in CBASP, previous qualifications in psychological therapies. Below is a list of baseline and outcome measures that will be administered.

Adult Attachment Interview (AAI; George, Kaplan, & Main, 1985) is a semi-structured interview about relationships in early childhood and the meaning in which the participant gives them. It draws upon Bowlby's (1973) hypothesis that the early relationships and attachments we secure become an internal working model for relationships in later life. It also explores the effects of these experiences on the individual's present functioning. Interviews last approximately one hour and are audiotaped for verbatim transcription. Transcripts are then coded by trained raters and scored on a set of nine-point scales in relation to the participant's childhood experiences with each parent/carer, and their present state of mind in relation to attachment (Crowell et al., 1996). Based on these ratings, the participants are assigned to one of the following attachment styles: autonomous-secure adults, dismissing adults, preoccupied adults, and unresolved. Crowell et al. (2008) found the AAI to have adequate discriminant validity in a sample of women with preschool children. Similarly, Bakermans-Kranenburg & Van Ijzendoorn (1993) and Sagi et al. (1994) found the AAI classifications to be reliable over time and across interviewers. The AAI will be administered to participants and coded by trained and reliable coders, who are PHD student at the University of Edinburgh.

Reflective Functioning scale (RF; Fonagy et al., 1998). The RF is a scale used by raters to score transcripts of the AAI for reflective functioning. Raters apply coding to reflective statements that materialize in the therapists AAI transcript on a scale of 1 – 9. The RF will similarly be administered and coded by trained and reliable coders. Bouchard et al. (2008) found the RF to have adequate reliability (r = .86) with a clinical and nonclinical population. The RF was chosen as it has been used extensively in a wide range of studies and is therefore comparable to other studies, as well as the practicality of rating alongside the AAI.

Clinical Outcome in Routine Evaluation Measure (CORE-10; Barkham et al., 2012). The CORE-10 is a 10-item self report measure that asks respondents to rate how they have felt over the last week in areas of 'subjective well being', 'problems', and 'functioning'. It has been found to be a valid and reliable tool with good psychometric properties, as well as practical in terms of use with people presenting with mental health difficulties in primary care settings (Barkham et al., 2013). This is a widely used measure in the NHS and has utility in comparing to other UK studies. This measure is routinely collected in each session in CBASP.

Patient Health Questionnaire (PHQ-9; Kroenke et al., 2001) is questionnaire with 9 items pertaining to the DSM-IV depressive symptoms over the previous two weeks. Scores of 0 -5 represent mild depression; 6-10 moderate; 11-15 moderately severe; 16-20 severe depression. It is completed by the patient in a relatively short period of time and can be scored quickly by the clinician, providing it with clinical utility. The PHQ-9 has been found to have good validity and reliability as establishing in studies involving 8 primary care and 7 obstetrical clinics (Kroenke et al., 2001). It has also demonstrated high internal consistency at baseline and end of treatment in UK primary care (0.83 and 0.92; Cameron,

Crawfod, Lawton, Reid, 2008). A meta-analysis conducted by Manea, Gilbody & McMillan (2012) found that the PHQ-9 had good diagnostic ability in detecting major depressive disorder. The PHQ-9 will be administered to the client during each session of CBASP.

Working Alliance Inventory – Short form: Therapist and client versions (WAIT and WAIC; Hovarth, 1981; Horvarth & Greenberg, 1989). The WAI is a 12 item self-report measure of the therapist and clients' subjective experience of the therapeutic relationship. Items are rated on a seven point likert scale ranging from 1 (never) to 7 (always). Scores are accumulated to provide a total score of working alliance. Higher scores are representative of more positive ratings of the working alliance. Internal consistency has been found to be appropriate with estimates of the total score as .93 for the client version and .87 for the therapist version (Hovarth & Greenberg, 1986, 1989). The WAI will be completed by all participants at each session.

Service Engagement Scale (SES; Tait, Birchwood, Trower, 2001). The SES is 14 item clinician rated questionnaire designed to measure service user engagement. Items are rated on a four-point Likert scale from "not at all or rarely" to "most of the time". Higher scores indicate lower engagement. This questionnaire is composed of four subscales: availability, collaboration, help-seeking, and treatment adherence. It has been found to have good test-retest reliability and validity in a study of an assertive outreach service for schizophrenia (Tait, Birchwood, Trower, 2001). Therapists will complete this questionnaire at the end of treatment.

6) Sample Size

Within this case series longitudinal design, regression models will be used within subjects to identify key predictors in terms of individual outcomes. Within the case series framework results will be reported in terms of confidence intervals of the effect sizes to give indicators of effects within this study identifying novel predictors. As suggested by Thabane et al. (2010), sample size for pilot and feasibility studies should be "representative of the target study population…[and] large enough to provide useful information about the aspects that are being assessed for feasibility (p.5). In line with the resources available within NHS Lothian, 10 therapists have been identified. Service waiting lists for CBASP will ensure that each therapist will have a minimum of two cases to pick up following training, which will result in the recruitment of 20 CBASP clients.

Confidence in sample size

10 therapists have been identified as suitable for participation in this study. These therapists will have the option to choose whether to take part in the research. I have confidence that all therapists will partake in the study so they can contribute to our understanding of CBASP. Similarly, clients will be given the choice to take part in the research. To ensure at least one set of outcomes are achieved it is an aim of the study to provide the therapist with a minimum caseload of 2.

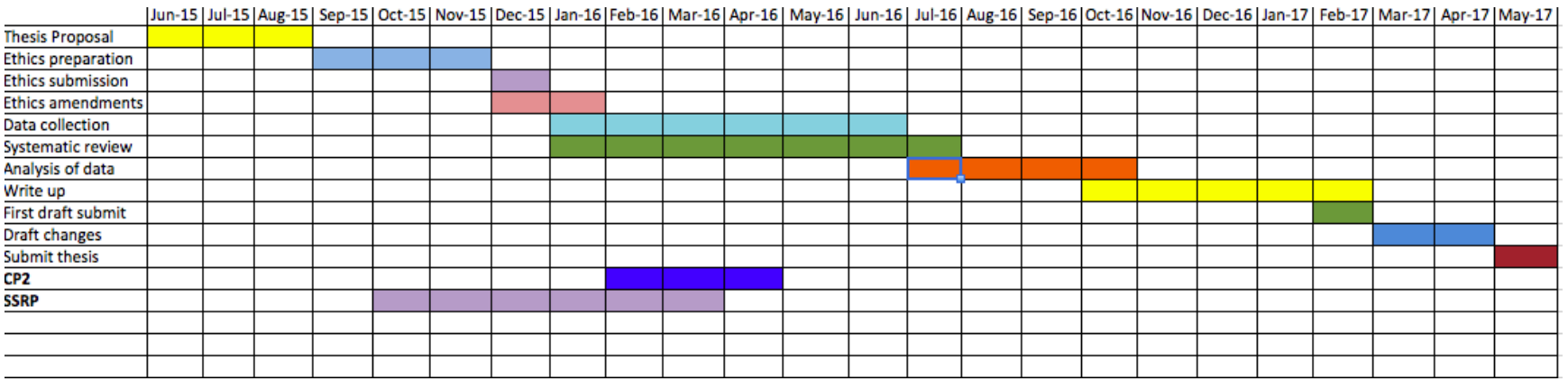
7) Analysis

All data will be analysed using the Statistical Package for Social Sciences (SPSS) software with a significance level of 0.05. As the parameters of the variables we are assessing are

unknown, non-parametric tests will be utilised. As the main objective is to explore the relationship between variables longitudinally, data from different points in treatment will be graphically represented for each participant and visually inspected.

Descriptive statistics will be analysed through the use of nonparametric analysis and distributions. To assess the relationship between variables, nonparametric equivalents of a correlation coefficient will be used. Multiple regression analyses inputting predictor variables (i.e. hierarchical linear modelling) will allow exploration of trends and effects across participants. These statistical analyses will allow the primary and secondary research questions to be explored and answered within the parameters of this proof of concept study.

8) Project Management: Timetable



9) Management of Risks to Project

As with any piece of research there are a multitude of risks. These risks have been discussed openly with academic and clinical supervisors and steps have been considered to take in each instance. As is evidenced in the literature, individuals with chronic depression are more likely to drop out of treatment than those without chronic depression (Arnow et al., 2007) and thus may pose a difficult population to study, especially given the already limited sample size involved in this study. Providing each therapist with a minimum caseload of two will maximise the potential of each therapist reaching the end of treatment with at least one complete set of data that can be analysed. Additionally should any of these difficulties be identified early on in the data collection process, there is the possibility of extending the data collection period.

10) Knowledge Exchange

Given the heavy involvement of participants in this study, I intend to dedicate time to report the results to participants, supervisors, and those who were involved in the data collection process. As the NHS health board involved has promoted the use of CBASP as a viable treatment option for chronic depression, I would be keen to disseminate the results of this study to key stakeholders, front line staff, and other NHS health boards in Scotland. I intend to publish my findings in an appropriate international peer review journal. I would be especially keen in making my research Open Access to ensure its accessibility to a wider range of professionals and lay persons. I will present my findings at the bi-annual CBASP international conference in Germany 2017, in which presenters are invited and funded during their stay. This will allow me to present my findings to the international CBASP community, including the developer of CBASP, Dr. James McCullough. Finally, as a research aligned trainee in the area of CBASP, I aim to build upon my research findings in my final year.

11) Anticipated benefits or implications for services of the project

Given that CBASP is a treatment model that is endorsed by the NHS health board, gaining a deeper knowledge and understanding about the active ingredients involved in its success ensures current practice is embedded in an evidence base. Conducting this research adds to the gap in the literature and identifies areas in which further exploration is warranted. Given the emphasis on therapist variables in relation to treatment outcomes, the results of this research will have wider implications from a service resource perspective. Training may be altered or needs emphasised in line with the results of the study to ensure most efficacious outcomes.

12) Potential costs to this project

A small cost comprising of stationary, printing, and travel will be accumulated through the data collection process and through dissemination of the results of the study. Stationary and printing will be provided by the NHS health board, and travel expenses incurred through data collection and dissemination will be funded through the budget allocated to trainees undertaking a thesis from the University of Edinburgh.

13) Any other relevant information.
No.

14) Key References

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