Trauma, Attachment, Emotion Regulation and Coping Mechanisms in Mental Health

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Abstract

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A significant proportion of the population experience adverse events in childhood. For some, the literature demonstrates that these adverse events contribute towards the later development of severe and enduring mental health problems such as psychosis and borderline personality disorder (BPD). These diagnoses are associated with poor outcomes including reduced Quality of Life (QoL). Whilst we are making progress in our understanding though the advances in theoretical models, reviews of current literature, and new research, the multi-faceted mechanisms and influence of different variables require further exploration.

The first aim of this research was to ascertain if coping mechanisms were related to QoL in individuals diagnosed with schizophrenia. The second aim was to explore whether BPD, psychosis and control populations differ in their trauma history, symptomatology (psychotic and BPD), attachment style and difficulties in emotion regulation; to assess if trauma type and severity relate to symptomatology, attachment and emotion regulation; and finally, to assess if attachment or emotion regulation influence the relationship between trauma and symptomatology.

A systematic review of the literature generated 2795 studies. Nine studies met inclusion criteria for data synthesis. A quantitative questionnaire-based empirical study involved 120 adult participants (28 BPD, 29 psychoses and 63 controls).

Synthesis demonstrated evidence for a small to medium positive correlation between problem-focused coping and QoL. Between group differences were found for all

variables and trauma correlated with all variables. Only emotion regulation mediated the influence of trauma on both BPD and psychotic symptomatology.

More research is required for conclusions to be determined about how coping relates to QoL in schizophrenia. The empirical results evidence the necessity of further research and development towards multifactorial models which incorporate the complex interacting influences of trauma, attachment and emotion regulation. Models should be integrative and be applied beyond diagnostic boundaries to best promote recovery.

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Contents

Chapter 1. General Introduction

The presented thesis portfolio includes a systematic review and empirical paper centering around complex mental health difficulties. This chapter introduces this and outlines important concepts and theories. It summarises the rationale and aim of the work completed.

1.1. Adverse Events

Stress symptoms, including fear, helplessness, reduced sleep, anxiety and concentration changes, can be evoked when a potentially threatening experience is faced. These acute symptoms typically reduce after a few days or weeks, but for a minority of people these symptoms are found to be more enduring. This then negatively impacts on interpersonal and psychosocial functioning (Keane, Marshall, & Taft, 2006) and contributes towards the later development of longer-term mental health difficulties such as complex Post Traumatic Stress Disorder (PTSD), depression, psychosis, personality disorders and anxiety problems (e.g. Blasc o-Ros, Sánchez-Lorente, & Martinez, 2010; Creamer, Burgess, & McFarlane, 2001; Roberts Gilman, Breslau, Breslau, & Koenen, 2011).

Within the general population, lifetime trauma exposure is reported in around 70% of individuals (Kessler et al., 2017), with a mean of 2.2 distinct types of traumas typically experienced (Briere, Agee, & Dietrich, 2016), and rates for childhood-based traumas being around 14-32% (Briere & Elliot, 2003). Determining the predictive factors influencing the differential course and impact of mental health difficulties remains problematical. Risk and protective factors are an area of growing interest within research. The timing of the traumatic event is shown to be an important variable.

1.2. Childhood Trauma

When trauma is experienced in early life there are extensive impacts on a child (e.g. Infurna et al., 2016; Heim & Nemeroff, 2001) including an increased risk of developing mental health difficulties in adulthood (e.g. Read & Bentall, 2012; Van der Kolk, 2017) even after controlling for other potential influential background variables (Briere & Elliot, 2003). Childhood traumas (i.e. those occurring before 18 years of age) are found to be linked to higher PTSD symptoms, lowered wellbeing, reduced coping ability and poorer social support when compared to adult-based traumas (Ogle, Rubin, & Siegler, 2013). Patients with mental health difficulties who have childhood trauma histories have been found to present with lower self-esteem (Fowke, Ross, & Ashcroft, 2012), increased dissociative symptomatology (Sar et al., 2010), an incoherent self-concept (Goodman, Quas, & Ogle, 2010) and higher suicide risk (Ferraz at al., 2013; Links et al., 2013) than those without childhood trauma histories.

Children can be exposed to a range of traumatic experiences including neglect (physical and emotional) or physical, emotional and sexual abuse (Terr, 2003). Other adverse events during childhood such as parental separation, perceiving domestic violence, parental mental health difficulties, experiencing a national disaster and being bullied can also be considered within the context of childhood trauma (Kessler et al., 2010; Read, Benthall, & Fosse, 2009). Trauma can be a single event (acute) or can involve multiple or prolonged (complex trauma) traumatic events (Herman, 1992). Van der Kolk (2017) suggests that about 80% of childhood traumas begin at home and Spinazzola et al. (2005) indicates that most complex traumas occur within a child's caregiving system. Interpersonal childhood traumas, including those involving a primary caretaker, are found to be particularly detrimental to symptom severity and functioning when compared to adult-

based interpersonal traumas or non-interpersonal traumas (e.g. Cloitre et al., 2009; Green et al., 2000; Van der Kolk, 2017).

Individuals with a childhood trauma experience are shown to be more likely to experience complex trauma in terms of increased trauma frequency (Kessler, 2000) or multiple types of abuse occurring (Briere & Elliorr, 2003). Complex trauma is linked to poorer outcomes, such as increased symptomatology (Briere, Kaltman, & Green, 2008), when compared with single event traumas (Moroz, 2005). Complexity of symptoms is found to increase with the higher number of traumas experienced during childhood or adulthood (Cloitre et al., 2009). In comparison to other disorders and non-clinical populations, abundant trauma histories are shown to be more prevalent in complex mental health diagnoses such as Borderline Personality Disorder (BPD) and psychosis (Golier et al., 2003; Picken, Berry, Tarrier, & Barrowclough, 2010). There are several domains which are found to be impaired in children who are exposed to complex trauma (see Figure 1; Cook et al., 2005) and there are ongoing developments in our understanding and conceptualisation of the later impacts (including intra- and interpersonal problems) in adulthood (see Van der Kolk, 2017).

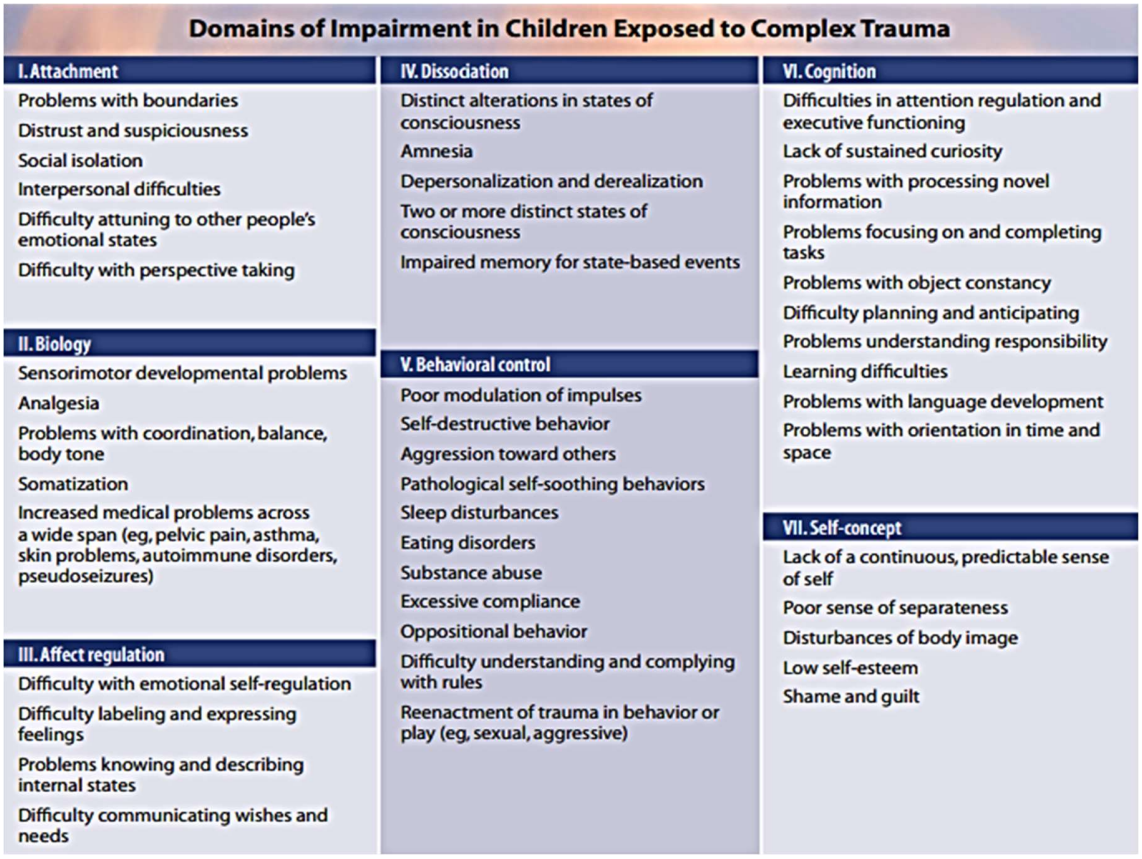

Figure 1. Domains of Impairment in Children Exposed to Complex Trauma. From Cook et al. (2005), pp 392.

BPD and psychosis diagnoses have a growing evidence base demonstrating childhood trauma to be influential to their development and associated symptomatology.

1.3. Psychosis

Psychosis refers to an individual's disconnection from reality including the disruption of their thoughts, senses, perception, emotion and behaviour. Psychotic experiences are reported in between 5-15% of the general population (Balaratnasingam & Janca, 2015; McGrath et al., 2015) and are found to be linked to 3.20 times higher self-injurious behaviour risk than those without (Honings, Drukker, Groen, & van Os, 2016).

Several disorders contain psychotic elements including schizophrenia, psychosis with depressive symptoms, schizoaffective disorder, depression with psychotic symptoms and mood disorders (Morrissette, 2011). Schizophrenia is ranked in the top ten causes of disability and is the most common psychotic disorder (Häfner, Löffler, Maurer, Hambrecht, & An Der Heiden, 1999; Organisation, 2015; Stanghellini & Ballerini, 2002).

Psychotic disorders are costly in relation to treatment, reduction in economic productivity and for the wider society (e.g Amos, 2012; Kennedy, Altar, Taylor, Degtiar, & Hornberger, 2014; Olesen, Gustavsson, Svensson, Wittchen, & Jönsson, 2012; Rössler, Salize, van Os, & Riecher-Rössler, 2005; Wu et al., 2005). Recovery rates from psychosis vary between 14-20% but evidence shows full functional recovery is not achieved for a substantial proportion of individuals, with over 70% remaining unemployed (Davidson & Murray, 2014). However, there may be differences based on diagnoses: for example, for those specifically diagnosed with First Episode Psychosis (FEP), the pooled remission rate was found to be around 38% in a recent meta-analysis (Lally et al., 2017). Given that the functional and occupational recovery rates are poor, and the consequences for the individual are debilitating, psychosis is an essential area for research (Bottlender, Strauß, & Möller, 2010).

1.4. Childhood Trauma and Psychosis

Childhood trauma histories are frequently reported in individuals diagnosed with psychosis (e.g. Berry, Barrowclough, & Wearden, 2009; Barnow et al., 2010). Varese et al. (2012) indicate that childhood trauma is twice as likely in psychosis populations compared to control populations, and Kilcommons & Morison, (2005) showed that 94% of individuals with psychosis reported at least one traumatic event and 53% have a comorbid

PTSD diagnosis. Causational links, including neurocognitive alterations, have been made between childhood trauma and the later development of psychosis (Dvir, Denietolis & Frazier, 2013; Kennedy, Tripodi, & Pettus-Davis, 2013; Varese et al., 2012) including a dose-response relationship (e.g. Bentall et al., 2014; Matheson, Shepherd, Pinchbeck, Laurens, & Carr, 2013).

Adverse events in childhood are shown to be associated with increased psychotic-like experiences (Kelleher et al., 2008, 2013) and clinical threshold psychosis (Thompson et al., 2014; Varese et al., 2012) which are more persistent and clinically relevant (Trotta, Murray & Fisher, 2015) and are predictive of poorer long-term functioning (Cotter, Kaess, & Yung, 2015; Yung et al., 2015). Reduced age of first episode psychosis and increased frequency of hospitalisations are also shown for those with childhood trauma histories when compared to those without (Rosenberg, Lu, Mueser, Jankowski, & Cournos 2007; Schenkel, Spaulding, DiLillo & Silverstein, 2005).

1.5. Borderline Personality Disorder

BPD is characterised by pervasive interpersonal difficulties, emotion regulation problems, mood instability, impulsivity and instability in self-image (Lieb, Zanarini, Schmahl, Linehan, & Bohus, 2004; Stanley & New, 2017). BPD symptoms are reported in 1-3% of the general population (Lenzenweger, Lane, Loranger, & Kessler, 2007; Torgersen, Kringlen, & Cramer, 2001; Trull, Jahng, Tomko, Wood, & Sher, 2010) and between 10-20% of psychiatric patients (Korzekwa, Dell, Links, Thabane, & Webb, 2008; Swartz, Blazer, George, & Winfield, 1990; Zimmerman, Rothschild, & Chelminski, 2005). Secondary axis II personality disorders are frequently prevalent (14-51%) with BPD diagnosis (Grant et al., 2008; McGlashan et al., 2000; Zanarini et al., 1998; Zanarini et al.,

2007) but BPD has been found to be the most representative of core pathology within the wider classification of personality disorders (see Sharp et al. (2015) for BPD general and specific factors).

Individuals diagnosed with BPD are frequent and costly users of healthcare presenting with high rates of self-injury and suicidality (Tomko, Trull, Wood, & Sher, 2014; Zanarini, Frankenburg, Khera, & Bleichmar, 2001). BPD diagnoses are associated with increased frequency of consultation from health professionals (Coid et al., 2009) and an average of 3.8 mental-health hospitalisations within their lifetime (Korzekwa et al., 2008). Mortality rates from suicide are 50 times greater than control populations with around 10% of patients with a BPD diagnosis completing suicide (American Psychiatric Association, 2001, 2006; Blum et al., 2008; Oldham, 2013; Skodol et al., 2005). Despite receiving psychosocial and pharmacological interventions, there are global and pervasive impairments in wellbeing, social adjustment, functioning, and employment (Korzekwa et al., 2008; Lieb et al., 2004; Skodol et al., 2005), which are shown to be greater than many other psychiatric disorders (see Ansell, Sanislow, McGlashan, & Grilo, 2007). There are also costs to wider society associated with criminal justice system use and reduced economic productivity (Van Asselt, Dirksen, Arntz, & Severens, 2007). Consequently, given the pervasive impacts, more research is required to enhance our understanding and management of this disabling condition (Lieb et al., 2004).

1.6. Childhood Trauma and Borderline Personality Disorder

Linehan's (1993) biosocial model of BPD and Barnow et al.'s (2010) heuristic model highlight the role trauma has in BPD. Childhood trauma is common in BPD with the majority of patients reporting childhood trauma experiences including neglect (Afifi et al.,

2011). Research indicates over 90% of BPD patients report a childhood abuse history or childhood neglect and 56% present with comorbid PTSD (Zanarini, Williams, Lewis, & Reich, 1997; Zanarini et al., 1998). Furthermore, when compared to control populations, individuals diagnosed with BPD have reported over double the rate of experiencing a severe traumatic event (Bandelow et al., 2005). A dose-response relationship with causal mechanisms have been suggested in multifactorial etiologic models (e.g. Ball & Links, 2009; Silk, Lee, Hill, & Lohr, 1995; Zanarini et al., 2002).

1.7. Phenomenological Overlap Between Psychosis & Borderline Personality Disorder

BPD and psychosis diagnoses present with some overlap in their experiences and perceptions. First, as outlined previously, they both present with high rates of childhood traumas. Both presentations have been shown to have phenomenological overlap with the diagnostic criteria for PTSD or complex PTSD (e.g. Pepper & Agius, 2009 and Ford & Courtois, 2014). The comorbid influence of PTSD symptomatology in psychosis and BPD diagnoses is often overlooked or under-reported (Ford & Courtois, 2009; Lommen & Restifo, 2009). Core domains of overlap include affect regulation, impulse control, reality testing, interpersonal relationships and self-integration difficulties. Specifically, linked to impulse control, there is commonality in presented substance abuse and self-destructive behaviours. In terms of reality testing, both present with paranoid ideation and dissociative mechanisms. Within interpersonal relationships, both have been shown to have insecure attachment styles. Finally, regarding self-integration, both present with identity diffusion.

BPD and schizophrenia diagnoses frequently coexist (Slotema, Blom, Niemantsverdriet, Deen & Sommer, 2018) with childhood trauma and parental care

experiences found to be linked to positive psychotic symptomatology across both population groups (Catalan et al., 2017).

1.8. Theoretical Models

Whilst literature demonstrates that childhood trauma is a key variable, there are still conceptual issues with the precise link to psychotic (Morgan & Fisher, 2007) and BPD symptomatologies (Hecht, Cicchetti, Rogosch, & Crick, 2014). Several theoretical models exist which attempt to aid our understanding by conceptualising why some individuals develop longer-term difficulties following traumatic experiences and why there are individual differences in symptom presentation, duration and impact.

Within stress-vulnerability and distress-protection models (e.g Lazarus & Folkman, 1987; Zubin & Spring, 1977; Ritsner, 2007), multiple risk and protective factors combine to influence vulnerability to mental health difficulties. Interacting aspects from psychological, biological, sociodemographic and social variables are likely to interact and contribute to experiencing difficulties, functional disability and reducing wellbeing. Within models for psychosis and BPD, traumatic events, attachment styles and emotion regulation difficulties are incorporated as influential components (e.g. Barnow et al., 2010; Hardy, 2017; Read, Fosse, Moskowitz, Connolly, 2014).

1.9. Attachment

Early relationships with caregivers aid the child's development of representations of the self (identity formation), others, and self in relation to others but also provide a model for relating with others in adulthood (Bowlby, 1973; 1980). These representations can be positive or negative. Internal 'working models' are derived from this and are influential to

behavioural, cognitive and affective processes (Mikulincer, Shaver & Pereg, 2003). Negative working models result in more insecure attachment styles, whereas positive working models result in more secure attachment styles (Bowlby 1969). Early relationships provide the foundations for an individual's ability to self-soothe and manage adverse events (Mikulincer et al., 2003). Insecure attachment styles increase someone's susceptibility to distress and alter help-seeking behaviours which reduce emotion regulation capacities. Given that their caregiver is perceived as inconsistently or totally emotionally and physically unavailable in insecure attachments, individuals will retain a sense of security in interpersonal relationships through either adopting hyperactivating (such as intensification of distress levels) or deactivating strategies (such as restricting any proximity seeking urges through avoiding forming adult attachments) (Mikulincer & Shaver, 2004).

In adult attachment, a two-dimensional model (diagrammatic representation in Figure 2.) of attachment anxiety and attachment avoidance is favourable to the four-attachment model of secure, preoccupied, dismissing and fearful (Batholomew, 1990; Batholomew, Cobb & Poole, 1997; Berry, Barrowclough, & Wearden, 2007; Collins & Feeney, 2004; Feeney & Collins, 2003; Fossati et al., 2003; Mancini & Bonanno, 2009). Anxious attachment is associated with fears of abandonment or rejection, a negative representation of the self, worries about interpersonal relationships, and a strong need to proximity seek and obtain approval from others (Wickham, Sitko & Bentall, 2015). Avoidant attachment is associated with fears of dependence combined with compulsive self-reliance, a negative representation of others, social withdrawal and minimised emotional connection with others (Berry, Wearden, Barrowclough, & Liversidge, 2006; Mikulincer et al., 2003).

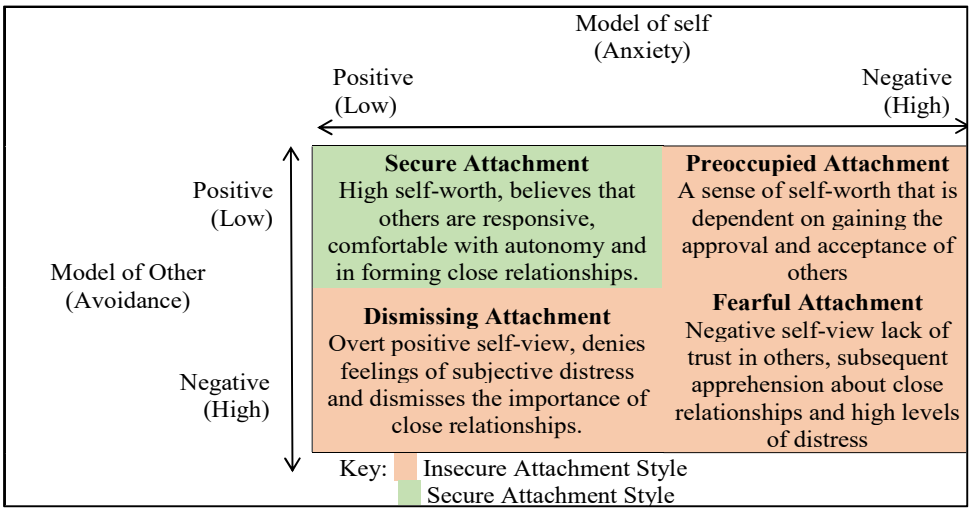

Figure 2. Diagrammatic representation of Bartholomew's Attachment model (Bartholomew, 1990; adapted version reproduced from Berry et al., 2007).

Attachment is found to influence mental health pathology and associated difficulties in relating with others. Secure attachments are deemed to be a protective factor (Moretti & Peled, 2004). In insecure attachments, where the primary caregiver did not provide a model for a secure base, and when trauma occurs, there is not only an intensified emotion reaction to the event, but also a reduced ability to process this distress (Gumley, Taylor, Schwannauer, & MacBeth, 2014). This intensifies the negative consequences of trauma, creating views destabilised by fear, violence, hostility, abandonment and less effective ways to deal with distress which all contribute towards maladaptive coping mechanisms (often causing further distress) being developed (Mikulincer, Shaver, & Solomon, 2015). Subsequently the decreasing ability to cope and tolerate distress increases the likelihood of mental health difficulties (Bakermans-Kranenburg & van Ijzendoorn, 2009; Gumley et al., 2014; Fraley, 2002). Unsurprisingly, literature demonstrates that increased anxious and avoidant attachments are associated with, increased psychopathology (e.g. Cantazaro & Wei, 2010; Ein-Dor, Doron, Soloman, Mikulincer & Shaver, 2010), and are found in those

with histories of childhood traumas (e.g. Bakermans-Kranenburg & van IJzendoorn, 2009; Espeleta, Palasciano-Barton, & Messman-Moore, 2016; Friedrich, 2002; Oshri, Sutton, Clay-Warner, & Miller, 2015).

1.10. Attachment in Borderline Personality Disorder and Psychosis

Attachment and interpersonal relationships are important to consider in BPD (Fonagy, Target, & Gergely, 2000; Levy, 2005; Liotti, Pasquini, & Cirrincione, 2000) and psychosis populations (Carr, Hardy, & Fornells-Ambrojo, 2017; Harder, 2014). Increased attachments avoidance and anxiety are associated with poorer outcomes including increased psychotic and BPD symptom severity (Dorahy et al., 2015; Gumley et al., 2014; Korver-Nieberg, Berry, Meijer, de Haan, & Ponizovsky, 2015). Specifically, in psychosis populations, a meta-analysis has demonstrated fearful attachment being most prevent with a pooled estimate 38% (see Carr et al., 2017).

Research indicates that attachment has an influential impact on trauma's association with psychotic (Pearce et al., 2017; Read & Gumley, 2008; Sitko, Bentall, Shevlin, & Sellwood, 2014) and BPD symptomatology (Minzenberg et al., 2006). Childhood trauma has been found to be associated with increased attachment insecurity in psychosis (Tait, Birchwood & Trower, 2004; Berry et al., 2009). In BPD populations, attachment anxiety and attachment avoidance are found to be higher in those with childhood trauma histories (Minzenberg et al., 2006).

1.12. Emotion Regulation

Emotion regulation is a multilevel process which relates to a person's ability in the perception of and appropriate response to an emotionally provoking stimulus (Gross, 2014).

It involves the integration of behavioural and biological aspects of emotional self-control (Thompson, Lewis & Calkins, 2008). Linking to prior stress and coping theories (e.g. Folkman & Lazarus, 1986), different emotion regulation strategies can be either adaptive or maladaptive depending on the given situation (Gross, 2014). Emotion regulation mechanisms include reappraisal, problem-solving, acceptance, positive refocusing, distraction, suppression, avoidance and forgetting (Aldao, Nolen-Hoeksema, & Schweizer 2010; Braet et al., 2014).

Difficulties in emotion regulation have been shown to influence mental health (e.g. Gross, 2002; John & Gross, 2004; Taylor & Stanton, 2007) including resilience (Tugade & Fredrickson, 2007), long-term health outcomes (Moffitt et al. 2011), wellbeing (see Nyklíček, Vingerhoets, & Zeelenberg, 2010) and social relationships (Gross & John, 2003). It is found to be an important comorbid factor across a range of mental health difficulties (see Aldao et al., 2010; Krueger & Markon, 2006).

Trauma contributes towards maladaptive emotion regulation, including an altered sense of emotive stimuli (Pollak & Tolley-Schell, 2003) and emotion reactivity but also reduced ability to recognise, discriminate, express and understand different emotions (Pechtel & Pizzagalli, 2011; Stirling & Amaya-Jackson, 2008). When traumas occur in childhood, areas of the brain involved in self-regulation, such as the pre-frontal cortex, have been shown to be affected (e.g. Blair and Raver, 2012).

Attachment has an intrinsic relationship to emotion regulation. Within secure attachment systems, the child-caregiver relationship provides a secure base. When the caregiver demonstrates accurate mentalisation and modelling of effective modulation of emotional responses, this scaffolds the development of an accurate internalisation of

effective emotion regulation mechanisms. Consequently, this aids an individual's ability to effectively manage distress through self-regulation techniques. Conversely, those with insecure attachments experience inconsistent caregiving which can be neglectful or rejecting. Within insecure attachments, the caregiver lacks caregiver-child attunement which leads to an individual having a reduced awareness to their own bodily experiences and emotional states. When an insecurely attached individual faces distress, the more primitive and basic coping mechanisms such as avoidance and dissociation are deployed as self-regulation mechanisms to manage this (Kinniburgh, Blaustein, Spinazzola & Van der Kolk, 2017).

1.13. Emotion Regulation in Psychosis and Borderline Personality Disorder

Difficulties in emotion regulation are common within individuals diagnosed with psychosis (e.g. Perry, Henry & Grisham, 2011) and BPD (e.g. Glenn & Klonsky, 2009) and are linked to severity of symptomatology (e.g. Poole, Tobias, & Vinogradov, 2000; Salsman & Linehan, 2012; van Rossum, Lieb, Wittchen, & van Os, 2011).

Emotion regulation is a key factor when considering the perceived emotional and physiological impact of psychotic symptomatology (Clamor et al., 2015). Although some patterns, such as catastrophising and rumination have been identified within psychosis populations (Rowland et al., 2013), the specific regulatory strategies and difficulties in emotion management still need to be fully explored (Lincoln Haurtmann, Köther, 2014; Perry et al., 2011).

A literature review by Domes, Schulze and Herpertz (2009) found that emotional facial recognition is altered within BPD populations and there is an overall increased sensitivity to negative emotions. Furthermore, individuals diagnosed with BPD are found to

have reduced emotional awareness (Chapman, Leung & Lynch, 2008; Leible & Snell, 2004) and difficulty in distinguishing between emotions (Suvak et al., 2011).

1.14. Quality of Life

Quality of life (QoL) outcomes are an important and growing area of consideration within mental health research in terms of their negative impact on an individual (Ruggeri et al., 2005; Karow, Wittmann, Schöttle, Schäfer, & Lambert, 2014). QoL outcomes within BPD (e.g. Cramer, Torgersen & Kringlen, 2006) and psychosis (e.g. Eack & Newhill, 2007) populations are known to be poor. This is especially found for those with a schizophrenia diagnosis (Caron, Lecomte, Stip, & Renaud, 2005; Karow et al., 2014) but the contributing factors to this remain poorly understood (Narvaez, Twamley, McKibbin, Heaton & Patterson, 2008; Tolman & Kurtz, 2012) and require further research (Chan and Yu Iu, 2004). Specific models exist for explaining QoL variation in schizophrenia (e.g. Caron et al., 2005; Ritsner, 2007). Within these models, coping is an incorporated factor.

1.15. Thesis Rationale and Aims

The presented thesis portfolio includes a systematic review and empirical paper targeting complex mental health difficulties.

QoL is a key area of research when considering the impact of complex mental health difficulties. Coping mechanisms and QoL are of growing interest within schizophrenia research and practice. To date, there has not been a systematic evaluation of the precise influence that coping mechanisms have on QoL within individuals diagnosed with schizophrenia. Consequently, Chapter two will explore this through systematically reviewing the literature.

As demonstrated by this chapter, childhood trauma, emotion regulation and attachment are important influential vulnerability factors to consider for the development of mental health difficulties, particularly BPD and psychosis (Bakermans-Kranenburg & van Ijzendoorn, 2009; Gumley, et al., 2014). Significant foundations for later mental health difficulties appear to result from childhood trauma experiences. Attachment and emotion regulation then seem to influence the potential consequential development of BPD and psychotic symptomatology, but the precise relevance and mechanisms warrant further investigation. By comparing BPD, psychosis and non-clinical (control) populations, the empirical study presented in Chapter Four aims to add clarity to the relative roles of these variables. By transdiagnostically investigating the interacting pathways of these variables, the empirical study aims to provide a framework of the potential developmentally originated interpersonal and intrapersonal factors which contribute to BPD and psychosis symptomatology. This will also incorporate the relative impact of childhood trauma.

The presented thesis aims to provide a better understanding of:

1. The role coping has on QoL in schizophrenia.

2. How trauma type and severity, attachment (anxiety and avoidance) and emotion regulation differ between individuals diagnosed with psychosis and BPD, and how they compare to a control group.

3. Whether trauma type and severity are related to attachment, emotion regulation, BPD and psychosis symptomatology irrespective of diagnostic group.

4) Whether attachment and emotion regulation mediate the relationship between childhood trauma and symptomatology, irrespective of diagnostic group.

This will aid our understanding of why individual differences exist in childhood trauma reactions, and what contributes towards BPD and psychosis symptomatology presentations. A summary of findings, general discussion and critical appraisal (Chapter Six) will highlight implications for clinical practice within this field.

Chapter 2. Systematic Review

Prepared for submission to: Schizophrenia Research and Development.

Journal guidelines and the quality assessment tool are in Appendix A.

Review Article

A Systematic Review of Coping Mechanisms and Quality of Life in Schizophrenia.

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2.1. Abstract

Coping mechanisms and Quality of Life (QoL) are key factors of growing interest within schizophrenia research and practice. The aim of this review is to investigate the relationship between coping mechanisms and QoL among community-dwelling individuals with a schizophrenia diagnosis. Systematic searches were completed in six databases. Nine of the initial 2795 results met inclusion criteria. All studies (n = 9) reported cross-sectional data. Synthesis demonstrated that there is evidence for a small-medium effect size of problem-focused coping positively correlating with QoL. Conclusions about emotion-focused coping on QoL in schizophrenia requires further investigation to be fully ascertained.

Keywords: schizophrenia, psychosis, coping mechanisms and quality of life.

2.2. Introduction

Coping refers to the multidimensional cognitive and behavioural strategies individuals deploy (consciously or unconsciously) to manage difficult, demanding, stress-inducing, or upsetting internal or external situations [1, 2]. In schizophrenia, coping mechanisms are especially important given their links to symptomatology and associated reduced ability to manage life stressors successfully [3, 4].

Folkman and Lazarus' [5, 6] categorisation of coping strategies comprises of problem- and emotion-focused coping. Problem-focused coping or task-orientated coping involves facing the situation that is eliciting distress to reduce the effect elicited (e.g. though initiating active problem-solving and creating a time-management plan) [7]. Directive coping, planning and active coping are considered problem-focused coping strategies. Emotion-focused coping mechanisms involve focusing on the emotions elicited in the stress-eliciting situation such as through restructuring one's thoughts or attitudes to change the emotional reaction triggered. Reappraising, considering, acceptance, avoidance, denial, disengagement, seeking support socially or through religion, acting and self-soothing coping mechanisms can be conceptualised within emotion-focused coping [8]. Avoidance-focused coping incorporates mechanisms that avoid the stress-inducing situation and includes distraction (e.g. engaging with an alternative task), denial, and social avoidance (e.g. utilising social diversion and seeking emotional support). Avoidance-focused coping is often conceptualised as an emotion-focused coping mechanism. The relative benefit of adopting a certain coping mechanism is situation-dependent [9].

Within the Stress Vulnerability Model (SVM) of schizophrenia [10], in similar conceptualisations such as the Distress Protection Vulnerability model [11] and in other theoretical models such as the model of post-traumatic stress in psychosis by Hardy [12], coping mechanisms are an influential component. Within these frameworks, coping is a resource which provides a method to deal with the stressor and therefore can act as a protective factor but also as an influential factor in the development and maintenance of psychotic disorders [13, 14]. The extent to which an individual can employ an effective coping mechanism (i.e. one that reduces distress levels) in response to a stressor is shown to be an important factor in recovery outcomes within mental health (see Taylor and Stanton [15]). Coping is a key component within psychosocial frameworks for preventative and effective interventions such as improving stress management skills and fostering the development and use of more adaptive coping mechanisms which effectively reduce distress levels [16].

When compared to healthy controls, patients diagnosed with schizophrenia are shown to frequently use alternative, and less effective coping strategies [17-19], including greater reliance on avoidant- and emotion-focused strategies rather than adopting more problem-focused strategies [14, 20, 21]. It has also been suggested that patients with schizophrenia have less flexibility over their choice of which coping strategy they are able to operationalise [22].

Within schizophrenia research, there has been a tendency to assess outcome based on improvements in symptoms. Quality of Life (QoL) and subjective wellbeing are increasingly recognised outcomes within mental health [23-25]. QoL can be considered a multidimensional construct which encompasses physical, mental and social wellbeing and

can incorporate subjective (self-report) or objective (expert-assessed) evaluations [26]. Increasingly, QoL is receiving more attention in treatment outcomes and research in schizophrenia [25, 27]. However, the factors contributing towards QoL remain poorly understood [28, 29] and require further assessment [30].

Whilst coping strategies have been suggested to be influential on QoL, this is dependent on the situation and given coping mechanism and can include reductions or improvements in QoL [31, 32]. More attention is needed within this area to help enhance our understanding of the role of coping mechanisms in QoL and improve the appropriateness and impact of interventions. To date there is no consensus and no systematic review specifically addressing which coping strategies are most influential to QoL.

The aim of this review is to systematically review the literature and answer the following question: is there a relationship between coping and QoL in community dwelling individuals with a diagnosis of schizophrenia? Conclusions inferred from the current literature to date and limitations and implications for future research will be discussed.

2.3 Materials and Method

To identify studies on coping, QoL and Schizophrenia, search terms included "schizophrenia," "psychosis*," "psychotic," "cope*," "coping*," "quality of life," "QoL," "wellbeing" and "well-being" to ensure key words and related search terms were screened for.

A systematic search of the literature was completed using the databases: PsycINFO; CINAHL; MEDLINE; PsychArticles; PubMed and Web of Science. Searches were

completed in October 2017 without date restriction. Endnote bibliographic computer software was used to aid duplicate identification. Reference lists of retrieved articles were also inspected and a google scholar web search was conducted to identify potential further studies. No further articles were discovered. In total 2795 articles were identified. Deduplication resulted in 2075 articles (720 duplicates). Titles and abstracts were initially screened for eligibility by the first author. Most studies did not incorporate samples of individuals diagnosed with schizophrenia and were therefore excluded. Full texts were subsequently assessed by the first author for eligibility.

Eligibility criteria. The choice of inclusion / exclusion criteria followed methodology outlined within a review by de Pinho, Pereira, Chaves and Batista [33]. The exclusion of non-schizophrenia and inpatient samples was adopted because of the documented methodological difficulties of heterogenous sampling, the diversity of symptomatology and differing influences on QoL [34-36] and coping [16] in inpatient (aka acute / exacerbation phases) and outpatient (aka stable or chronic phases) settings within schizophrenia research.

Articles were included in the literature review if they met the following criteria: (1) published quantitative study based on human participants and written in the English language; (2) the study included a community-based sample of patients diagnosed with schizophrenia disorders (including paranoid, disorganised, catatonic, undifferentiated, and residual sub-types) or a mixed sample with greater than 75% diagnosis of schizophrenia or where the outcome for schizophrenia is provided separately from another diagnosis; (3) the study incorporated a validated multidimensional measure specifically assessing coping and a validated assessment of total QoL or QoL across several domains.

Articles focusing on at risk mental states or the prodromal stages of psychosis and those utilising a schizoaffective sample were excluded, given that they can be considered as differential pathology from schizophrenia. Due to diagnostic shifts occurring within diagnoses of First Episode Psychosis (FEP) [37], unless a diagnosis of schizophrenia was documented, FEP diagnoses were excluded. Inpatient samples were excluded. Intervention-based studies and randomised controlled trials were excluded to increase the external validity of findings [38]. Qualitative studies, book chapters, conference proceeding, reviews, and unpublished works were excluded as they were not in the scope of this review.

Methodological and quality appraisal. Data were systematically extracted with any ambiguity being discussed and resolved with the second author. For all included articles, the first and second author conduced a quality assessment based on applicable questions from the Standard Quality Assessment Criteria for Evaluating Primary Research Papers from a Variety of Fields [39], see Table 1 and Table 2. Scoring possibilities for the 11 items are Yes (2), Partial (1), No (0) and Not Applicable (N/A) (excluded from scoring). The total possible global score for each study was one (total raw score divided by 22). Scoring agreement between the two reviewers was high (97.44%). All scoring disagreements were discussed and resolved. Figure 3 outlines the systematic review process.

TABLE 1: Items used from the Standard Quality Assessment Criteria for Evaluating Primary Research Papers from a Variety of Fields [39].

Criteria	Question	Area Assessed
1	Question / objectives sufficiently described?	Objective
2	Study design evident and appropriate?	Study design
3	Method of subject/ comparison group selection or source of information / input variables described and appropriate?	Recruitment method
4	Subject (and comparison group, if applicable) characteristics sufficiently described?	Sample characteristics
5	Outcome and (if applicable) exposure measure(s) well defined and robust to measurement / misclassification bias? Means of assessment reported?	Measures
6	Sample size appropriate?	Sample size
7	Analytical methods described / justified as appropriate?	Analysis plan
8	Some estimate of variance is reported in the main results?	Estimate of variance
9	Controlled for confounding?	Confounding variables
10	Results reported in sufficient detail?	Sufficient results
11	Conclusions supported by the results?	Validity of conclusions

TABLE 2: Methodological Appraisal.

Author(s)	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Score
Hofstetter, Lysaker & Mayeda [40]	2	2	1	2	2	2	1	1	1	2	2	0.82
Caron, Lecomte, Stip & Renaud [27]	2	2	1	2	2	1	1	0	2	1	2	0.73
Ritsner and Grinshpoon [41]	2	2	1	2	2	2	2	2	1	1	1	0.82
Brenner, St-Hilaire, Liu, Laplante & King [42]	2	2	2	2	2	1	2	2	2	2	2	0.95
El Sheshtawy [43]	1	2	1	2	2	1	1	1	1	1	1	0.64
Montemagni et al. [44]	2	2	2	2	2	1	1	2	2	2	2	0.91
Moslehi, Atefimanesh & Farid [45]	2	2	2	2	0	2	1	1	0	2	1	0.68
Rudnick [32]; Martins & Rudnick [8]	2	2	2	2	2	1	1	1	0	1	2	0.73
Rudnick and Martins [46]	2	2	2	2	2	1	1	0	0	2	2	0.73

Data extraction. Where possible, data was extracted relating to the: aim; design; setting; sample size and characteristics; coping and QoL outcome measures used; and all results relating to QoL and coping (see Table 3).

TABLE 3: Summary of studies included in the systematic review

Study	Country	Design	Study Aim	Sample characteristics			Measure		Relationship / association between QoL and coping
				N (SZ%)	Age *M*(*SD*)	Male (%)	QoL	Coping	
Hofstetter, Lysaker & Mayeda [40]	USA	Cross-sectional	The relationship between sleep quality, coping & QoL	29(79)	48(7)	93	QLS	WCQ	Positive reappraisal correlated positively with QoL (r = 0.42). No correlation between escape avoidance and QoL.
Caron, Lecomte, Stip & Renaud [27]	Canada	Cross-sectional repeated measures	The predictors of QoL & their 6-month stability	143(80)	41	74	SLDS	CCS*	At baseline and 6-month follow-up, changing the situation, devaluation, avoidance and accommodation significantly positively correlated with QoL (r = 0.21-0.28). Reduction was not significantly correlated with QoL. After accounting for socio-demographic, clinical and stressor variables, coping processes (including appraisal and mechanisms) significantly contributed to the variance in QoL at baseline (*Adjusted* R^2 *incremental* = 0.66) and at 6-month follow up (*Adjusted* R^2 *incremental* = 0.67). No subdivision of coping significantly accounted for variance in QoL other than strategies for changing the situation at 6-months (β = 0.26).
Ritsner and Grinshpoon [41]	Israel	Cross-sectional	The role & contribution of unmet needs on QoL.	95(80)	48.2 (9.1)	77	Q-LES-Q	CISS	Emotion- and task-orientated coping accounted for 11.6% of variance in QoL. Avoidance-orientated coping did not predict general QoL. Coping may act as a moderator between unmet needs and general QoL

Study	Country	Design	Study Aim	Sample characteristics			Measure		Relationship / association between QoL and coping
				N (SZ%)	Age *M*(*SD*)	Male (%)	QoL	Coping	
Brenner, St-Hilaire, Liu, Laplante & King [42]	Canada	Cross-sectional Case Control	The roles & interactions between the physiological stress responses & coping style in relation to QOL.	59 (HC = 29)	30.5 (7.3) SZ	80	SWLS	bCOPE	QoL negatively correlated with problem-orientated coping (r = -0.37). QoL was not correlated with emotion-orientated coping. Problem-orientated coping contributed towards predicting QoL (β = 0.31). Increased frequency of coping strategies positively associated with QOL (for patients with blunted cortisol response). Suggestive that using emotion-oriented coping in those with low stress reactivity predicted greater QOL, while using emotion-oriented coping predicted lower QOL in those with high stress reactivity.
El Sheshtawy [43]	Saudi Arabia	Cross-sectional	Coping patterns used in response to daily stressors & investigate the impact of symptomatol ogy on QoL.	70	NR	57	SQLS	bCOPE	Number of coping strategies used did not correlate with QoL across all QoL domains.
Montemagni et al. [44]	Italy	Cross-sectional	The influence of negative symptoms, insight, & coping on QoL	92	42.9 (11.4)	54	QLS	CISS	Task-orientated (β = 0.31), emotion-orientated (β = 0.30), social diversion (β = 0.48) and distraction (β = 0.04) positively associated with QoL. Social diversion partially mediates the negative symptom interaction with QoL.

Study	Country	Design	Study Aim	Sample characteristics			Measure		Relationship / association between QoL and coping
				N (SZ%)	Age *M*(*SD*)	Male (%)	QoL	Coping	
Moslehi, Atefmanesh & Farid [45]	Iran	Cross-sectional	The relationship between problem-focused coping & QoL.	50	NR	63	WHOQ oL-100	WCQ	Thinking-coping positively correlated with QoL-physical heath (r = 0.42), -mental health (r = 0.28), -social relationships (r = 0.31), -environmental factors (r = 0.35) and total score (r = 0.32). Performance-coping correlated with higher QoL-physical health (r = 0.42), -mental health (r = 0.30) and -environmental factors (r = 0.34) but not related to total QoL or social relationships QoL domain. Problem-focused coping correlated with higher QoL-physical heath (r = 0.47), -mental health (r = 0.33), -social relationships (r = 0.29), -environmental factors (r = 0.41) and total score (r = 0.32). Only thinking-coping effectively predicted QoL (β = 0.32).
Rudnick [32]; Martins & Rudnick [8]	Israel	Cross-sectional	[32] The relationship between symptoms & QoL, & coping's role [8] If Coping predicts symptoms & QoL.	58	42.4(10 .8)	69	W-QLI	[32] WCC L [8] WCQ	[32] Problem and emotion-focused coping did not correlate with QoL. Problem- and emotion-focused coping did not influence the relationship between symptomatology and QoL [8] Considering (r = -0.28), acting (r = -0.31), ignoring (r = 0.33), positive reappraising (r = -0.29) and self-soothing (r = -0.29) coping all negatively correlated with the finances QoL domain of finances. No correlations found between coping and other QoL domains.

Study	Country	Design	Study Aim	Sample characteristics			Measure		Relationship / association between QoL and coping
				N (%SZ)	Age *M*(*SD*)	Male (%)	QoL	Coping	
Rudnick and Martins [46]	Israel	Cross-sectional	Create a coping framework & assess if coping associated with symptoms & QoL.	56	NR	70	W-QLI	WCCL	Activity-coping (r = 0.28) and hope-related-coping (r = 0.31) positively related to QoL psychological-wellbeing. Hope-related coping positively related to QoL activities of daily living (r = 0.30). Guilt and indirect coping negatively related to QoL life satisfaction (r = -0.43), distress from symptoms (r = -0.41), financial (r = 0.38) and social (r = -0.40) domains, in addition to mean QoL (r = -0.45).

Abbreviations: QoL = Quality of Life, NR = Not Reported, SZ = Schizophrenia sample, HC = Healthy Controls
QoL Measures: QLS = Quality of Life Scale (Heinrich), SLDS = Satisfaction with Life Domains Scale, Q-LES-Q = Quality of Life Enjoyment and Satisfaction Questionnaire, SWLS = Satisfaction with Life Scale, SQLS = Self Report Quality of Life for Schizophrenia, WHOQoL-100 = World Health Organization Quality of Life 100, and W-QLI = Wisconsin Quality of Life Index.
Coping mechanism measures: WCQ = Ways of Coping Questionnaire, WCCL = Ways of Coping Checklist, CCS* = Cybernetic Coping Scale (abbreviated from), CISS = Coping Inventory of Stressful Situations, and bCope = Brief Coping Inventory.

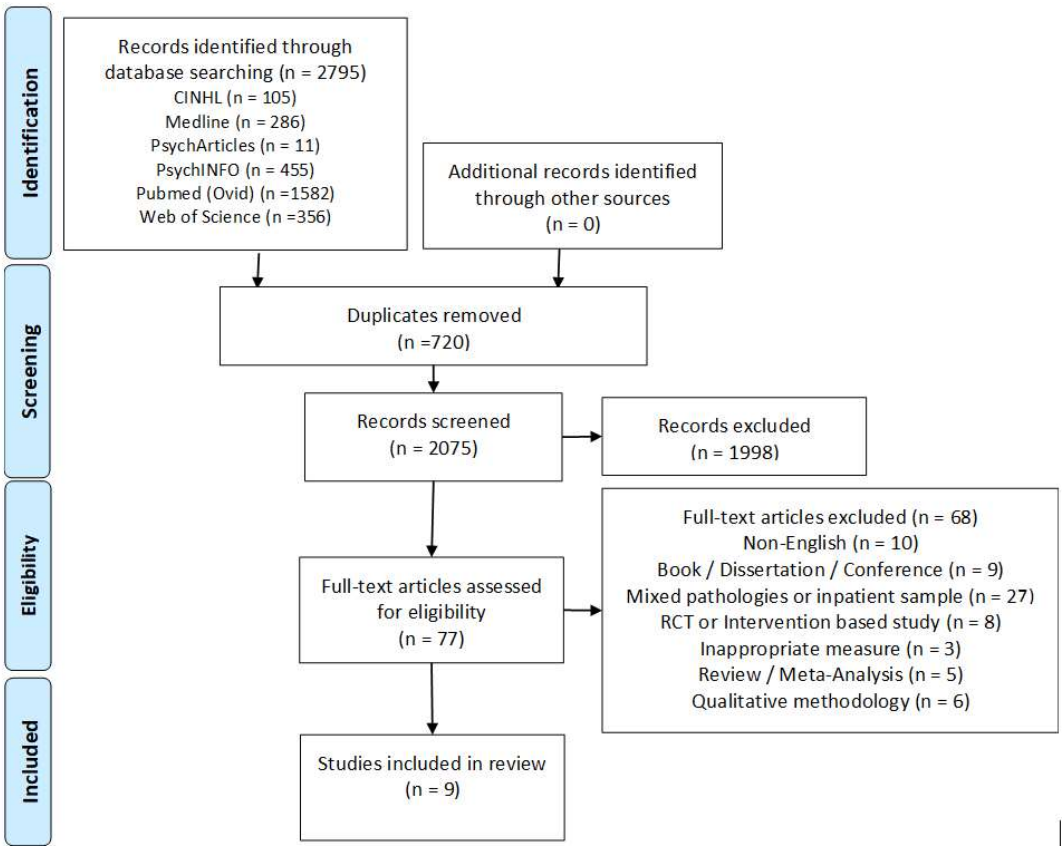

FIGURE 3: Flow diagram of systematic research (adapted from Moher et al. [47]).

2.4. Results

A total of nine worldwide studies, published between 2001 and 2015, with eight independent samples, were identified for inclusion within this review. Sample sizes of included data within this review ranged from 29 to 143, with a total sample size of 654. All studies used cross-sectional methodologies, except from one study, which used a repeated measures design. Across all studies, the sampling favoured males ranging from 54-93% which is expected given the higher incidence rate of schizophrenia in men [48]. Six samples were diagnostically homogeneous, with the remaining three incorporating a sample of around 80% with a schizophrenia diagnosis and the other comprising of schizoaffective disorder.

Instruments used to measure coping.

The Ways of Coping Questionnaire. Four studies, including one non-independent sample, used either the 66-item Ways of Coping Questionnaire (WCQ) [6, 49] or the 68-item Ways of Coping Checklist (WCCL) [5]. The WCCL asks respondents to answer true or false to each item whereas the WCQ adopts a four-point Likert scale ranging from "does not apply" and/or "not used" through to "used a great deal". The original scoring derived eight subscales (planful problem-solving, positive reappraisal, seeking social support, distancing, self-controlling, escape-avoidance, accepting responsibility, and confrontive coping) from 50 of the 66-items [50]. Alternative subscale systems are also available [51, 52] such as the eight-item structure (Confrontive Coping, Distancing, Self-Control, Seeking Social Support, Accepting Responsibility, Escape Avoidance, Planful Problem Solving, and Positive Reappraisal) [53]. Both problem- (e.g. planful problem solving) and emotion-focused (e.g. escape avoidance and self-control) coping are assessed. In some conceptualisations, there is an additional 'mixed problem and emotion-focused coping' scale (comprising social support) [6] or an 'avoidant-focused coping' scale (comprising ignoring and resigning). The WCQ has shown adequate psychometric properties (see Lundqvist & Ahlstom, [54]) including acceptable internal consistency [6]. The WCCL has also been shown to have respectable reliability coefficients (see Vitaliano et al., **[55]).**

The brief COPE. Two studies used the 28-item brief COPE [56] which assesses coping across 14 scales. This validated measure is derived from the 60-item COPE [57] and asks patients to rate how regularly they utilise the given response when under stress using a 4-point Likert scale ranging from "I haven't been doing this" to "I've been doing this a lot." Cognitive and behavioural coping strategies are included. Three subscales create the

problem-orientated score and 11 subscales create the emotion-orientated score. Both subscales are found to have adequate internal consistency (Brenner, [42]).

The Coping Inventory for Stressful Situations (CISS). Two studies adopted the 48-item CISS [1] to assess coping across Task-, Emotion-, and Avoidance-orientated subscales. Like the brief COPE, the CISS asks respondents to rate the frequency of using each item when stressed but on a 5-point Likert scale ranging from "not at all" to "very much". Within Montemagni and colleagues' [44] study, the avoidance subscale is further split into distraction and social diversion subscales. Internal consistency scores are found to be good and test–retest reliability correlations are high [58]. Adequate discriminant validity, divergent and convergent validity has also been found [59).

The Cybernetic Coping Scale (CCS). The abbreviated version of the CCS [60] was adopted in the Caron, Lecomte, Stip and Renaud [27] study. The CCS differs in its conceptualisation of coping behaviours. Twenty items from the 40-item version make up the abbreviated CCS. Respondents answer each question on a seven-point Likert scale ranging from "not at all" to "use very much." The abbreviated version derives five coping domains: changing the situation, devaluation, accommodation, reduction of symptoms and avoidance. The CCS has been found to have adequate psychometric properties [61] and the French version has been validated [62 as cited in 27, p. 405].

Summary of coping scales. All coping measures were self-report which asked participants to respond using Likert scales (ranging from four to seven points) to a set of questions (ranging from 40-68). Problem-focused coping was assessed within three scales (WCQ, WCCL, and brief COPE), emotion-focused coping was assessed within four scales (WCQ, WCCL, brief COPE and CISS). The CISS measured additional constructs of task-

and avoidance-orientated coping. The CSS adopted a different conceptualisation of coping to other scales, although included avoidance within its coping domains.

Instruments used to measure Quality of Life. Seven validated QoL measures were used by the included studies. Only the Quality of Life Scale (QLS) [63], which the Hofstetter, Lysaker and Mayeda [40] and the Montemagni et al. [44] studies used, involved an expert-assessed QoL assessment. This 21-item scale assesses QoL across four subscales ('Intrapsychic Foundations'; 'Occupational Functions', 'Commonplace Objects'; and 'Activities and Interpersonal Relationships'). The assessment is through a 30-45-minute semi-structured interview and review of clinical notes by a clinically trained assessor. Acceptable psychometric criteria are reported [64] including validity measures [65, 66] and good inter-rater reliability [67, 68]. It has been said to be the most extensively employed measure used in schizophrenia research [69]. However, the QLS is shown to conceptually overlap with negative symptomatology (particularly the 'Intrapsychic foundations' subscale) and is said to be more related to everyday functioning rather than wider subjective QoL literature which focuses more on life satisfaction [70].

The remaining studies used the following six different self-report (subjective) assessments of QoL. The 100-item World Health Organisation Quality of Life (WHOQoL-100; World Health Organisation [71]) assesses wellbeing and is found to have good psychometric properties [72]. This scale was used by the Moslehi, Atefimanesh & Farid [45] study and is found to have acceptable content validity, internal consistency and reliability [**73, 74]** .This scale provides a total QoL and overall health QoL score, in addition to four subscales (physical health, mental health social relationships and environmental). The Wisconsin Quality of Life Index (W-QLI) [75] was used by three

studies [8, 32, 46]. It gives a global QoL score in addition to eight QoL domains (life satisfaction, occupational activities, psychological wellbeing, non-distress from symptoms, physical health, social relations, economics and activities of daily living). The Satisfaction with Life Scale (SWLS) [76] was used by Brenner, St-Hilaire, Liu, Laplante and King [42]. This scale derives a global rating on overall life satisfaction with lower scores indicating greater life dissatisfaction. Reliability and validity is found to be favourable [77-79].

The Self-Report Quality of Life for Schizophrenia measure (SQLS) [80] assessed QoL in El Sheshtawy [43] study. This 30-item measure comprises three subscales ('psychosocial', 'motivational' and 'symptoms') and is demonstrated to have good psychometrics including good inter-rater reliability [80] with short retest intervals reported [43]. It is considered to give a symptom-related QoL scale rather than a health-related QoL measure [81]. The Quality of Life Enjoyment and Life Satisfaction Questionnaire (Q-LES-Q) [82] was used by Ritsner and Grinshpoon [41]. It provides a general score along with seven QoL domains (physical health, subjective feelings, leisure time activities, social relationships, general activities, life satisfaction and satisfaction with medicine). Internal consistency is found to be adequate [41] and it has been demonstrated to be a reliable and valid clinical assessment of QoL (see [83]).

Finally, the 20-domain French version [84] of the 15-item adapted [85] Satisfaction with life Domains Scale (SLDS) [72] was used by Caron and colleagues' [27] study. Clothing, daily activities food, health, economic situation, hobbies recreational activities, house/apartment, neighbourhood, local services and facilities, how they got on with other people, family, friends, people they live with, love life, self-confidence, freedom, life in

general, and responsibility domains are assessed and a total QoL score is obtained. The French version of the SLDS has been shown to have adequate psychometrics (see [87]).

Summary of quality of life measures. The QLS was the only measure adopting expert-assessed QoL; the remaining six scales utilised self-report measures. The majority of QoL scales provide subscales / domains (ranging from three to 15) in addition to a global QoL score. The SWLS and Q-LES-Q include measures of life-satisfaction. The WHOQoL-100 assesses wellbeing in addition to health-related QoL whereas the SQLS is found to be symptom-related rather than health-related QoL. Six measures included a social relationship component (QLS, WHOQoL-100, W-QLI, SQLS, Q-LES-Q and SLDS), four included a health component (WHOQoL-100, W-QLI, Q-LES-Q and SLDS) and three incorporated a measure of mental health (WHOQoL-100, W-QLI and SQLS).

Description of studies. The Hofstetter and colleagues [40] study assessed individual's relative preference for two subscales (escape avoidance and positive reappraisal) of the WCQ. Coping and QoL were assessed along with sleep patterns, sleep quality and symptomatology. The sample was relatively small (n = 29), with most patients in their 40s. Therefore, the authors question the generalisability of their findings to other populations. Given some individuals were included with a schizoaffective disorder (n = 6), some results are segregated based on diagnosis, but unfortunately not those relevant to this review. The authors use a total QoL score though summation of the subscales and the sample generated a mean score of 51,73(±16.6). Mean score on escape-avoidance was 0.138(±0.062) and positive reappraisal was 0.125(±0.079). They found a significant positive correlation between positive reappraisal and QoL ($r = 0.42$, $p < 0.05$) but no significant correlation between (emotion-orientated) escape avoidance and QoL. Whilst this study examined the

predictive ability of sleep quality on QoL, they did not report the predictive ability of coping mechanisms. The authors recognise that their sample size is insufficient to ascertain correlations between sleep quality and QoL subscales but do not allude to this impacting on the reported non-significant correlation between escape avoidance and QoL. Without reported data analysis plans, power calculations or effect sizes, the reliability and validity of the results reported are questionable. However, this study scored highly on the methodological appraisal indicating a high quality of primary research.

The Moslehi and colleagues [45] study aimed to assess the relationship between problem-focused coping and QoL. The 23 items relating to problem-focused strategies within the WCQ assessed performance (Seeing social support and accepting responsibility) and thinking (including planful problem-solving and positive reappraisal) coping subcategories. The sample (n = 50) contained a diagnostically homogeneous (all schizophrenia) sample who were deemed chronic but relatively stable and who were referred to a psychological clinic in Iran. The mean age of the sample was not reported although the inclusion criteria included individuals aged between 18 and 65 years. The sample size was stated to be ascertained by an expert panel. The authors report that 1.99% (SD = 0.61) of people reported that within problem-focused strategies, the thinking subscale was used the most frequently. Whilst descriptive statistics are presented for the QoL measures (the WHOQoL-100), they were not provided for coping. Significant ($p < 0.05$) positive correlations were reported between total problem-focused coping and the total QoL and all QoL subscales. The same was found for the thinking subscale of problem-focused coping. However, for the performance subscale, no significant correlation was found for the total QoL score and for the social relationships QoL subscale. Subsequent

stepwise multiple regression analysis indicated that only the thinking subscale significantly predicted QoL. The authors provide a linear formula for this influence (QoL = 0.325 (thinking subscale) + 2.037). Whilst the authors have stated that their data was normally distributed to allow for parametric testing, they have not reported a sample size calculation for either component of their analysis or details of corrections for multiple correlational testing. Consequently, the non-significant results may not represent 'true' negative findings (type II error) and the several significant correlations reported may be 'false' positives (type I errors) [88]. Relative to the other studies, this study scored low in quality assessment. However, the association between thinking coping and QoL is consistent with the higher rated Hofstetter et al. [40] study which found positive appraisal (which is within the thinking coping construct) to be significantly related to QoL.

The Rudnick [32] study explored the role of coping as a moderator between symptom severity influence on QoL in 58 chronic participants without current diagnostic comorbidities. Problem- and emotion-focused coping domains were assessed in relation to coping with symptoms. No descriptive statistics were provided for the coping or QoL measures. The study reported no correlation between coping and QoL but did not provide the relevant statistical outputs. Multiple linear regressions were performed to assess for interactions from coping. The authors state that neither problem- or emotion-focused coping influenced the impact of positive or negative symptomatology on QoL scores but lacked the relevant statistical outputs relating to this. Although Type I errors are less likely given the authors have stated that their significance level was adjusted for multiple testing, they have not provided details on power calculations for inferring interactions or if their model was bootstrapped. Consequently, as stated by the authors, there may be an increased

chance of Type II errors. The paper scored highly on the quality assessment tool and the authors do address the difficulties of power within their discussion and clearly state the need for results to be replicated to infer any definitive conclusion.

Further analysis of this data set was provided by Martins and Rudnick [8] within a published editorial letter. Within this letter, an alternative six-category construct established from the WCQ [74] was used to re-ascertain if using this coping construct influenced the relationship with QoL. Only for the 'finances' QoL domain, 'considering', 'acting', 'ignoring', 'resigning', 'positive reappraising' and 'self-soothing' coping domains were found to be negatively correlated ($r > -.036$, $p < 0.01$). All other QoL domains were non-significant with no statistical outputs given. These results are suggestive that certain domains of QoL are differentially impacted by coping constructs. However, the additional correlations used here augment the likelihood of Type I errors impacting results [73].

The Rudnick and Martins [46] study, which utilises the data from 56 individuals obtained by Rudnick [32], aimed to generate a new coping framework from the WCC. No descriptive data was provided. Six different coping components were derived from a principal component factor analysis. The six components conceptually link to emotion-focused coping (including 'support and passive', 'wishful thinking', 'hope-related', 'guilt and indirect' coping) and problem-focused coping (comprising 'non-impulsive coping'), in addition to a mixed emotion- and problem-focused category (comprising of 'activity'). Correlations were then completed to ascertain their relation to the same QoL domains found in Rudnick [32]. Activity ($r = .28$, $p < 0.05$) and hope-related coping ($r = .31$, $p < 0.01$) significantly correlated with the psychological wellbeing QoL domain. Hope-related coping also significantly related to the activities of daily living QoL domain ($r = .30$, $p <$

0.05). For the life satisfaction ($r = -.43$, $p < 0.01$), distress from symptoms ($r = -.41$, $p < 0.01$), financial ($r = -.38$, $p < 0.01$) and social QoL domains ($r = -.40$, $p < 0.01$), in addition to mean QoL ($r = -.45$, $p < 0.01$), an inverse relationship with guilt and indirect coping was found. All categories found significant inverse relationships exclusively with the finance QoL domain ($r > -0.36$, $p < 0.01$). The authors summarise these findings to suggest that problem-focused coping may be especially helpful in comparison to emotion-focused coping. The authors highlight the increased chance of Type II errors existing due to the limited sample size available but was found to score highly in the quality assessment evaluation.

Within Brenner and colleagues [42], the brief COPE instructions were modified with participants asked to complete the measure based on a given interpersonal scenario involving winning the lottery. This is the only case-control study included in the review which incorporated a chronic but relatively stable sample. The study aimed to assess the role coping, personality traits and physiological stress reactivity have on QoL in 30 patients diagnosed with schizophrenia and 29 controls. QoL was assessed using the self-report Satisfaction with Life Scale [76]. Unlike the other studies within this review, participants were given a modified Trier Social Stress Test [75], in addition to administration of questionnaire packs. Group comparisons were provided along with means. The mean scores were 22.0(±8.6) for QoL, 29.4(±11.0) for emotion-orientated coping and 13.3(±4.3) for problem-orientated coping. Analysis of data for the schizophrenia group were reported independently from the control group. Problem-orientated coping negatively correlated with QoL ($r = -.37$), whereas no significant correlation was found for emotion-orientated coping. Hierarchical regression analysis found that 58% of variance in QoL was explained

by age, personality (extraversion and intrasession), problem-orientated coping and stress reactivity (cortisol response). After controlling for the contributions for personality and age, problem-orientated coping (β = -.31, p <.05) and stress reactivity were found to explain an additional 18% of the variance in QoL. Emotion-orientated coping was not found to contribute towards predicting QoL. The authors suggest a coping-by-stress interaction for emotional-orientated coping. The more coping strategies used in those with lower cortisol response was associated with increased QoL. The authors highlight several methodological limitations such as small sample sizes and the cross-sectional nature of the study. Given that the correlations were completed for each group, it is likely that some of the analysis may not be sufficiently powered to detect a significant result (Type II error). The stress-inducing experimental component of this study may have influenced the type of client interested in taking part. However, given that the questionnaires relating to QoL and coping were administered to participants prior to the stress task, it is less likely that this would directly influence participants' responses. Additionally, this study scored high on the methodological rating scale.

The El Sheshtawy [43] assessed the number of coping mechanisms used, and which three mechanisms respondents found more useful when dealing with daily stressors. Whilst the mean age is not reported, only participants aged between 18 and 45 years were eligible to participate. The 70 participants were deemed chronically unwell but stable. The average number of coping strategies used was 12.06(± 4.13), with numbers ranging from three to 22. The Self-Report Quality of Life for Schizophrenia measure assessed QoL [80]. Three subscale means were reported, 28.28(8.2) for 'psychosocial', 39.75(7.6) for 'motivational energy' and 20.79(7.6) for the 'symptoms and side-effect' scale and were all indicated to be

impaired. The number of coping strategies were not found to correlate with any of the three QoL subscales. This study was the lowest scoring regarding quality assessment. Therefore, despite containing over double the participants reported in Brenner et al. [42] study (and reducing the likelihood of influence by Type I errors), the lack of information regarding sample size power calculations, means their results could be less reliable.

Montemagni and colleagues [44] assessed the relative contributions of negative symptomatology, insight and coping strategies to QoL (intrapsychic foundations) in a stable schizophrenia sample of 90 individuals who had been stable for greater than six months. Like Hofstetter and colleagues [40], the QLS observer-rated QoL measure is used but only the intrapsychic foundations subscale was incorporated. Descriptive statistics are provided for coping and QoL but no correlational statistics between variables were given. Univariate linear regression analysis indicated that task- ($\beta = .31$, $p < 0.01$), emotion- ($\beta = .30$, $p < 0.01$), social diversion- ($\beta = .48$, $p < 0.01$) and distraction-orientated coping ($\beta = .04$, $p < 0.01$) were positively associated with higher QoL scores. Following backward variable selection, the best-fit model for predicting QoL included negative symptomatology, social diversion coping and insight. This accounted for 45.3% of variance. Mediation analysis indicated that social diversion coping partially mediated the impact of negative symptoms on QoL ($z = -4.29$, $p < 0.01$). The authors summarise that patients experiencing higher levels of negative symptoms use social diversion coping less. It is likely that the larger sample size of 90 would provide more power than some of the other studies within this review and given its higher score within the quality assessment, the results are likely to be more reliable.

Ritsner and Grinshpoon [41] reported cross-sectional data involving 108 individuals from a larger longitudinal study. Descriptive statistics were provided for all QoL scores and coping scales. For coping, the mean for Task-orientated was 55.1(17.2), for emotion-orientated 42.0(13.8) and for avoidance-orientated 48.2(14.3). Most participants were reported to be dissatisfied with their overall QoL. Correlations between coping and QoL were not reported. Coping styles were incorporated alongside unmet needs and perceived social support into the best fit regression model which explained 57% of QoL variance. Emotion-orientated coping negatively influenced QoL ($\beta = -0.25$, partial $R^2 = 4.3$, $p < .001$) whereas task-orientated coping positively influenced QoL ($\beta = .038$, partial $R^2 = 7.3$, $p < .001$). Consequently, an additional 11.6% of variance in QoL was accounted for by two coping styles. The authors suggest that coping styles may act as a moderator to the relationship between unmet needs and QoL. Avoidance-orientated coping was not found to contribute, whereas task- and emotion-orientated did. This study documented the analysis plan and adaptations required including a multiple-comparison test given that several regressions were completed. The sample is not fully homogeneous like two other studies presented in this review. This has implications for the validity and generalisability of findings but given the superior quality assessment score and that the Hofstetter and colleagues [40] study also found that avoidance-coping was not related to QoL, the results can be viewed as more dependable.

Caron and colleagues [27] utilise a cross-sectional repeated measures design with the second time point six-months after the first. The majority (93%) of the 143 participants were French-speaking with all participants being within the community for over one-month. The study aimed to ascertain the predictors of QoL using the self-report Satisfaction

with life Domains Scale (SLDS) [85]. No descriptive statistics were reported for the coping or QoL measure, but correlations and regression statistics were. Changing the situation, devaluation, avoidance and accommodation coping mechanisms were reported to significantly correlate positively with QoL. Reduction of symptoms coping was not found to significantly correlate with QoL and was subsequently excluded from the hierarchical regression analysis. Within the regression analysis, after accounting for socio-demographic, clinical and stressor variables, coping processes were a significant contributor to the variance in QoL. Coping was reported to account for 6.6. % of the 50.1% of variance in QoL accounted for by the given model. At time point 2, other than strategies for changing the situation which positively related to QoL, no other subdivision of coping was found to significantly relate to QoL. Given the repeated measures methodology and that at time point 2 coping accounted for around the same amount of variance (6.7%), the study demonstrates greater reliability in its findings. However, this study scored relatively lower on the quality assessment compared to other studies and potentially warrants more caution regarding any conclusions drawn.

2.5. Conclusions

Within the nine presented studies, the majority had a diagnostically homogeneous sample with a diagnosis of schizophrenia. Correlations between QoL and coping were reported by seven studies. Five studies reported mixed evidence for the relationship between coping and QoL. On examination, this is mainly found when authors assess different constructs of coping mechanisms (i.e. emotion- or problem-orientated coping) or specific coping mechanisms on different constructs of QoL. One study also reported that the number of coping mechanisms did not relate to QoL [43].

For studies specifically addressing total problem-focused coping and QoL, positive relationships were reported by Moslehi [45] and Hofstetter et al. [40] for the 'positive reappraisal' subscale and QoL and negative correlations were found by Brenner and colleagues [42]. The results obtained from the same data-set (within Rudnick [32], Martins and Rudnick [8] and Rudnick and Martins [46]) were varied. These studies mainly reported non-significant relationships between the components of problem-focused coping and QoL. In Caron and colleagues [27], when considering 'changing the situation', 'devaluation' and 'accommodation' as problem-orientated coping, significant positive relationships were found with QoL. For 'reduction of symptoms' subtype of coping, no relationship was found. In summary, more studies reported a relationship between problem-focused coping and QoL than did not find a relationship. Within this, most studies provided evidence derived from correlational analysis and indicated that increased problem-focused coping was related to better QoL with a small to medium effect size. Furthermore, as most of the studies reporting non-significant results were ascertained from the same data-set and of relatively lower quality than some of those reporting significant results, it is likely that the relationship between problem-focused coping and QoL is more reliable.

For emotion-orientated coping and QoL, no correlation was found by Brenner and colleagues [42]. Both positive and negative correlations were reported by Rudnick and Martins [46] when considering different QoL subscales. However, no correlations were found in Rudnick [32]. Hofstetter et al. [40] also found no relationship between 'escape avoidance' and QoL. In Caron and colleagues [27], when considering 'avoidance' as an emotion-orientated coping construct, a significant positive relationship with QoL was found. Given Brenner and colleagues [42] and Hofstetter et al. [40] were higher scoring on

the quality assessment, their non-significant results may be more dependable than the studies reporting significant results. However, it is also possible that certain facets of emotion-orientated coping, such as avoidance, are related to QoL rather than all aspects of emotion-orientated coping.

In terms of associations, regression type analyses were reported by six studies. Moslehi et al. [45] found that only the thinking subscale (problem-focused coping) significantly predicted QoL, whereas the performance subscale did not. Brenner et al. [42] found that problem-orientated coping, but not emotion-orientated coping, was associated with QoL. Montemagni et al. [44] found that all types of coping positively associated with QoL scores. Ritsner and Grinshpoon [41] also found that coping accounted for total variance in QoL with emotion-orientated coping negatively influencing and task-orientated (problem-orientated) coping positively influencing. Avoidance-coping was not found to influence QoL. Caron et al. [27] found that coping processes significantly contribute towards QoL at two different time points. Rudnick [32] found that problem- and emotion-focused coping did not moderate or mediate the influence symptomatology severity had on QoL. Montemagni et al. [44] reported that coping was a partial mediator when considering the impact of negative symptoms. Finally, Ritsner and Grinshpoon [41] suggest that coping styles may moderate the influence of unmet needs on QoL. In summary, most studies evidenced that problem-oriented coping is associated with QoL. However, within higher and lower quality scoring studies, the findings for emotion-orientated coping are more mixed.

Whilst the literature demonstrates mixed findings, it is apparent that there is more evidence for problem-focused than emotion-focused coping mechanisms influencing QoL

in schizophrenia community samples. Problem-focused coping has predominantly been indicated to have a small-medium positive correlation on QoL. More research is required before any recommendations can be made regarding interventions focused on enhancing problem-focused coping to improve QoL within schizophrenia community samples.

2.6. Discussion

Within mixed schizophrenia or psychosis samples, in areas relating to coping, systematic reviews or meta-analyses exist for interventions incorporating distraction techniques [91], coping in relation to life stress and symptoms of illness [14], and safety-seeking behaviours in relation to symptomatology and threat beliefs [92]. There are also several literature reviews [93], systematic reviews and meta-analyses published on the possible contributors to QoL (such as symptomatology) within psychosis, mixed schizophrenic-like, and pure schizophrenia samples (see [33, 94-96]). The presented systematic review adds to the literature by specifically assessing the role of coping on QoL in a schizophrenia sample. However, the conclusions from this review demonstrate that currently, whilst there is more evidence for problem-focused coping being influential to QoL, there is no consensus on the relationship between coping and QoL. Therefore, assumptions should not be made regarding the role of coping in QoL within current practice. There are several important implications from this review.

Whilst coping has been used to help explain QoL differences between schizophrenia and control populations, this paper and other research demonstrates that further studies are required to clarify the relationship between coping and QoL in schizophrenia [97]. Symptoms are found to influence coping [98]. Severity of psychotic symptoms is widely reported to relate to adopting more maladaptive coping mechanisms [16, 99, 100]. Negative

symptoms [22, 101] and depression [19] may be particularly important and there is evidence for a heavier reliance on emotion-orientated or non-problem-focused coping over other types within schizophrenia populations [102]. Social factors are likely to be key when considering coping style [103]. The articles within the review also suggest IQ [43], individual differences in physiology [42] and quality of sleep [40] are important. Whilst some studies recognise and attempt to control for some of these variables, it is likely that these variables would impact on the results presented.

In addition to assessing coping, the papers included within this review also highlight the role of unmet needs [41], level of education, [27], insight [44] and quality of sleep on QoL [40]. Other literature reviews demonstrate that symptoms [34], in particular negative symptoms [33], along with cultural, societal, economic, interpersonal support, and service availability also influence QoL [95].

Measures. As demonstrated by the presented literature, QoL and coping are complex constructs and there are debates surrounding their conceptualisation and measurement. Awad and Voruganti [104] review of QoL measures in schizophrenia concluded there was a lack of consensus and that measures which contain several QoL constructs are beneficial. Insight, which varies within schizophrenia, is indicated to be an important factor which influences self-report measures and therefore their validity [105]. However, authors argue that subjective QoL ratings are more in line with QoL definitions [93, 106] and maybe more clinically useful in assessing life satisfaction [105]. When considering observer- and clinician- rated QoL, incongruity is reported within schizophrenia research [96, 106]. The studies in this review contained either observer- or clinician- rated QoL measures, but more

studies are required to allow for detailed consideration of their potential impact on the results.

Coping is also problematic regarding its conceptualisation and assessment [107-109]. Due to the current limited consensus on coping as a construct, the measure chosen to assess coping should be carefully considered [109]. Without a more harmonious concept, there will be limitations in our understanding of the relative impacts coping mechanisms have [111]. There is ongoing suggestion that further development or novel creation of coping frameworks is required along with the potential for specific consideration for schizophrenia-specific symptomatologies within this [46, 112].

Limitations. There are major limitations in the methodology used by the studies presented in this review. Most results presented by studies within this review may be influenced by Type I and Type II errors due to the lack of power calculations, the small sample sizes and the use of multiple testing. Furthermore, the cross-sectional correlational designs adopted by most of the studies limit cause and effect being ascertained. Additionally, most of the studies did not consider or control for the potential of contributing variables. Furthermore, the inclusion of separately published analysis using the same data within Rudnick [32] and Rudnick and Martins [46] is a limitation of this review as this may influence conclusions drawn. Finally, all studies rely on set inclusion and exclusion criteria, therefore the full range of patients diagnosed with schizophrenia are unlikely to be represented by this review. Generalisability is therefore questionable.

Regarding the study selection process, several items within the inclusion and exclusion criteria could be deemed limitations and are important to consider. First, qualitative data was omitted from this review and therefore prevents a more holistic overview of the current

data to be reviewed. Second, bias may have been created given that unpublished data were not incorporated into this systematic review [113]. Third, the methodology for study selection restricted the results in terms of diagnosis and setting. It is important to note that the validity of the diagnostics reported within the included papers should be viewed as a strength as only Brenner and colleagues [42] did not report using a specific diagnostic assessment to confirm diagnosis. However, regarding diagnosis, individual differences in symptom presentation are found in schizophrenia and within this diagnosis there are several domains and schizophrenia-type disorders. Fourth, whilst this review aimed to represent a homogeneous population of schizophrenia, not all studies were fully homogeneous and subsyndromes were not accounted for. Fifth, many studies were excluded as they failed to adequately describe their samples or contained inpatient samples. However, for this literature, considering community and inpatient samples independently may be necessary, as within inpatient stays symptom severity is shown to increase the use of coping strategies [114].

2.7. Implications for Research and Practice

Given the outlined limitations, future reviews are required for inpatient settings and for the different domains of schizophrenia-type disorders. It would be beneficial for further data synthesis to incorporate mixed methodologies and unpublished studies to allow for a more comprehensive review to be completed. For any included qualitative research, it will be essential to use more relevant quality assessment tools.

Research into coping mechanisms is important due to its links to psychological interventions. It is likely that coping as a mechanism is far more complex than the presented literature alludes to. More research is required to enhance our understanding of

coping and to help create a more stable taxonomy of this construct (see [115]) to ascertain how coping may be influential to QoL in schizophrenia. Gaining a consensus on a coping construct within schizophrenia will aid identification of the most valid assessment tool to measure this. The development of new assessments of coping may be required.

Regarding QoL conceptualisations and assessments, the utilisation of both clinician and self-report measures are warranted to ascertain the potential impact these could have on results. Relating to this, researchers should ensure their definition of QoL is clear to enable them to detect the most valid QoL measure within the current broad QoL measures currently existing (see [25]). Furthermore, given the demonstrated impact factors such as insight and depression have on QoL scores in schizophrenia, these variables need to be assessed and controlled for [106, 116].

Further research is especially relevant to schizophrenia in helping us to improve the effectiveness of psycho-social interventions within this field [16, 45, 100]. Research with larger samples, which incorporates a comparison group, considers and controls for wider contributing factors (such as symptomatology) and, where possible, adopts a longitudinal design which will help obtain more reliable results and improve our understanding on potential causal relationships.

2.8. Conflicts of Interest and Funding Statement

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Chapter 3. Bridging Chapter

Within stress-vulnerability models, there are several components which contribute towards the development of mental health difficulties. The relative impact of impairments resulting from these difficulties are important to consider (see Figure 4). The systematic review presented in the previous chapter focused on the impact of the complex mental health difficulty, schizophrenia. As depicted in Figure 4, mental health difficulties and several interacting biopsychosocial variables impact on the level of impairment experienced by the individual. Quality of Life (QoL) is an important area which helps us to quantify the relative impact of mental health difficulties on an individual's functioning. The systematic review presented in the previous chapter aimed to ascertain if coping (a psychological factor) influenced QoL (an impact of impairment factor) within a community sample of individuals diagnosed with schizophrenia. These aspects help to provide information about possible mechanisms which lead to reductions in QoL. However, there are several inter-connected and influential variables (vulnerability and protective factors) which also contribute to our understanding of *why* and *how* individual differences exist in the development and impact of different complex mental health problems (see Figure 4).

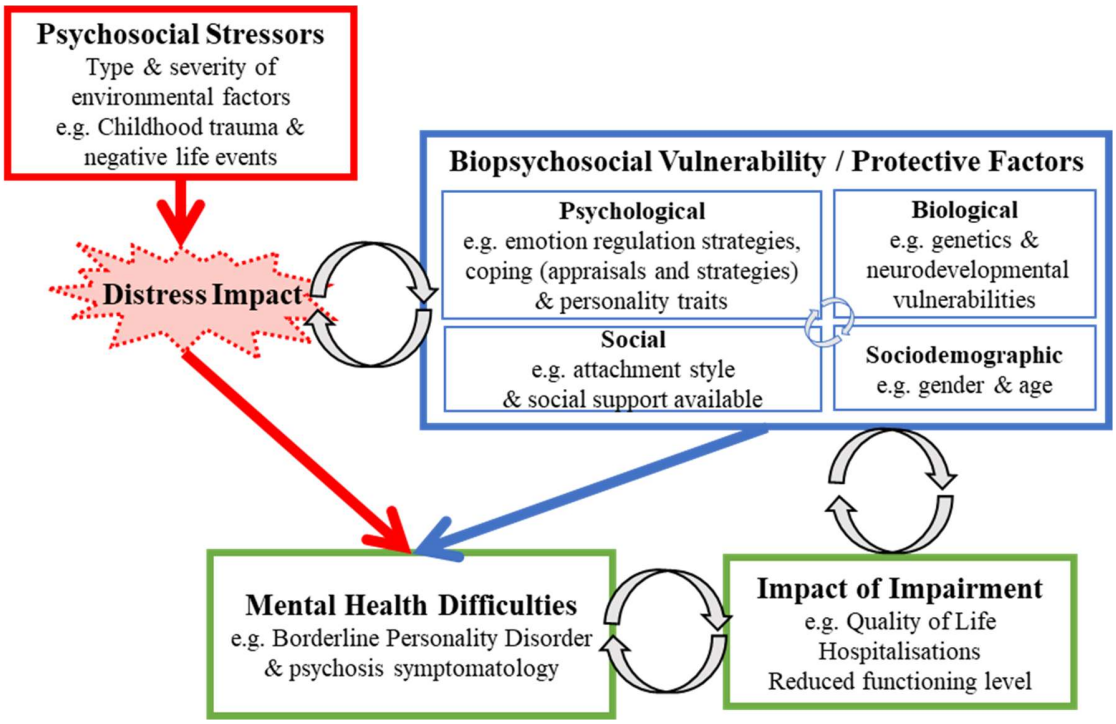

Figure 4. Neurobehavioral biopsychosocial model of mental health difficulties adapted from work by Lieb and colleagues (2004) and Leichsenring, Leibing, Kruse, New, & Leweke (2011).

Unlike the systematic review, which focused on the impact of impairment, the empirical paper (Chapter Four) will focus on factors involved in the potential development of symptoms using cross-sectional methodology.

As demonstrated in Chapter One, childhood trauma, attachment and emotion regulation are important areas when considering protective and vulnerability factors in individuals presenting with psychosis and borderline personality disorder (BPD) symptomatology. However, further empirical evidence is required to draw more definitive conclusions about the relative contribution of these variables and the precise mechanisms with which they may influence psychosis and BPD symptomatology. To aid our understanding, the empirical paper will explore the relative differences in childhood trauma, attachment, and

emotion regulation between a BPD, psychosis and control population. Through exploring this within the empirical paper, the relative influence of these vulnerability/protective factors will be investigated whilst addressing the specific role of childhood trauma (a psychosocial stressor) in the development of mental health difficulties (see Figure 4).

The creation, ethical application and data collection for the empirical study presented was jointly conducted with another trainee clinical psychologist who incorporated separate research areas (see Appendix B). Extended methodology relating to this are presented in Chapter Five.

Chapter 4. Empirical Paper

Prepared for submission to the Journal of Clinical Psychology.

Journal guidelines are in Appendix C.

Title Page

The impact of trauma and the role of attachment and emotion regulation in individuals with and without mental health difficulties.

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Short Title: Trauma, attachment and emotion regulation

Key words: "Childhood trauma", "Trauma", "Attachment", "Emotion Regulation", "Borderline Personality Disorder" & "Psychosis"

4.1. Abstract

Objective: To explore whether individuals diagnosed with borderline personality disorder (BPD), psychosis and controls differ in trauma histories and on trauma-related mechanisms, as well as exploring these relationships transdiagnostically.

Method: 28 and 29 individuals diagnosed with BPD and psychosis, respectively, and 63 controls were recruited and completed questionnaires assessing childhood trauma, attachment, emotion regulation (ER) and symptomatology.

Results: Individuals diagnosed with BPD scored significantly higher on most measures compared to individuals diagnosed with psychosis, which scored significantly higher on most measures compared to controls. A dose-response relationship was found between trauma and trauma-related mechanisms and between trauma and symptomatology. Importantly, attachment avoidance and anxiety and ER difficulties mediated the association between childhood trauma and BPD symptomatology, whilst attachment avoidance and ER difficulties mediated the association between childhood trauma and psychotic symptomatology.

Conclusions: Childhood trauma, attachment and ER are important variables for consideration in the development of BPD and psychosis symptomatology.

4.2. Introduction

Childhood trauma and later psychopathology. One in seven children are believed to experience maltreatment, with those experiencing repeated or a combination of physical, sexual or emotional abuse and/or neglect, frequently developing complex psychological trauma reactions (Bernstein et al., 2003; Ford & Courtois, 2009). When trauma is experienced in childhood, there is an increased risk of mental health difficulties in adulthood (e.g. Infurna et al., 2016; Read & Bentall, 2012; Van der Kolk, 2017). In clinical populations with mental health difficulties, 63-98% have reported experiencing some degree of childhood adverse events (Mueser et al., 1998; Rossiter et al., 2015), with females reporting higher rates than males (e.g. Anderson, Howard, Dean, Moran, & Khalifeh, 2016; Muenzenmaier et al., 2014).

Early trauma is shown to impact on brain functioning (Anda et al., 2006), psychobiological functioning, attachment, affect and behaviour regulation, cognition and self-concept (Cook et al., 2017). Whilst many individuals do not experience long-term difficulties (Elwood, Hahn, Olatunji, & Williams, 2009), for others childhood adversity is shown to increase the risk of psychosis (Morrison, Frame, & Larkin, 2003; Trotta, Murray, & Fisher, 2015) and borderline personality disorder (BPD) (Paris, 2000).

Exposure to childhood trauma has been found to be twice as likely in individuals diagnosed with psychosis compared to control populations (Varese et al., 2012). Research consistently shows a relationship between trauma and psychotic symptoms (see Barnow et al., 2010; Hardy, 2017; Spauwen, Krabbendam, Lieb, Wittchen, & Van Os, 2006), including a dose-response relationship along with causal mechanisms being suggested (e.g.

Bentall et al., 2014; Kelleher et al., 2013; Matheson, Shepherd, Pinchbeck, Laurens, & Carr, 2013; Trotta et al., 2015). Within BPD, over double the percentage of cases reported experience a severe traumatic event (93.9%) when compared with control populations (38.5%) (Bandelow et al., 2005), with the literature also suggesting a dose-response and causal relationship (Ball & Links, 2009; Silk, Lee, Hill, & Lohr, 1995; Zanarini et al., 2002).

The role of attachment. Attachment theory offers a model to understand how the early bonds formed in childhood provide a basis for the development of interpersonal and psychological functioning, personal resilience and emotion regulation (Bowlby, 1969; Fonagy, Steele, & Steele, 1991). Attachment theory has been applied to help our understanding of individual difference in coping when experiencing childhood trauma-related distress (Mikulincer & Shaver, 2012), and features in several intervention frameworks (e.g. Kinniburgh, Blaustein, Spinazzola, & Van der Kolk, 2017). The associated decreased ability to cope with distress in individuals with insecure attachments (anxious and avoidant) is theorised to intensify the negative consequences of trauma leading to an increased likelihood of later mental health difficulties (Bakermans-Kranenburg & van Ijzendoorn, 2009; Gumley, Taylor, Schwannauer, & MacBeth, 2014; Mikulincer, Shaver, & Solomon, 2015).

Interpersonal relationships are found to be an important factor in the development of BPD (Fonagy, Target, & Gergely, 2000; Levy, 2005; Liotti, Pasquini, & Cirrincione, 2000) and psychosis (Carr, Hardy, & Fornells-Ambrojo, 2018; Harder, 2014). Evidence suggests that attachment influences trauma-related impacts on psychotic (Pearce et al., 2017; Read & Gumley, 2008; Sitko, Bentall, Shevlin, & Sellwood, 2014) and BPD symptomatology

(Minzenberg, Poole, & Vinogradov, 2006), with attachment insecurity negatively impacting on distress levels, belief systems and sense of internal control (Kinniburgh et al., 2017). Literature reviews demonstrate that individuals with psychosis (Carr et al., 2018) and those with BPD (Agrawal, Gunderson, Holmes, & Lyons-Ruth, 2004) have predominantly insecure attachments compared to control populations. Specifically, attachment anxiety is evidenced to be prevalent in individuals with BPD diagnoses (Agrawal et al., 2004; Bakermans-Kranenburg & van Ijzendoorn, 2009; Levy, 2005; Levy, Meehan, Weber, Reynoso, & Clarkin, 2005) but both attachment styles are reported within individuals diagnosed with psychosis (Couture, Lecomte, & Leclerc, 2007). In a recent meta-analytic review, Carr et al. (2018) found that the pooled estimated prevalence of insecure attachment was 76% within individuals diagnosed with psychosis. Within this, avoidant (23%) attachment was more prevalent than anxious attachment (17%) but fearful attachment was the most common subtype (38%).

The role of emotion regulation. Emotion regulation or affect regulation is a multilevel process which involves the integration of behavioural and biological aspects of emotional self-control and relates to an individual's ability to perceive and respond to emotionally provoking stimuli (Thompson, Lewis, & Calkins, 2008). Childhood trauma and negative life events are associated with the development of maladaptive emotion regulation (Ehring & Quack, 2010; Garnefski, Kraaij, & Spinhoven, 2001; Van der Kolk, 2017). This includes an altered perception of emotive stimuli and emotional reactivity, but also reduced ability to recognise, discriminate, express and understand different emotions (Infurna, Rivers, Reich, & Zautra, 2015; McLaughlin, Peverill, Gold, Alves, & Sheridan, 2015; Sege, Amaya-Jackson, 2017).

Emotion regulation difficulties are a key component in the development of mental health difficulties, reducing an individual's ability to stabilise internal distress (Aldao, Nolen-Hoeksema, & Schweizer, 2010; Gross, 2002; Gross, Richards, & John, 2006). Maladaptive emotion regulation is found to predict subclinical symptomatology within control populations (e.g. Westermann, Boden, Gross, & Lincoln, 2013) and is a typical (Glenn & Klonsky, 2009) and influential feature in BPD (Berking & Wupperman, 2012; Carpenter & Trull, 2013; Domes, Schulze, & Herpertz, 2009; Rosenthal et al., 2008). Individuals with BPD have deficits in emotional awareness (Chapman, Leung, & Lynch, 2008), emotional processing, and in distinguishing between emotions (Suvak et al., 2011; Suvak et al., 2012). Individuals with psychosis have been shown to use maladaptive emotion regulation strategies such as internal-dysfunction (e.g. dwelling on feelings) and lower use of adaptive regulation such as internal-functional (e.g. reviewing thoughts) mechanisms (Horan, Hajcak, Wynn, & Green, 2013; Kring & Moran, 2008; O'Driscoll, Laing, & Mason, 2014; Trémeau, 2006). Individuals with psychosis are also shown to have a reduced emotional understanding (Lincoln, Hartmann, Köther, & Moritz, 2015), and be impaired in their ability to recognise (Kimhy et al., 2012) and express emotions (Henry et al., 2007; Henry, Rendell, Green, McDonald, & O'Donnell, 2008). Emotion regulation difficulties have been found to be associated with increased depression and psychotic symptomatology along with reduced QoL (e.g. Henry et al., 2008; Poole, Tobias, & Vinogradov, 2000). Despite some patterns being identified, the specific patterns and influence of emotion regulation difficulties on mental health remain to be fully explored (Berking & Wupperman, 2012; Perry, Henry, & Grisham, 2011).

4.3. Rationale, Aims and Hypothesis

The present study aims to explore 1) *how* trauma type and severity, attachment (anxiety and avoidance) and emotion regulation strategies differ between individuals diagnosed with psychosis and BPD and how they compare to a control group and, 2) *whether* trauma type and severity are related to attachment, emotion regulation, BPD and psychosis symptomatology irrespective of diagnostic group and finally, 3) *whether* attachment and emotion regulation mediate the relationship between childhood trauma and symptomatology irrespective of diagnostic group. It was hypothesised that that there will be a significant difference between the diagnostic groups; that trauma type and severity would be related to attachment, emotion regulation, BPD and psychosis symptomology; and that attachment and emotion regulation would influence the relationship between childhood trauma and symptomatology.

4.4. Materials and Method

Design. A quantitative cross-sectional, observational, between groups design was adopted. The current study was approved by the UK National Ethics Service, Cambridge Research Ethics Committee (17/EE/0179) and approved by relevant local NHS trusts Research and Development departments.

Sample. Power calculations indicated the largest required total sample size of 105 participants was required for the between groups-analysis. A total sample size of 120 participants was recruited across three groups: individuals diagnosed with BPD (n = 28); individuals diagnosed with psychosis (n = 29); and a non-clinical comparison group (n = 63). Inclusion criteria for all participants included being aged 18-65 years and fluent in the English language.

Clinical sample. Individuals recruited into the clinical sample had to be under the care of a mental health team, have no current serious suicide or violence risk, and meet the criteria for either a BPD diagnosis without a diagnosed secondary psychotic disorder or a psychotic disorder diagnosis without a secondary BPD diagnosis. Diagnosis was determined by the clinical team or care records. Whilst BPD was required as the primary diagnosis, comorbid personality disorders were not an exclusion criterion for the BPD group (Stuart et al., 1998). The psychosis population included individuals with non-affective diagnoses across the psychosis continuum, ranging from first episode psychosis to enduring schizophrenia. Eligibility and diagnostic checklists were completed by clinicians for all participants. All participants were recruited between from community or inpatient services within two NHS trusts in semi-rural East Anglia.

Non-clinical sample. Current or prior diagnosis of a mental health disorder or receipt of care from an NHS mental health team were exclusion criteria within the non-clinical sample. Eligibility and diagnostic checklists were completed through self-report within the non-clinical populations. A total of 63 participants were recruited in the control sample via an internet-based survey (Survey Monkey), advertised though online social networking sites (e.g. Facebook and Twitter).

Measures. A questionnaire booklet containing the following measures was administered to all participants.

Psychotic symptoms. The brief Schizotypal Symptoms Inventory (SSI; Hodgekins et al., 2012) is a 20-item state measure of the presence and current frequency of psychotic-like symptoms which is deemed suitable for use in clinical and non-clinical populations. Respondents rate how often (if at all) in the past two weeks each experience has happened

to them on a Likert scale ranging from zero (not at all) to four (all of the time). The SSI provides a total score and anomalous experiences, paranoia and social anxiety subscales. Good internal consistency (α = 0.87) and test-retest reliability (r = 0.86) are reported, along with high correlations to the full version (r = 0.87 and .90 for clinical and non-clinical samples respectively), indicating good convergent and construct validity (Hodgekins, 2009).

Borderline symptoms. The 23-item abbreviated Borderline Symptom List (BSL-23; Bohus et al., 2009) was used to measure BPD symptomatology and severity. Respondents rate from zero (not at all) to four (very strong) the degree to a given statement describes them over the past week. If respondents feel differently at different times, they are asked to rate how they have felt on average. Overall personal state during the last week (from absolutely down (0%) through to excellent (100%) and borderline behaviour frequency (consisting of 11-items incorporating questions about dangerous and harmful behaviours such as cutting, burning, strangling, headbanging) are also assessed. Excellent internal consistency (α = 0.97) and good test-retest reliability (r = 0.82) are reported (Bohus et al., 2009).

Childhood trauma. The 27-item Early Trauma Inventory Self Report – Short Form (ETISR-SF; Bremner, Bolus, & Mayer, 2007) was used to assess the presence of physical, emotional and sexual abuse before 18 years and general trauma after 18 years. Trauma severity is indicated by the total number of 'YES' responses from each possible YES/NO item. The ETISR-SF is deemed a suitable assessment of childhood adversity for clinical and non-clinical samples (Thabrew, de Sylva, & Romans, 2012). Satisfactory validity (r = 0.37-0.47) and internal consistency (α = 0.70-0.87) are reported (Bremner et al., 2007).

Attachment. The 16-item Psychosis Attachment Measure (PAM; Berry, Wearden, Barrowclough, & Liversidge, 2006) was used to measure the presence of adult anxious and avoidant attachment dimensions. Respondents rate 16-items from one ('not at all') to four ('very much') how much each statement about close-interpersonal relationships is like them. Acceptable internal consistency for the anxious ($\alpha = 0.70 – 0.86$) and avoidant dimension ($\alpha = 0.60 – 0.91$) are reported (Gumley, Taylor, Schwannauer, & MacBeth, 2014), in addition to good internal reliability for the anxious ($\alpha = 0.82$) and avoidant dimension ($\alpha = 0.72$) and all items contributing towards overall reliability (Berry et al., 2008; Berry, Barrowclough, & Wearden, 2008).

Emotion Regulation. The 36-item Difficulties in Emotion Regulation Scale (DERS; (Gratz & Roemer, 2004) was utilised to assesses emotion regulation difficulties. Respondents rate from one ('almost never'; 0-10%) to 5 ('almost always'; 91-100%) the degree that each statement applies to them. The DERS provides a total score and subscales of acceptance, goals, impulse, awareness, strategies, and clarity. Higher scores indicate greater difficulties in emotion regulation. It has been used in clinical and non-clinical populations (Neumann, van Lier, Gratz, & Koot, 2010; Sharp et al., 2011). Good construct validity, high total score ($\alpha = 0.93$) and subscale score ($\alpha > 0.76$), internal consistency (Salters-Pedneault, Roemer, Tull, Rucker, & Mennin, 2006) and good test-retest reliability ($p_I = .88$, $p < .01$) are reported (Gratz & Roemer, 2004).

Procedure. Participant Information Sheets containing relevant information about the study were presented to all participants. Informed consent was obtained for all participants before completing a demographic information sheet and questionnaire booklet. Ordering of

the questionnaires were counterbalanced to prevent ordering effects impacting the results (Bowling, 2005).

A researcher was present throughout for the clinical group whereas the nonclinical group completed the study online. A detailed risk management protocol was followed and adequate care surrounding potential distress was provided through tailored after-care sheets in addition to pre-care sheets for non-clinical participants.

4.5. Statistical Analysis

The Statistical Package for Social Sciences was used to compute descriptive statistics and all analyses (IBM Corp, 2016). Missing data were minimal (range from 0-1.8%) and found to be completely at random ($\chi^2 = 0.00$, $df = 174$, $p > .05$).

Between-group analysis. Shapiro-Wilk's tests, visual inspection of histograms, box plots and Q-Q plots were used to assess the normality of data distributions. Within the clinical populations, outliers were considered as representative of individual differences. Within the control group, seven participants were found to be outliers across several variables. These participants were not deemed to be representative of the control population as their BSL and SSI scores were within clinical ranges; they were therefore excluded from all between-group comparisons. Rank transformations were completed to deal with the uneven sample sizes and the heterogeneity of variance between population groups (Field, 2009). Welch Tests, Fisher's Exact Test or Pearson's Chi-squared test were performed. The conservative Bonferroni correction ($p < .002$) was applied to correct for multiple testing and to reduce the likelihood of Type I errors (Field, 2009). For Welch Tests, the Games-Howell post-hoc was used (Zimmerman & Zumbo, 1993). For dichotomous variables,

following guidance from MacDonald and Gardner (2000), pairwise comparisons with Bonferroni correction ($p < .008$) were adopted.

Correlational analysis. Non-parametric testing was indicated for all variables. Kendall's Tau was used to examine relationships between continuous variables. To assess relationships between the discrete dichotomous trauma type variables, Pearsons or Kendall's Tau point-biserial correlations were used (Field, 2009; Marascuilo & McSweeney, 1977). For the correlations of interest (total scores), Bonferroni correction ($p < .007$) was adopted.

Mediational analysis. The Preacher and Hayes (2008) path analysis procedure for simple and multiple mediation was utilised to assess the relative influence of emotion regulation and attachment on the influence childhood trauma has on symptomatology (see Figure 5). Due to the attachment dimensions being associated but not causally related, parallel mediation was adopted.

The PROCSS macro Plug-In incorporating the recommended bootstrapping of 5000 was used which completes a path-analysis through an ordinary least squared analytical framework (Hayes, 2013). This method allows adjustment for non-parametric distributions and test for both direct and indirect effects (Hayes, 2013). Following guidance by Field (2009), influential cases were determined and removed. Assessment revealed no multicollinearity problems. For all analysis, heteroscedasticity was found therefore the heteroscedasticity-consistent standard error estimator (HC3) was adopted (Hayes, 2013). In accordance to current guidelines by Hayes and Rockwood (2017), 95% bootstrap confidence intervals for the indirect effect (the ab path) were examined, with results not crossing zero supporting evidence for the presence of mediation.

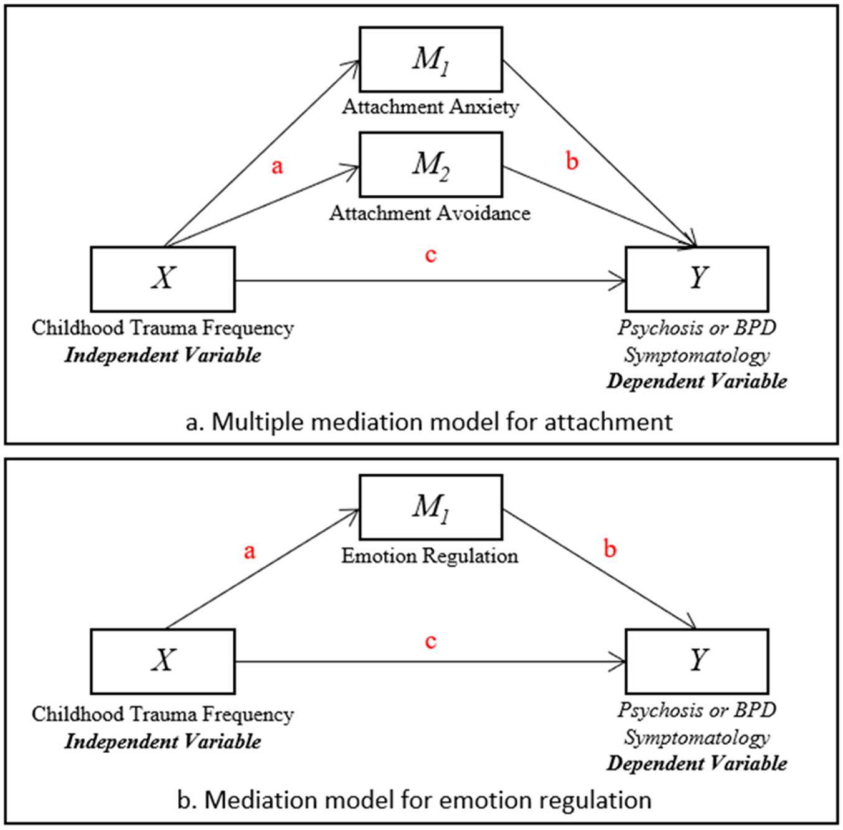


Figure 5. Mediation and multiple mediation model for attachment and emotion regulation.

4.6. Results

Demographic information is presented in Table 4. Significant differences between the groups were found for gender (χ^2 (2) = 8.09, $p < .05$) and education level (χ^2 (12) = 49.24, $p < .001$). All other variables were non-significant ($p > .05$). More females were present within the BPD and control groups, but no difference was found within the psychosis group. The control group presented with a higher level of education compared to the clinical populations. The psychosis group reported obtaining higher levels of education when compared to the BPD group.

Table 4

Demographic information for sub-groups and total sample.

Variable	Group			Total
	BPD (n = 28)	Psychosis (n = 29)	Controls (n = 63)	(N = 120)
Gender, n (%)				
Female	22(78.60)	13(44.80)	44(69.80)	79(65.80)
Male	6(21.40)	16(55.20)	19(30.20)	41(34.20)
Age - M (SD)	35.82(13.78)	36.86(12.83)	32.43(10.53)	34.37(12.04)
Ethnicity, n (%)				
White British	26(92.90)	20(69.00)	45(71.40)	91(75.80)
Asian British		3(10.30)	1(1.60)	4(3.30)
Black British		3(10.30)		3(2.50)
White Other	2(7.10)	3(10.30)	12(19.00)	17(14.20)
Asian Other			5(4.20)	5(4.20)
Highest Education, n (%)				
Primary School	1(3.40)	1(3.40)		1(0.80)
Secondary School	13(46.40)	4(13.80)	2(3.20)	19(15.80)
College	10(35.70)	14(48.30)	7(11.10)	31(25.80)
Undergraduate	5(17.90)	6(20.70)	17(27.00)	28(23.30)
Masters		2(6.90)	21(33.30)	23(19.20)
PhD/Doctoral			14(22.20)	14(11.70)
Other/ unknown		2(6.90)	2(3.20)	4(3.30)
Employment, n (%)				
Employed	3(10.7)	7(24.10)	38(60.30)	48(40.00)
Unemployed	22(78.6)	17(58.60)	2(3.20)	41(34.20)
Student	1(3.60)	3(10.30)	21(33.30)	25(20.80)
Retired	1(3.60)	1(3.40)	1(1.60)	3(2.50)
Other/ unknown	1(3.60)	1(3.40)	1(1.60)	3(2.50)
Marital Status, n, (%)				
Married	8(28.60)	5(17.20)	17(27.00)	30(25.00)
Separated	1(3.60)	2(6.90)		3(2.50)
Divorced	2(7.10)		2(3.20)	4(3.30)
Widowed		1(3.40)		1(0.80)
Single	15(53.60)	18(62.10)	25(39.70)	58(48.30)
Living with partner	2(7.10)	2(6.90)	17(27.00)	21(17.50)
Other/ unknown		1(3.40)	2(3.20)	3(2.50)

Note. *p < .05. **p < .0.1. **p, .001.; BPD = Borderline Personality Disorder

Between-Group Analysis. Descriptive data for all variables is presented in Table 5. Mean rank descriptive and between group analysis is presented in Table 6.

Significant differences between groups were found for all variables other than general and physical trauma ($p > .002$). Medium-large effect sizes were found for all variables other than for DERS awareness and PAM avoidant subscales, where small effect sizes were found.

For the presence of emotional and sexual abuse, inspection of the adjusted residuals indicated that the BPD group was significantly different ($p < .001$) from the other groups. Following Bonferroni adjustment, post-hoc analysis revealed that the control group had significantly lower rates of sexual ($p < .001$) and emotional ($p = .001$) trauma when compared to the BPD group, but no significant differences were found for the psychosis group when applying the Bonferroni adjustment (sexual, $p = .028$; emotional, $p = .011$). Between BPD and Psychosis groups, no significant differences were found for emotional ($p = .010$) and sexual ($p = .418$) trauma. Other post-hoc analyses showed that the control population scored significantly lower than the BPD and psychosis groups for all variables ($p < .001$) other than BSL behaviour ($p = .199$), DERS aware ($p = .075$), and DERS clarity ($p = .005$). Here no difference was found with the psychosis population, but significant differences remained for the BPD population ($p < .001$). The BPD group did not significantly differ from the psychosis group for SSI total ($p = .005$), and all SSI subscales ($p = .013$ - $.293$), PAM anxious ($p = .047$) and avoidant ($p = .026$), DERS-accept ($p = .041$), -goals ($p = .007$), -aware ($p = .117$), -clarity ($p = .008$), and childhood trauma frequency ($p = .006$) and total trauma frequency ($p = .029$). For BSL total and all BSL

subscales, DERS-total, -strategies, and DERS-impulse, the BPD groups scored significantly higher than the psychosis group ($p < .001$).

Table 5

Descriptive information and between-groups analysis for clinical variables with literature comparisons.

Variable	Total	Group		
		BPD	Psychosis	Controls
	($N = 113$)	($n = 28$)	($n = 29$)	($n = 56$)
ETISR-SF *M*(*SD*)	9.09 (5.95)	14.12 (4.26)	11.24 (5.46)	5.41(4.35)
General *M*(*SD*)	3.06 (2.07)	3.61 (1.59)	3.93 (2.42)	2.33 (1.83)
YES *f*(%)	102 (90.3%)	28 (100%)	28 (96.6%)	46 (82.1%)
NO *f*(%)	11(9.7%)	0 (0%)	1 (3.4%)	10 (17.9%
Physical *M*(*SD*)	2.17 (1.45)	3.43(1.50)	2.54(1.43)	1.31(1.46)
YES *f*(%)	85 (75.2%)	26 (92.9%)	25 (86.2%)	34 (60.7%)
NO *f*(%)	28 (24.8%)	2 (7.1%)	4 (13.8%)	22 (39.3%)
Emotional *M*(*SD*)	2.57 (2.10)	4.57(0.74)	3.14(1.92)	1.22(1.65)
YES *f*(%)	75 (67%)	28 (100%)	22 (75.9%)	25 (45.5%)
NO *f*(%)	37 (33.0%)	0 (0%)	7 (24.1%)	30 (54.5%)
Sexual *M*(SD)	1.32 (2.04)	2.61(2.41)	1.50(2.15)	0.60(1.37)
YES *f*(%)	46 (41.1%)	18 (64.3%)	14 (50%)	14 (25%)
NO *f*(%)	66 (58.9%)	10 (35.7%)	14 (50%)	42 (75.0%)
Childhood *M*(*SD*)	6.03(4.71)	10.61 (3.61)	7.24 (4.26)	3.11(3.07)
BSL - *M*(*SD*)	1.08 (1.09)	2.35 (0.89)	1.25 (0.91)	0.32 (0.23)
Overall Life Quality (%)	61.9(2.22)	41.9 (1.81)	56.6 (2.39)	73.9 (1.49)
Behaviours	0.18 (0.26)	0.40 (0.27)	0.15 (0.22)	0.06 (0.09)
SSI – *M*(*SD*)	21.80 (16.87)	37.77 (11.37)	28.48 (16.37)	9.82 (6.97)
Social anxiety	10.35 (7.25)	17.00 (5.50)	12.59 (6.89)	5.91 (4.89)
Paranoia	6.46 (6.69)	11.81 (5.91)	8.17 (7.16)	2.66 (3.59)
Anomalous	4.98 (6.35)	8.96 (5.81)	7.72 (7.52)	1.25 (1.81)
PAM Anxious *M*(SD)	1.28 (0.77)	2.16 (0.55)	1.21 (0.63)	0.88 (0.53)
PAM Avoidant *M*(SD)	1.62 (0.68)	2.13 (0.46)	1.73 (0.69)	1.31 (0.62)
DERS - *M*(SD)				
Acceptance	14.88 (7.55)	23.27 (6.42)	14.69 (6.91)	10.79 (4.31)
Goals	16.42 (5.58)	21.04 (4.80)	17.00 (5.30)	13.67 (4.29)
Impulse	12.93 (6.90)	20.62 (6.62)	13.14 (5.81)	8.75 (2.63)
Awareness	17.71 (5.84)	21.35 (4.82)	18.62 (6.25)	15.41 (5.12)
Strategies	20.12 (9.75)	31.69 (6.10)	21.93 (8.14)	13.25 (4.46)
Clarity	12.58 (5.08)	17.11 (4.48)	13.45 (5.50)	9.73 (2.65)
Total	94.65 (33.71)	135.08(23.28)	98.83 (28.80)	71.63 (14.05)

Note. Abbreviations: BPD = Borderline Personality disorder; *f* = frequency, % = percentage; *SD* = standard deviation; ETISR-SF = Early Trauma Inventory Self Report – Short-Form; BSL= Borderline Symptom List-23 Short Version; Brief SSI = Brief Version of Schizotypal Symptoms Inventory; PAM = Psychosis Attachment Measure; DERS = Difficulties in Emotion Regulation Scale.

Table 6

Descriptive information with rank transformed data and between-groups analysis for clinical variables.

Variable	Total	Group			Test Statistics
		BPD	Psychosis	Controls	
	(*N* = 113)	(*n* = 28)	(*n* = 29)	(*n* = 56)	
ETISR-SF *f* (%)	113 (100)	28 (100)	29 (100)	56 (100)	
General					p = .015, C = .27*
YES	102 (90.3)	28 (100)	28 (96.6)	46 (82.1)	
NO	11 (9.7)	0 (0)	1 (3.4)	10 (17.9)	
Physical					$\chi^2(2) = 12.873^{**}$, $C = .32^{**}$
YES	85 (75.2)	26 (92.9)	25 (86.2)	34 (60.7)	
NO	28 (24.8)	2 (7.1)	4 (13.8)	22 (39.3)	
Emotional					**$\chi^2(2) = 26.354^{***}$, $C = .44^{***}$**
YES	75 (67)	28 (100)	22 (75.9)	25 (45.5)	
NO	37 (33.0)	0 (0)	7 (24.1)	30 (54.5)	
Sexual					**$\chi^2(2) = 13.133^{***}$, $C = .32^{**}$**
YES	46 (41.1)	18 (64.3%)	14 (50%)	14 (25)	
NO	66 (58.9)	10 (35.7%)	14 (50%)	42 (75.0)	
Childhood Total *M*(*SD*)	6.03 (4.71)	10.61 (3.61)	7.24(4.26)	3.12(3.07)	**$F_W(2, 58.52) = 50.973^{***}$, $\omega^2 = .43$**
Trauma Total - *M*(*SD*)	9.09 (5.95)	14.12 (4.26)	11.24 (5.46)	5.41 (4.35)	**$F_W(2,61.63) = 45.735^{***}$, $\omega^2 = .41$**
BSL *M* rank (*SE*)					
Total	58.93 (3.31)	99.5 (3.17)	68.93 (5.42)	33.47 (2.65)	**$F_W(2,56.97) = 127.207^{***}$, $\omega^2 = .38$**
95% CI	52.38 - 65.49	93.00 - 106.00	57.82 - 80.04	28.15-38.79	
Overall life quality (%)	61.40 (3.19)	31.27 (3.94)	53.22 (6.52)	79.62 (3.41)	**$F_W(2,56.45) = 42.941^{***}$, $\omega^2 = .34$**
95% CI	55.07 - 67.72	23.16 - 39.38	39.86 - 66.59	72.79 (86.44)	
Behaviours	59.25 (3.10)	92.39 (5.15)	55.98 (5.85)	44.37 (3.16)	**$F_W(2,53.92) = 31.285^{***}$, $\omega^2 = .34$**
95% CI	53.10 - 65.40	81.83 - 102.95	43.99 - 67.97	38.04 - 50.69	

Variable	Total	Group			Test Statistics
		BPD	Psychosis	Controls	
	(N = 113)	(n = 28)	(n = 29)	(n = 56)	
SSI M rank (SE)					
Social anxiety	60.38 (3.32)	92.57 (4.14)	70.76 (6.09)	38.91 (3.53)	F_W**(2,58.76) = 49.041***, ω² = .40**
95% CI	53.80 - 66.96	84.08 - 101.07	58.28 - 83.24	31.83 - 45.99	
Paranoia	59.25 (3.28)	90.96 (4.37)	68.05 (6.77)	38.83 (3.18)	F_W**(2,54.82) = 47.152***, ω² = .38**
95% CI	52.74 - 65.75	82.00 - 99.93	54.19 - 81.91	32.46 - 45.20	
Anomalous	59.82 (3.21)	88.16 (5.05)	76.88 (5.49)	36.82 (2.92)	F_W**(2,53.01) = 48.271***, ω² = .45**
95% CI	53.46 - 66.19	77.79 - 98.53	65.64 - 88.12	30.98 - 42.66	
Total	59.55 (3.31)	95.93 (3.17)	75.38 (5.36)	33.17 (2.82)	F_W**(2,58.28) = 111.144***, ω² = .59**
95% CI	52.99 - 66.11	89.42 - 102.44	64.40 - 86.35	27.52 - 38.82	
PAM Anxious M rank (SE)	60.02 (3.33)	98.91 (3.33)	58.24 (5.76)	41.50 (3.74)	F_W**(2,62.14) = 67.956***, ω² = .43**
95% CI	53.42 - 66.62	92.08 - 105.74	46.44 - 70.05	34.00 - 49.00	
PAM Avoidant M rank (SE)	60.27 (3.31)	86.70 (4.62)	65.09 (6.60)	44.55 (4.17)	F_W**(2,60.25) = 22.706***, ω² = .23**
95% CI	53.70 - 66.83	77.21 - 96.18	51.58 - 78.60	36.20 - 52.90	
DERS - M (SD)					
Acceptance	59.84 (3.31)	95.79 (4.36)	59.71 (6.15)	41.93 (3.56)	F_W**(2,58.24) = 45.378***, ω² = .38**
95% CI	53.29 - 66.39	86.83 - 104.74	47.11 - 72.30	34.79 - 49.06	
Goals	60.69 (3.28)	90.84 (5.82)	65.17 (5.83)	43.29 (3.59)	F_W**(2,55.39) = 24.801***, ω² = .30**
95% CI	54.20 - 67.17	78.90 - 102.78	53.24 - 77.11	36.10 - 50.47	
Impulse	59.67 (3.32)	97.21 (4.09)	65.09 (5.89)	38.09 (3.25)	F_W**(2,57.47) = 63.525***, ω² = .46**
95% CI	53.08 - 82.83	88.83 - 105.60	53.03 - 77.14	31.57 - 44.61	
Awareness	59.67 (3.32)	97.21 (4.09)	65.09 (5.89)	38.09 (3.25)	F_W**(2,57.72) = 14.183***, ω² = .16**
95% CI	53.08 - 66.25	88.83 - 105.60	53.03 - 77.14	31.57 - 44.61	
Strategies	59.30 (3.32)	99.11 (3.41)	68.59 (5.44)	34.58 (2.89)	F_W**(2,57.81) = 103.591***, ω² = .57**
95% CI	52.71 - 65.88	92.10 - 106.11	57.44 - 79.73	28.79 - 40.37	

Variable	Total	Group			Test Statistics
		BPD	Psychosis	Controls	
	($N = 113$)	($n = 28$)	($n = 29$)	($n = 56$)	
Clarity	60.07 (3.31)	92.36 (4.50)	66.28 (6.97)	40.71 (3.27)	F_W**(2,54.77) = 43.153***, ω² = .36**
95% CI	53.51 - 66.63	83.13 - 101.59	52.00 - 80.55	34.17 - 47.26	
Total	59.73 (3.34)	100.04 (3.39)	67.76 (5.60)	35.41 (2.92)	F_W**(2,57.81) = 103.418***, ω² = .56**
95% CI	53.11 - 66.34	93.07 - 107.00	56.28 - 79.24	29.56 - 41.26	

Note. p = Fishers Exact Test; χ^2 = Pearson's Chi-squared test; F_W = Welch Test on rank-transformed means; C = Pearson's Contingency Coefficient; ω² = Omega Squared; *$p < 0.05$; ** $p < 0.01$, *** $p < 0.001$. All tests are two-tailed, **Significant post Bonferroni adjustment ($p = .002$)**

Abbreviations: BPD = Borderline Personality disorder; % = percentage; *SD* = Standard Deviation; CI = Confidence Intervals; ETISR-SF = Early Trauma Inventory Self Report - Short Form; BSL-23 = Borderline Symptom List - Short Version; Brief SSI = Brief Version of Schizotypal Symptoms Inventory; PAM = Psychosis Attachment Measure; DERS = Difficulties in Emotion Regulation Scale.

Correlational analyses. Correlational analyses between trauma variables and all trauma-related variables are shown in Table 7. Childhood trauma and total trauma experiences were significantly correlated with all trauma-related variables and trauma subscales ($p < .001$). For general trauma, no trauma-related variable was significantly correlated with the presence of general trauma and only symptomatology measures were significantly correlated with physical trauma. The presence of emotional trauma was significantly correlated with all variables. Sexual trauma presence was significantly correlated with all variables other than attachment.

Table 7

Correlations between trauma and trauma-related variables (N = 120)

Variable	Trauma measure (ETISR-SF)					
	Childhood Total	Trauma Total	General (Y/N)	Physical (Y/N)	Emotion (Y/N)	Sexual (Y/N)
BSL	τ**0.436*****	τ**0.409*****	τ_b0.088	τ_b**0.187****	τ_b**0.387**^{***c}	τ_b**0.278**^{***c}
SSI	τ**0.423*****	τ**0.397*****	τ_b0.175*	τ_b**0.280*****	τ_b**0.376**^{***c}	τ_b**0.224**^{**c}
PAM						
Anxious	τ**0.359*****	τ**0.340*****	τ_b0.137	τ_b0.143	τ_b**0.340**^{***c} r_{pb}**0.343*****	τ_b0.198^{*c}
Avoidant	r**0.511*****	r**0.479*****	r_{pb}0.159	r_{pb}0.187*	^{c}	r_{pb}0.197^{*c}
DERS	τ**0.384*****	τ**0.344*****	τ_b0.064	τ_b0.175*	τ_b**0.326**^{***c}	τ_b**0.192**^{**c}

Note. $^{\tau}$ = Kendalls Tau; $^{\tau_b}$ = Kendalls Tau point-biserial correlation; $^{r_{pb}}$ = Pearsons point-biserial correlation * $p < .05$; ** $p < 0.01$, *** $p < 0.001$; ^{a} ($N = 110$); ^{b} ($N = 111$); ^{c} ($N = 119$). All tests are two-tailed. **Bonferroni adjustment $p = .007$.**

Abbreviations: BPD = Borderline Personality Disorder; ETISR-SF = Early Trauma Inventory Self Report - Short Form; BSL= Borderline Symptom List --23 Short Version; Brief SSI = Brief Version of Schizotypal Symptoms Inventory; PAM = Psychosis Attachment Measure; DERS = Difficulties in Emotion Regulation Scale.

Mediation analysis. The main results for the mediation analyses are summarised in Figure 6.

Attachment. Figure 6, model a, summarises the attachment mediation model with BPD symptomatology. For the a-path, childhood trauma significantly predicted attachment anxiety ($F(1,112) = 60.59$, $p < .001$, $R^2 = .35$) and avoidance ($F(1,112) = 47.51$, $p < .001$, R^2

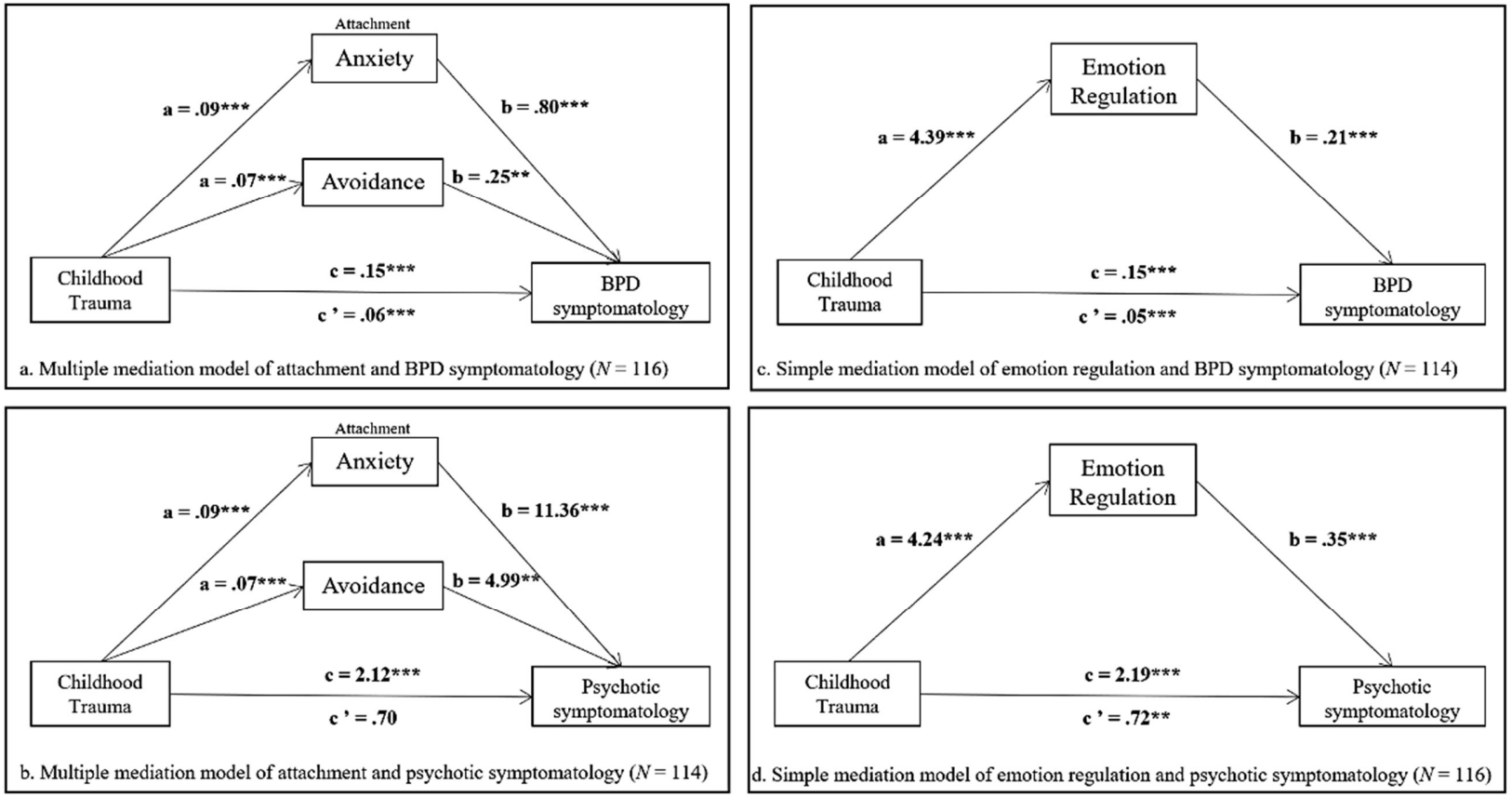
= .27). For the c-path, childhood trauma significantly predicted BPD symptomatology ($F(1,112) = 82.66$, $p < .001$, $R^2 = .46$). Childhood trauma and attachment together also significantly predicted BPD symptomatology ($F(3,110) = 86.62$, $p < .001$, $R^2 = .70$). The 95% bias corrected bootstrap mediation analysis indicated attachment to be a significant mediator (the ab-path; total effect = .09, bootstrap CI = .06-.13) with attachment anxiety ($\kappa^2 = .08$, bootstrap CI = .05-.11) having relatively greater effects than attachment avoidance ($\kappa^2 = .02$, bootstrap CI = .01-.03).

Figure 6, model b, summarises the attachment mediation model with psychotic symptomatology. For the a-path, childhood trauma significantly predicted attachment anxiety ($F(1,114) = 60.87$, $p < .001$, $R^2 = .35$) and avoidance ($F(1,114) = 48.75$, $p < .001$, $R^2 = .27$). For the c-path, childhood trauma significantly predicted psychotic symptomatology ($F(1,114) = 64.89$, $p < .001$, $R^2 = .37$). Combined, childhood trauma and attachment significantly predicted psychotic symptomatology ($F(3,112) = 47.72$, $p < .001$, $R^2 = .60$). The 95% bias corrected bootstrap mediation analysis indicated that when attachment avoidance and anxiety are combined in the parallel mediational model, attachment was not a significant mediator (the ab-path; total effect = 1.42, bootstrap CI = .98-2.01). However, the path through attachment avoidance was found to independently have a mediational influence ($\kappa^2 = .37$, bootstrap CI = .12-.71) whereas attachment anxiety did not ($\kappa^2 = 1.06$, bootstrap CI = .64-1.61).

Emotion regulation. Figure 6, model c summarises the emotion regulation mediation model with BPD symptomatology. For the a-path, childhood trauma significantly predicted emotion regulation ($F(1,112) = 90.66$, $p < .001$, $R^2 = .39$). For the c-path, childhood trauma significantly predicted BPD symptomatology ($F(1,112) = 85.67$, p

<.001, R^2 = .46). Childhood trauma and emotion regulation together also significantly predicted BPD symptomatology (F(2,111) = 130.59, p <.001, R^2 = .75). The 95% bias corrected bootstrap mediation analysis indicated emotion regulation to be a significant mediator (the ab-path; κ^2 = .10, bootstrap CI = .07-.12).

Figure 6, model d summarises the emotion regulation mediation model with psychotic symptomatology. For the a-path, childhood trauma significantly predicted emotion regulation (F(1,114) = 85.23, p <.001, R^2 = .38. For the c-path, childhood trauma significantly predicted psychotic symptomatology (F(1,114) = 66.20, p <.001, R^2 = .39). Childhood trauma and emotion regulation together significantly predicted psychotic symptomatology (F(2,1123 = 84.58, p <.001, R^2 = .69). The 95% bias corrected bootstrap mediation analysis indicated emotion regulation was a mediator (the ab-path; κ^2 = .1.47, bootstrap CI = 1.10-1.90).



Note. *$p < 0.05$; **$p < 0.01$, ***$p < 0.001$

Figure 6. Standardised regression coefficients of the multiple mediation model of the effects of childhood trauma on Borderline Personality Disorder (BPD) and psychotic symptomatology through attachment and of simple mediation model of the effects of childhood trauma on BPD and psychotic symptomatology through emotion regulation.

4.7. Discussion

The first aim of the present study sought to investigate how trauma (type and severity), attachment and emotion regulation strategies differ between a group of individuals diagnosed with psychosis; a group of individuals diagnosed with BPD; and a healthy comparison group. To the author's knowledge, the results represent the first comparison between BPD, psychosis and control groups regarding trauma (type and severity), attachment and emotion regulation. Significant differences were found between the groups for all variables other than for the presence of general and physical trauma.

It is unsurprising that control group scored lower than the clinical populations on most variables assessed. BSL behaviours did not differ between psychosis and control populations with both groups reporting low rates, but the BPD group did significantly differ from both groups, consistent with the idea that self-injurious and suicidal behaviours are a typical feature of this diagnosis (Lieb, Zanarini, Schmahl, Linehan, & Bohus, 2004). Differences between psychosis and BPD groups were found for the BSL total and subscales scores, and the impulse, strategies and total DERS score. Given the documented high prevalence of psychotic symptoms (around 20-50%) within BPD populations (see Schroeder, Fisher, & Schäfer, 2013), it is unsurprising that no differences between these groups were found between the two clinical groups for psychotic symptoms. Similarly, both populations have been reported to present with high trauma levels (Bandelow et al., 2005; Varese et al., 2012), higher rates of insecure attachment (Carr et al., 2018; Fonagy et al., 2000; Harder, 2014; Levy, 2005; Liotti et al., 2000), and emotion regulation difficulties (e.g. Berking & Wupperman, 2012; Horan et al., 2013; Kring & Moran, 2008; O'Driscoll et al., 2014; Rosenthal et al., 2008; Trémeau, 2006). The difference between the BPD and

psychosis groups on BSL scores and two DERS subscales are notable findings. It could be argued that the DERS impulse (i.e. impulse control relating to negative emotion) and clarity (i.e. emotional clarity deficits) subscales are both typical of the BPD diagnosis symptoms within the DSM behavioural and affective criteria (see Lieb et al., 2004). Taken together, the typical BSL symptoms are a key differential presenting feature when compared to psychosis populations. However, psychotic symptomatology, attachment and emotion regulation difficulties are more similar.

Even after applying stringent statistical adjustment for multiple testing, the study demonstrated a link between severity of total traumas and childhood traumas including increased insecurity in attachment, worsened emotion regulation and higher BPD and psychosis symptomatology. When considering distinct types of traumas, general trauma did not significantly relate to any of the variables whereas all childhood-based traumas (physical, emotional and sexual) were all found to be related to higher symptomatology. Only emotional trauma was found to relate significantly to attachment but both emotional and sexual abuse were significantly associated with increased emotion regulation difficulties. Given that emotional trauma presented with the greatest effect, it is likely that the interpersonal nature of childhood trauma is a key mechanism of impact. Childhood traumas were shown to have the largest correlations when compared to general traumas (which occur after 18 years of age). This indicates that childhood-based traumas have greater impact that adulthood-based traumas. The combined impact of childhood traumas to BPD and psychotic symptomology within the mediation analyses is indicative of the cumulative negative impact of multiple victimisation in childhood on later mental health symptomatology.

The results are consistent with theory and literature documenting the presence and frequency of childhood traumas being linked to increased psychotic (e.g. Catalan et al., 2017)) and BPD symptomatology (e.g. Ball & Links, 2009). It also parallels this link made for other mental health difficulties in adulthood (e.g. Infurna et al., 2016; Read & Bentall, 2012; Van der Kolk, 2017).

Given that general traumas occur after 18 years of age, the lack of between-group differences and correlation with other variables can be viewed to support literature suggesting childhood traumas are particularly important to later psychopathology (Read & Bentall, 2012). It is consistent with findings from studies focusing on complex PTSD symptoms, where adulthood-based traumas were not shown to be predictive of adult symptom complexity, whereas childhood traumas were (Cloitre et al., 2009). Additionally, the effect size for correlations with the trauma-related variables was higher for childhood traumas compared with total trauma. Combined, this supports wider literature evidence that childhood-based traumas are particularly influential to BPD (Paris, 2000) and psychotic symptomatology (Morrison et al., 2003; Trotta et al., 2015).

The lack of between-group differences for physical trauma and the non-significant correlation with attachment and emotion regulation may be due to the interpersonal nature of emotional and sexual abuse. Interpersonal trauma has been shown to be particularly influential in the development of psychiatric disorders (e.g. Cloitre et al., 2009; Cook et al., 2017; Van der Kolk, 2017). It is possible that emotional abuse co-occurs more with sexual compared to physical abuse potentially resulting in complex trauma reactions with greater impacts. However, in a non-clinical sample, physical and sexual abuse most likely to co-occur (Bigras, Daspe, Godbout, Briere, & Sabourin, 2017). Another possibility is that the

gender bias within the sample impacted on the results as additive and multiplicative synergistic patters of childhood trauma are found to differ between genders (see Putnam, Harris, & Putnam, 2013). Furthermore, unlike physical abuse, emotional and sexual abuse were both found to significantly relate to emotion regulation difficulties. This may suggest a possible differential mechanism for the impact of different types of traumas on symptom severity.

The difference between the types of childhood trauma can be seen within the wider literature. Sexual abuse is seen to have a larger impact on mental health when compared to physical abuse (e.g. Briere & Elliott, 2003; Fergusson, Boden, & Horwood, 2008; Gibb, Chelminski, & Zimmerman, 2007) and is specifically identified as a key risk factor in the development of BPD (Fossati, Madeddu, & Maffei, 1999). Emotional abuse is also found to be particularly damaging. Within a meta-analysis of the literature, Norman et al. (2012) found the highest pooled odds ratio for emotional abuse when compared to neglect and physical abuse in relation to depressive and anxiety disorders, substance use, and suicidal behaviour. The present study replicates these findings given that emotional abuse presented with the largest correlational effect sizes compared to other types of abuse. Emotional abuse was also the only type of trauma found to relate to attachment. This supports theoretical models and research suggesting that emotional abuse contributes towards increased attachment insecurity and combines to impair emotion regulation skills and maladaptive coping mechanisms. This results in reduced social functioning and ability to form helpful adult attachments and contributes towards worsened mental health (see Riggs, 2010).

As highlighted in Hayes and Rockwood (2017), whilst it is important to note the limitations of the mediation analysis, the results provide an insight into potential causal inferences between childhood trauma and symptomatology, in addition to recognising the influence of attachment and emotion regulation. The analysis adopted by this study had potentially reduced validity given the presence of heteroscedasticity. It must also be emphasised that the models of interaction presented are reductionistic and limit the conclusions inferred. The mediation analysis provided insight into the third aim of the study by transdiagnostically exploring the role attachment and emotion regulation have in the relationship between childhood trauma and BPD and psychotic symptomatology.

The significant associations revealed within the mediation analysis supports prior findings and theoretical frameworks for the impact of childhood trauma on symptomatology, emotion regulation and insecure attachment (see Baer & Martinez, 2006; Cook et al., 2017; Kinniburgh et al., 2017; Read & Bentall, 2012). The same is found for identified associations between attachment and emotion regulation with BPD (e.g. Levy, Johnson, Clouthier, Scala, & Temes, 2015; Minzenberg et al., 2006) and psychotic symptoms (e.g. Carr et al., 2018; Harder, 2014; Poole et al., 2000).

The analysis suggest that attachment mediates the relationship between childhood trauma and BPD symptomatology. The combined model accounted for 70% of the variance in presenting BPD symptomatology. Within this model, attachment anxiety accounted for a greater proportion than attachment avoidance, indicating more relative influence. Attachment combined with childhood trauma accounted for 60% of the variance in presenting psychotic symptomatology. Only attachment avoidance was found to mediate the association of childhood trauma to psychotic symptomatology. The finding that

attachment, specifically attachment anxiety, is a significant mediator between trauma and psychopathology is consistent with literature for BPD symptoms (Minzenberg et al., 2006), post-traumatic stress disorder (Sandberg, Suess, & Heaton, 2010), eating disorders (Tasca et al., 2013), general psychological adjustment (Limke, Showers, & Zeigler-Hill, 2010) and levels of somatisation (Waldinger, Schulz, Barsky, & Ahern, 2006). For psychotic symptomatology, the literature on attachment mediating the association between trauma and symptomatology is mixed, and the results of this study are only partially supported. Van Dam, Korver-Nieberg, Velthorst, Meijer, and de Haan (2014) found attachment style to partially mediate childhood maltreatment's association on positive symptomatology within psychosis populations, their siblings, but not within control populations. Contradictory to this, in a control sample Goodall, Rush, Grunwald, Darling and Tiliopoulos (2015) found that attachment anxiety and avoidance significantly mediated the association between emotional abuse and schizotypy. Similarly, within an undergraduate sample, Sheinbaum, Kwapil, & Barrantes-Vidal (2014) found significant mediation effects of fearful attachment (i.e. combined high attachment anxiety and avoidance) on the association of physical and emotional trauma with schizotypy, suspiciousness, and psychotic-like symptomatology. Finally, Pearce et al. (2017) found that fearful attachment mediated the relationship between trauma and paranoia symptomatology.

These findings can be viewed to support the mediational role of attachment avoidance on the influence of childhood trauma on psychotic symptomatology; however, to some degree they contradict the findings for attachment anxiety not being a significant mediator. However, it is important to note that the results presented for attachment anxiety mediating the relationship between childhood trauma and psychotic symptoms may have

been influenced by the inclusion of the social anxiety subscale within the SSI measure of psychotic symptoms. Indeed, there may be an overlap between social anxiety and attachment anxiety. Additional analysis would be required to ascertain if this influenced results, however this is beyond the scope of this thesis. In summary, attachment is consistently presented as a key factor; however, the evidence is mixed for its mediational role on the association between trauma and symptomatology y. It is possible that the mediational influence may only be relevant to certain types of traumas and for certain domains of psychotic symptomatology.

Emotion regulation was found to be a significant mediator of the relationships between trauma and both BPD and psychotic symptomatology. In total, these variables accounted for 75% of the variance in BPD symptomatology and 69% of variance in psychotic symptomatology. Similar to the literature presented for attachment, the mediational role of emotion regulation has been previously evidenced (Alink, Cicchetti, Kim, & Rogosch, 2009). This includes BPD (Gaher, Hofman, Simons, & Hunsaker, 2013), PTSD (Stevens et al., 2013), anxiety, depression (Goldsmith, Chesney, Heath, & Barlow, 2013; Matos, Pinto-Gouveia, & Costa, 2013) and general psychological maladjustment (Choi & Oh, 2014). Given that trauma causes distressing internal emotional responses, it is unsurprising that an individual's ability to stabilise internal distress influences the impact it has. It is important to consider that there may be differential effects of the various emotion regulation dimensions on the relationship between childhood trauma and symptoms. Specifically, Bardeen, Fergus, and Orcutt (2012) suggest that the awareness dimension of the DERS may represent a different higher-order emotion regulation construct when compared to the other five dimensions.

There are documented interacting influences between attachment and emotion regulation (e.g. Alink et al., 2009; Benoit, Bouthillier, Moss, Rousseau, & Brunet, 2010; Matos et al., 2013) which add a further level of complexity to consider but are beyond the current scope of this paper. Nevertheless, collectively, these findings support emotion regulation and attachment being critical areas of consideration for BPD and psychotic symptomatology when considering the impact of childhood trauma. This study finds anxious dimensions to be more important for BPD symptomatology and avoidant dimensions to be more important for psychotic symptomatology.

Strengths and limitations. Notable strengths of this research include the urban-rural geographical area covered which incorporated two NHS trusts. The sample characteristics and findings were also predominantly comparable and supportive of prior research. However, this study should be interpreted in the light of several limitations. The presenting homogeneity in gender and requirement for English-language within the community-based control and NHS-based clinical samples have limited generalisability. Additionally, there is potential bias resulting from the title of the study which could appeal more to potential participants with trauma histories. Furthermore, given the complexity of this field, there are several notable confounding variables not accounted for by this study including medication, IQ, age, gender and socio-economic status which were not controlled for and may impact on results. Finally, the cross-sectional nature of this study precludes definitive causal interpretations regarding the long-term impacts of childhood trauma and longitudinal studies have documented evidence for this (e.g. Fergusson, McLeod, & Horwood, 2013; Rabinovitch, Kerr, Leve, & Chamberlain, 2015).

Implications for practice and research. Despite limitations, the results are of clinical relevance and importance. The presented study demonstrates a clear relationship between trauma and symptoms of both BPD and psychosis and supports a trauma-focused understanding of complex mental health difficulties. Although BPD and psychosis diagnoses differentially present, there may be more similarities than originally theorised, with both presenting with overlapping causal factors. Full assessment of trauma experiences should be a routine aspect of contact with services. Screening for attachment styles and emotion regulation difficulties may provide helpful information to allow care teams to more effectively tailor treatment and help clients to better engage with interventions. Within psychological interventions, it is essential that trauma, attachment and emotion regulation are incorporated into formulations and treatment. Transdiagnostic person-centred assessment of symptom development and maintenance of BPD and psychosis presentations will add depth to formulations and aid optimal intervention planning and implementation. Therapeutic approaches incorporating some form of emotion regulation training, such as Third Wave Cognitive Behavioural Therapies (Hayes, 2016) or Emotion-Regulation Therapy (Renna, Quintero, Fresco, & Mennin, 2017) are likely to be helpful in reducing BPD and psychotic symptoms. Similarly, interventions incorporating attachment, such as transference-focused psychotherapy (Levy et al., 2006), are likely to be helpful in addressing BPD symptomatology.

Regarding recommendations for future research, there is a growing need for more longitudinal studies to help infer causality relationships and to better ascertain the multifaceted vulnerability and protective factors which influence presenting psychopathology. Further investigation of the direction and cause of multidimensional

influences underpinning psychotic and BPD experiences are needed. Larger and more heterogenous samples need to attend to gender influences when considering the potential differential distribution and influence of trauma, attachment and emotion regulation difficulties. Finally, more detailed examination of the different dimensions of attachment and emotion regulation will provide greater understanding to these complex and influential constructs.

4.8. Conclusions

This study provides a helpful insight into presenting differences and similarities between the BPD and psychosis population groups relative to control populations. The trauma rates presented highlight the high prevalence of childhood trauma within both clinical and non-clinical population groups. Whilst causality cannot be assumed, the results provide further confirmation of the already widely documented relationship between childhood trauma and BPD and psychosis symptoms in adulthood.

Clinicians need to consider, thoroughly assess and attend to the presence and influence of trauma, attachment and emotion regulation difficulties on presenting psychopathology. Treatment plans need to be person-centred and incorporate these influential factors. From a wider societal perspective, progression in preventative measures and effective early interventions to reduce trauma rates may help reduce rates of complex mental health conditions including BPD and psychosis.

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4.10. References

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Chapter 5. Extended Methodology

5.1. Introduction

The extended more detailed sections presented here relate to the full empirical paper within Chapter Four. The creation, ethical application and data collection were jointly conducted with another trainee clinical psychologist who examined separate research areas (see Appendix B for joint-working procedures).

5.2. Participants

The study inclusion and exclusion criteria are in Appendix D. A total of 286 adults entered the study. One hundred and twenty fully completed the questionnaire pack. The 120 participants were aged between 19-64 years (79 females and 41 males).

Non-clinical population. A total of 224 adults entered the study. Across the eligibility criteria, 153 did not fully complete the initial screening questioning or were not deemed eligible for participation (e.g. 15 individuals indicated that they had received mental health care; two people were not fluent in spoken and written English; 38 individuals had or had previously had a mental health diagnosis; six people indicated that they were suicidal; and one person did not provide consent). Of the remaining participants, 71 clicked the cancel button during participation or did not fully complete the survey. The final total for the non-clinical population ($N = 63$) were aged between 21 and 61 years and were recruited primarily from the UK but included other countries.

Clinical population. A total of 171 eligible participants were approached, 114 were unreachable, declined to participate or were lost to follow-up following initial contact with a researcher. Twenty-eight participants with a diagnosis of BPD (aged between 19 and 64

years) and 29 participants with a diagnosis of psychosis (aged between 19 and 62 years) took part.

5.3. Ethical Approval

To ensure the study met all ethical principles and legislative requirements, the study was planned and conducted following guidance from the British Psychological Society Code of Ethics and Conduct (2009) and the Code of Human Research Ethics (Reeves, 2011). The study was ethically considered and approved by the Cambridge Research Ethics Committee (Appendix E). Relevant to the two clinical samples, additional approval was granted from Cambridgeshire and Peterborough NHS Foundation Trust (CPFT) and Norfolk and Suffolk NHS Foundation Trust (NSFT) research and development departments.

All study documents were reviewed by a local public and patient involvement (PPI) panel review panel and followed the Research Governance Frameworks (Department of Health, 2005) provided by the NHS Health Research Authority.

5.4. Ethical Considerations

Recruitment (consent, withdrawal and coercion). All participants were provided with a Participant Information Sheet (PIS) which outlined the details of the study, including that participation was voluntary, to enable them to make an informed decision (see Appendix F). All participants were encouraged to take time to fully consider the information and reminded to discuss this with family, friends or mental health team members before deciding to participate.

Non-clinical population. The non-clinical sample were recruited anonymously via an internet-based survey advertised though social networking sites (e.g. Facebook and Twitter). Study adverts contained the study title and a link to the survey. Potential participants were provided with an electronic copy of the non-clinical PIS. All participants were required to complete an electronic-based Eligibility and Diagnostic Checklist (Appendix D). Participants created a non-identifiable code by selecting four random (not consecutive) letters followed by four random digits. Only eligible participants were able to access an online version of the study demographic sheet and questionnaire booklet.

The clinical population. The Screening and Enrolment Log (see Appendix G) recorded recruitment related activities. When the researcher met with potential participants, the researchers assured them that they had the right to withdraw at any time without giving a reason and that this would not impact on their current care, medical or legal rights.

The clinical population groups were recruited NHS services via tear-off self-referral posters (see Appendix H) placed in clinical areas (e.g. waiting rooms) or through clinical teams. For participants referred via their clinician, consent to contact was ascertained prior to the researcher contacting them. To ensure informed consent was obtained before taking part, researchers checked the potential participant had read and understood the information within the PIS and had been in receipt of the PIS for a minimum of 48 hours. Once confirmed, participants were given the opportunity to ask questions and have them answered by the researcher.

Specific study mobile phones were purchased with the contact numbers solely used for study purposes. For all telephone self-referrals, a telephone guidance protocol (see Appendix I) was utilised. Potential participants were sent the PIS via their preferred method

(i.e. by email or post). During the consent procedure, potential participants' right to withdraw at any point, and reasons for potential limitations in removal of data (i.e. after the data has been analysed), was explained and the opportunity to ask questions was given. NHS Trust specific checklist documents (Appendix J) and a Clinical Note Template (Appendix K) ensured trust-specific procedures were upheld and details regarding an individual's participation were appropriately recorded. Clinicians were informed about participation via the Clinician Information Letter (see Appendix L), direct contact with the clinician or via email.

Confidentiality and Safeguarding. Information flow to participants was considered to ensure that autonomy, privacy and dignity were maintained. Good Clinical Practice Guidelines were upheld (Emanuel, Wendler & Grady, 2000). For the non-clinical population, all participants were asked to make a note of their self-created non-identifiable code, in case they wanted to use this later to withdraw their data. For the clinical population, confidentiality of source data was maintained through the provision of a unique non-identifiable number on all data sheets. Any identifiable information was stored separately to the questionnaire booklets. The Prize draw and research feedback sheet (Appendix M) which had participant's full name and contact details on did not contain any information which could be linked to their data. The Data Protection Act (1998) regulations and guidelines from the University of East Anglia (UEA) were upheld throughout. All study documents containing identifiable information were securely stored in allocated locked areas within respective NHS trusts during recruitment. All non-identifiable data were stored on password-protected folders on password-protected laptops. Throughout, only the research team had access to study data. Following specific guidelines, all

identifiable information and source data were relocated and stored in a locked location at the UEA.

All participants presenting with current serious suicidal or violence risk were excluded from participating. For the clinical population group, participants were informed of confidentiality procedures including breaches of confidentiality if they revealed clinical malpractice or risks to themselves or others. Additionally, questions relating to current risk (within the Borderline Symptom List; Appendix N) were checked by the researcher at the end of the questionnaire pack completion to ensure any risks revealed were appropriately identified and managed prior to the participant leaving. At the end of participating, participants were asked if they would like to share any information (if at all) with a member of their clinical team to ensure that if requested it would be disseminated appropriately.

Coercion. Whilst the use of monetary compensation within clinical research is debated, Pandya and Desai (2013) outline that intent of compensation outweighs the means. Within this study, four £20 Amazon vouchers were provided as an offer of gratitude rather than a means of coercion. Entry into the draw was voluntary.

5.5. Distress

Potential distress was carefully considered and efforts to minimise distress were operationalised throughout. The PIS contained all relevant information participants required to decide whether they would like to participate and included a section relating to potential distress caused by some of the sensitive questions. To minimise participant harm and maximise benefits, all questionnaire measures were carefully chosen based on the literature, guidance from research supervisors and collaborating clinicians. All questionnaires were

deemed suitable for all population groups and shortened versions of various questionnaires which retained good psychometric properties were selected to limit the time and length of questioning. Furthermore, to ensure all questionnaires were deemed appropriate, the research team submitted these for review by the PPI panel in addition to being reviewed by the ethics committee.

The non-clinical population. Given the online platform and anonymity of the non-clinical participants, the potential distress and risk management for the non-clinical sample was raised by the ethics committee and required careful consideration. Before participating, all non-clinical participants were provided with a pre-care information sheet (see Appendix O) which included information and signposting to relevant services and helplines. Any potential participant was excluded from participating if they answered 'yes' to the question "do you currently have any thoughts or plans about hurting yourself or ending your life?" If excluded, withdrawn, or after completing the study, individuals were redirected to a page providing aftercare information (Appendix P). If they required it, participants were given the option to request this information to be sent to them via email.

The clinical population. For the clinical population groups, participants were only eligible to participate if they were not deemed to currently pose a serious suicide or violence risk. The severity of the risk was determined collaboratively between a responsible clinician and the researcher. Potential participants were not able to participate if they reported current suicidal plans or intent to act on these or if participation was deemed to be detrimental to the participant's wellbeing (see Appendix Q for diagrammatic representation of recruitment). A researcher was present throughout to provide support if required and to ensure participants were debriefed and had the opportunity to ask any questions. At any

point, if distress or risks were disclosed a Risk Management Protocol (see Appendix R) was followed to minimise distress and risk.

5.6. Procedure

Clinical group. The clinical population groups were recruited via tear-off self-referral posters (see Appendix H) or via their clinical teams. Where possible, to promote the study, researchers presented information about the study to services via a PowerPoint presentation (Appendix S). Clinicians were provided with study information sheets (Appendix L) and Eligibility and Diagnostic Checklists (see Appendix D) to help them successfully identify suitable participants.

Before completing the questionnaire booklet, participants signed a consent form (see Appendix T). It was emphasised that an individual could withdraw at any time without explanation or consequences to their treatment or support. When a participant confirmed participation, the Demographic Information Sheet (see Appendix U) was given prior to the questionnaire booklet (see Appendix N). Participants completed the questionnaire booklet at their own pace and were able to take breaks when required. All participants were booked a two-hour appointment to allow for adjustment for individual needs. The estimated completion time was about one hour and 10 minutes. Most participants completed the research booklet on one occasion but, when required or requested, participants were given additional appointments to complete the questionnaire booklet.

Study appointments occurred within suitable and preferable locations for the participant which included within the NHS trust and at the participant's home. Only participants considered to pose a low risk were offered appointments outside NHS premises. Lone

working policies and buddying systems were employed to ensure researcher safeguarding. At any point during the study appointment, if risk or distress was expressed or disclosed the Risk Management Protocol (see Appendix R) was followed.

On completion of the study measures, participants were verbally debriefed about the content of the questionnaire pack, the aims of the study, given the opportunity to ask any questions they had and thanked for their participation. Participants were asked if there was any information collected within the questionnaire booklet which they would like to be shared with a member of their clinical team. Participants were then provided with a Prize Draw form (Appendix M) to enable them to indicate whether they would like to be entered into the prize draw in addition to indicating if they would like information about the overall study findings once available.

Non-clinical group. The non-clinical group completed a similar online version of the procedure documented for the clinical group. This included confirmation of receipt of an online PIS and comprehension of the information provided within this, the completion of a specific non-clinical Eligibility and Diagnostic Checklist (Appendix D) and an online consent form (Appendix T). The research team purchased a 12-month contract with surveymonkey.com to provide a secure server which the study could be completed on.

Any question which deemed the potential participant to be ineligible for participation (e.g. responding ‘YES’ to "Are you currently or have you ever been under the care of a mental health NHS team?") were excluded from taking part and provided with the aftercare information sheet. Following completion of the consent form, all participants deemed eligible created a non-identifiable code comprising of four random (not consecutive) letters followed by four random digits. Participants were asked to make a note of their code. All

participants were provided with a pre-care information sheet. Participants started by completing an online version of the Demographic Information Sheet. After completion, in accordance with the Online Procedure Template (Appendix V), an online version of the questionnaire booklet was provided. Finally, an online version of the prize draw sheet was given (Appendix M). If participants wanted a debrief or to ask questions at the end of participation, contact information for the research team was provided. When completing the study questionnaires or if a participant withdrew at any point, all participants were given an online Aftercare sheet (Appendix P).

5.7. Measures

All measures included in the study can be found in Appendix N. The demographic information sheet (Appendix U) was completed before the main questionnaire booklet.

All measures were validated for working age adults and available freely or with permission from the author. To minimise burden to participants, shortened versions with adequate psychometric qualities were adopted. Total completion time was estimated to be approximately one hour and 10 minutes. Explanations for the choice of certain questionnaires are outlined below.

- The Early Trauma Inventory Self Report – Short Form (ETISR-SF; Bremner, Bolus, & Mayer, 2007**)** is a shortened version of the Early Trauma Inventory Self Report measure of traumas and has an administration time of five minutes compared to the original 30 minutes completion time (Bremner et al., 2007; Plaza et al., 2011).

- In clinical samples, the Psychosis Attachment Measure (PAM; Berry, Wearden, Barrowclough, & Liversidge, 2006) is considered more appropriate than other

measures given its reference to ‘key people’ rather than specifically on romantic relationships or parents (Berry et al., 2006). Estimated completion time is between 5-10 minutes (Berry et al., 2006; Berry, et al., 2009). Permission to use this measure was obtained from the author (Appendix W).

- The Brief Schizotypal Symptoms Inventory (SSI; Hodgekins et al., 2012). The SSI is designed to measure schizotypal symptoms rather than schizotypy as a personality trait as the original Schizotypal Personality Questionnaire (SPQ; Raine, 1991) which it was derived from measured (Hodgekins, 2009). The estimated completion time is five minutes.

- The Abbreviated Borderline Symptom List (BSL-23; Bohus et al., 2009). The BSL-23 is a self-report measure of borderline personality disorder symptomatology and severity. It is a shortened version of the Borderline Symptom List (BSL; Bohus et al., 2007) and contains 23 items rather than the 95 items in the BSL. BSL-23 administration time is between three and four minutes (Soler et al., 2013).

5.8. Power Calculations and Statistical Analysis

See Appendix X for detailed information on sample size calculations and analysis procedure.

Chapter 6. General Discussion and Conclusions

This chapter summarises and discusses the findings of the collective thesis. It also enables reflection on the research process, overall strengths and limitations and contributions to research and practice.

6.1. Rationale

The rationale for this study was developed from the ongoing need to further investigate influential mechanisms and protective factors in the development of the complex mental health difficulties of psychosis and Borderline Personality Disorder (BPD).

Specifically, this thesis aimed to improve current understanding of how coping may influence quality of life (QoL) outcomes within schizophrenia. Through exploring the relative differences between psychosis, BPD and control populations, an understanding of the relative influences of childhood trauma and the potential impact of attachment and emotion regulation can be determined. The completion of the systematic literature review and empirical paper presented adds to the evidence base for various theoretical models and advances understanding of the multifaceted mechanisms and influence of different components which impact on symptomatology and QoL.

6.2. Summary of Findings

The systematic review involving nine community-based studies of schizophrenia patients demonstrated some cross-sectional evidence for the relationship between coping and QoL. Problem-focused coping was found to be particularly important and positively associated with QoL improvements, with a small-medium positive correlation found. However, definitive conclusions regarding the influence of both problem- and emotion-

focused coping on QoL is beyond the scope of the current literature. The review highlighted the need for better reporting of results within this field, and a requirement of a better agreed conceptualisation and measurement of coping as a construct.

The empirical paper revealed the relative differences between BPD, psychosis and control populations in childhood trauma type and severity, attachment, emotion regulation and symptomatology (BPD and psychosis). Between-group differences were found across all variables with the control population having the lowest scores compared to the clinical populations. Predominantly the BPD group scored highest. Transdiagnostic analysis revealed that total and childhood trauma frequency were positively related to all variables, with childhood-based traumas found to have the largest effect on all variables. Emotional and sexual abuse types were highlighted to be important regarding symptom presentation and for emotion regulation difficulties. Emotional abuse was found to be particularly influential. Emotion regulation and attachment were found to have mediational influences on the relationship between childhood trauma and symptomatology. For attachment anxiety, this influence was solely found for BPD symptomatology. For attachment avoidance, this influence was present for both psychotic and BPD symptomatology.

6.3. Critical Evaluation.

The presented thesis has notable strengths. All questionnaires adopted have been used previously and were validated. The large sample size of the empirical paper has enabled effectively powered statistical testing. Furthermore, the study has contributed theoretically and has clinical and research implications. However, it is important to identify potential improvements and highlight several limitations which impact on the interpretation of results.

Design and methodology. The large sample size recruited within the empirical paper was made possible through collaboration with another Trainee Clinical Psychologist and through professional relationships developed across the two NHS recruiting trusts. Collaboration allowed pooled resources which included the ethics application process, the development of recruitment aids (e.g. Appendix S), a larger geographical region to be covered and flexibility of days for study appointments. It also enabled contributions to the current evidence base in further analysis incorporating all variables from the wider study. Additionally, the differential outlooks, ways of working and skill base has been highly fruitful regarding knowledge acquisition, problem-solving and mutual support.

Quality assessment. All papers within the systematic review were doubly quality assessed. If more resources were available, it would be beneficial for the study selection regarding the inclusion/exclusion criteria to be double-checked for accuracy, therefore improving the reliability of results. The completion of a meta-analysis may also be beneficial. However, given the limited number of studies meeting inclusion criteria and the limits in results reported, it was decided that results would be unreliable and were beyond the scope of the current evidence base.

Cross-sectional methodology. The cross-sectional self-report nature of the questionnaires used in the studies within the systematic review and the empirical study may limit interpretations.

In the empirical study, bias could have resulted from under- or over-reporting across all domains. The title of the project may have created a self-selection bias and the self-report retrospective nature of questionnaires may have influenced responses. Hardt and Rutter (2004) indicate that retrospective accounts of childhood trauma are typically under-

reported and therefore the rates presented here may still under-estimate true rates. However, Fisher et al. (2009) showed that for individuals diagnosed with psychosis, retrospective reports of childhood trauma are reliable and stable over time, regardless of symptom severity and the trauma assessment method used. Furthermore, all the measures adopted within the empirical paper were found to present with good internal consistency, providing evidence for a level of reliability for self-reporting across all domains.

The cross-sectional methodology does not allow causal inferences to be determined. It is important to recognise that this is particularly problematic for the mediational analyses which postulates that causal processes develop over time. The results of mediational influences within the systematic review and empirical paper may therefore be misleading or biased in their estimations (Maxwell & Cole, 2007). However, as evidenced by Hayes and Rockwood (2017), whilst mediational analysis warrants longitudinal methodology, there is still value in completing this analysis on cross-sectional data. Therefore, the findings of the mediational analysis are still of value in aiding our understanding of the relative influence emotion regulation and attachment may have.

It may be beneficial to incorporate mixed method approaches such as the clinician-rated and qualitative interviews. It would also be helpful to have longitudinal data incorporated, including any available retrospective information, for example from child and adolescent clinical notes, to help infer causal mechanisms. However, recruitment would have been significantly impacted given these methodologies take comparatively more time. For the empirical paper presented here, given the online platform used for the control populations, a mixed method approach would have been problematic, if not impossible.

Given the time-limited doctorate, longitudinal methodologies would have also been impossible.

Eligibility criteria. The eligibility criteria used within both papers impact on the reliability, validity and generalisability of results.

The systematic review is limited in generalisability and scope due to only utilising published studies which are in English (Parekh-Bhurke et al., 2011). Additionally, the systematic review focused on community-dwelling individuals with a diagnosis of schizophrenia. The review could have included inpatient sample, been more inclusive of other psychotic-based disorders and incorporated a wider population age-range. This would have increased the number of studies included. However, incorporating wider samples may result in problems of inappropriately generalising conclusions across psychotic disorders and settings where relative influences on QoL are variable.

Within the empirical paper, individuals from inpatient and outpatient settings were included. Whilst this allowed for acute phases and stable / chronic phases to be incorporated, given that the study excluded those with significant risks and those who lacked capacity, it is likely that this stopped acutely unwell individuals from taking part. Given that clinical settings impact on severity of symptoms (given that there are thresholds for warranting inpatient care), it would have been beneficial to document and control for the clinical setting that participants were recruited from.

The empirical paper included those meeting criteria for BPD or a ‘Psychotic Disorder’ diagnosis. In BPD, symptoms have been shown to present in late childhood although treatment is often sought, and diagnoses are frequently only given in late

adolescence (Chanen & Kaess, 2012; Zanarini, Frankenburg, Khera, & Bleichmar, 2001). This, alongside the evidence that adolescent-based diagnoses are reliable and valid (see Sharp & Fonagy, 2015), indicates that a proportion of those presenting with diagnosable or diagnosed BPD would have been excluded from taking part in the study. Consequently, the generalisability of findings is age-limited.

The inclusion of 'psychotic' disorders enabled several different diagnosable psychotic disorders to be incorporated. Whilst this has the benefit of being more of an accurate snapshot of those presenting within clinical services, as outlined within the systematic review article, there are methodological difficulties in heterogenous sampling. It would have been beneficial to document and control for different psychotic disorders or have limited the inclusion to specific diagnoses; however, this would have limited generalisability and would have impacted on recruitment.

The empirical paper also has limited generalisability due to age, English language restrictions and geographical limitations for the clinical groups. Given the high proportion of females within the BPD and control groups, there are limitations in generalisability to males presenting within these groups. It is also possible that across all groups, those who chose not to take part could have differentially responded and altered results.

Reductionist perspective, omitted and confounding variables. For all variables presented within this thesis, it is important to recognise that their conceptualisations, assessment and the statistical analysis performed are reductionistic, given the complexity within this field. Additionally, there are several possible confounding variables which may have impacted results and variables of interest which were not included.

Confounding and omitted variables of influence may have impacted on the findings. Amongst others, gender age, substance misuse, medication, social-environmental, socio-demographic intrapersonal and interpersonal influences along with genetic, endocrine and neurological factors are important areas of influence within mental health and QoL and therefore could have influenced the results within both papers (e.g. Bornovalova, Hicks, Iacono, & McGue, 2013; Cohen, Chen, Gordon, Johnson, Brook, & Kasen, 2008; Di Forti, Iyegbe, Falcone, Powell, & Murray, 2014; Nolen-Hoeksema, 2012; Sara, Burgess, Malhi, Whiteford, & Hall, 2014). Controlling for such variables would have been beneficial and may have improved the validity of results.

Within the systematic review, confounders were inadequately addressed. Although several studies recognised this as a limitation, it would not have been feasible to only include studies which addressed confounding variable influences. This is something for consideration once more literature is available. Within the empirical paper, the extent of potential confounders is vast. Given the previously reported gender differences in childhood trauma experiences and the higher prevalence of females within BPD diagnosed population groups, it is likely that gender differences are influential within this field. Expectedly, gender was found to significantly differ between the three population groups. However, whilst several studies have demonstrated attenuated results when controlling for age, gender etc., they also find that they do not eliminate significant findings between trauma impacts on mental health symptomatology (e.g. Janssen et al., 2004; Springer, Sheridan, Kuo, & Carnes, 2007). Furthermore, it is important to recognise that the influence of potential confounding variables is complex and may be particularly relevant to certain

types of trauma (e.g. see Fergusson, Boden, & Horwood, 2008). This is also something to recognise and consider in future studies.

Given the ethical dilemma of potentially overburdening participants with questionnaires, and the complexity within this field, certain key areas were not assessed within the empirical study. First, it may have been beneficial to the validity of the diagnostic groups to include a diagnostic interview. However, given eligibility checklists were completed alongside clinicians to confirm diagnosis, this could be viewed as unnecessary. Second, amongst others, the relational context of traumatic events, childhood neglect and adulthood-based life-stressors such as revictimisation are prominent variables which were not included (Alink, Cicchetti, Kim, & Rogosch, 2009; Classen, Palesh, & Aggarwal, 2005; Widom, Czaja, & Dutton, 2014). Third, negative symptomatology within psychotic disorders was not assessed by the brief Schizotypal Symptoms Inventory (Hodgekins et al., 2012). Negative symptomatology is evidenced as an important feature in psychosis (Möller, 2016). Therefore, it may have been beneficial to assess psychotic symptoms using a broader measure, such as the Positive and Negative Symptom scale (Kay, Fiszbein, & Opfer, 1987). However, given research suggests that childhood trauma is particularly influential in positive symptomatology severity (Hammersley et al. 2003; Lysaker, Beattie, Strasburger & Davis, 2005; Schenkel et al. 2005), negative symptoms may not be as important for specific aims of this research. Fourth, the empirical paper omits the investigation of physiological aspects of emotional experience which would be a helpful theoretical component to explore given that childhood-based traumas are found to impact the neurobiological stress sensitivity and response system (Neigh et al., 2009; Lardinois, Lataster, Mengelers, Van Os & Myin-Germeys, 2011).

Whilst it is important to consider an interplay between different variables when conceptualising the cause and impact of childhood trauma, and the influential factors on QoL outcomes, given the time- and resource-limited scope of Clinical Psychology Doctoral level research projects, it is understandable that incorporating further variables was not feasible.

6.4. Theoretical Implications

As well as providing evidence for various theoretical models, overall the results are congruent with theory and the wider literature.

Existing models which incorporate coping mechanisms in explaining QoL variation in schizophrenia, such as Caron, Lecomte, Stip, and Renaud (2005) and Ritsner (2007) are broadly supported by the systematic review findings. However, the results demonstrate that there may be particular mechanisms of influence, namely problem-focused coping. Further clarity within these models would be beneficial.

The thesis adds to the evidence base and understanding of complexity within stress-vulnerability and distress-protection models (e.g. Lazarus & Folkman, 1987; Zubin & Spring, 1977; Ritsner, 2007). Risk factors identified here include childhood trauma, insecurity in attachment (avoidance and anxiety) and emotion regulation difficulties whereas coping mechanisms (such as problem-focused mechanisms) act as a protective factor. These combine to influence symptomatic presentations. Interacting aspects include attachment and emotion regulation. Specific models within psychosis and BPD are therefore supported (e.g. Barnow et al., 2010; Hardy, 2017; Read, Fosse, Moskowitz, Connolly, 2014).

The results also support the evidence that traumas occurring in childhood have a greater magnitude of negative impact (e.g. Oshri, Sutton, Clay-Warner, & Miller, 2015). A possible explanation for this is that childhood-based traumas have more extensive consequences due to alterations in the developing brain (e.g. Champagne, 2010; Hoy et al., 2012; Tyrka, Burgers, Philip, Price, & Carpenter, 2013). Brain development alterations, such as reduced volume of the prefrontal cortex (Morandotti et al., 2013) and amygdala (Veer et al., 2015), amplify the impact of stress-inducing events (McLaughlin, Conron, Koenen, & Gilman, 2010). This increases vulnerability to mental health difficulties. Consequently, traumagenic neurodevelopmental models are promising aids to enhancing the theoretical and clinical understanding of the impacts of trauma on symptomatology (e.g. for psychosis see Read, Fosse, Moskowitz, & Perry, 2014).

The rates of childhood and general traumas presented within the empirical paper highlight the commonality of adverse events experienced across all three groups. Within the control group, the self-reported rates of trauma are generally higher than some previously reported rates. For example, Oswald et al. (2014) report lower rates of general, emotional and sexual abuse. Similarly, this study found higher rates than others across all trauma types for the psychosis (e.g. Bohus et al., 2009) and BPD group (Bremner et al 2007). This could be due to bias resulting from self-selecting sampling. It could also indicate that the prevalence of trauma may be higher than originally anticipated.

The results suggest that emotion regulation should be incorporated into conceptualisations of BPD (e.g. Linehan, 1993; Lynch, Trost, Salsman, & Linehan, 2007) and psychotic symptomatologies (e.g. Hardy, 2017). Similarly, attachment is another important variable, although this study highlights that its role may differentiate between

BPD and psychosis symptom development. It is equally possible that trauma influences attachment.

The results from the empirical paper can be taken as further support for the adoption of a continuum model for psychosis (e.g. Baumeister, Sedgwick, Howes, & Peters, 2017; Mørch et al., 2016; Shevlin, McElroy, Bentall, Reininghaus, & Murphy, 2016; van Os & Reininghaus, 2016) in addition to a similar model for BPD. Despite differences being found between the clinical and non-clinical groups, the presence of psychotic and BPD symptoms within the non-clinical population suggest that they fall on a continuum. Given the rates reported within the non-clinical population and the prevalence of BPD and psychotic symptoms across the BPD and psychosis groups, this provides evidence that the experience of psychotic and borderline symptomatology is not unique to the respective diagnosis. Whilst it is important to recognise there may be other variables which make quantitative diagnosable differences in diagnostic symptom presentation, such as the relative stability in presentation and distress associated with psychotic symptoms (Shevlin, Boyda, Houston, & Murphy, 2015), this study demonstrates that despite presenting as different diagnoses, there are commonalities between BPD and psychosis groups, which can both be understood from a similar trauma-focused perspective. These results are in line with prior research within this field which documents some specific similarities and differences between these population groups (e.g. Bahorik & Eack, 2010; Merrett, Rossell, & Castle, 2016; Nicol, Pope, Romaniuk, & Hall, 2015; Ryan, Graham, Nelson, & Yung, 2017; Volavka, 2014) and suggest the need for more transdiagnostic models to be adopted (e.g. Figure 4, chapter 3).

6.5. Research and Clinical Implications

In addition to the specific research and clinical implications outlined within chapters 2 and 4, there are several additional research and clinical implications from this thesis.

Better understanding of the protective and influential factors on the development and maintenance of mental health difficulties is needed. Longitudinally-based research, with large sample sizes, will aid the detection of more specified areas of influence on QoL and the aetiological factors in BPD and Psychotic symptomatology. To help increase the accuracy of conclusions drawn, potential confounding variables should be appropriately addressed. The use of advanced statistical techniques such as latent class growth analysis and growth mixture modelling in longitudinal psychological research will help detect any variables of influence over time (Andruff, Carraro, Thompson, Gaudreau, & Louvet, 2009; Jung & Wickrama, 2008). Finally, research needs to explore more efficacious preventative interventions within this field. Evidenced-based treatments which address the immediate impact of traumas may help prevent future mental health difficulties from developing. Components of such treatments have been summarised using the acronym PRACTICE: psychoeducation and parenting skills, relaxation skills, affect regulation and modulation, cognitive coping skills, trauma narrative, in-vivo exposure, conjoint parent-child sessions, cognitive restructuring, and enhancing future safety (see Dvir et al., 2013).

The complexity of the literature and the results presented by this study exemplifies both the heterogeneity in response to childhood adversities, and the requirement to continually assess an array of influential variables. In accordance with the World Health Organisation (2006) report on preventing child maltreatment, this thesis highlights the need for a systematic multisectoral approach to childhood maltreatment and its impacts. There is the need for an expansion of the evidence base for the preventability of childhood

maltreatment, the true prevalence rates, successful detection, and a better understanding of the consequences.

It is essential that studies within this field are incorporated into clinical practice and wider NHS and societal policies. Widespread trauma-focused psychoeducation and interventions promoting family and societal resilience are likely to be beneficial (Walsh, 2007) alongside evidence-based trauma-informed care when childhood trauma is detected (Kinniburgh, Blaustein, Spinazzola, & Van der Kolk, 2017). Improvements need to be made within mental health care in addition to the multiple secondary service systems (e.g. health, education and social services) to aid the coordination and efficacious implementation of preventative or early-intervention programmes. This is likely to be individually and economically beneficial in comparison to the extensive impact and economic burden of mental health difficulties in adulthood.

Trauma histories are often neglected or actively avoided by clinicians due to understandable barriers such as concern for distress (Read 2007; Read, Os, Morrison, & Ross, 2005). However, there is cumulative evidence suggesting that the advantages of addressing this outweigh the costs (Chu & DePrince, 2013) and given its commonality and known extensive impacts on therapeutic relationships, service engagement and adherence to treatment, trauma-screening and trauma-informed interventions should become routinely available should patients wish to engage with such an approach (Cicchetti & Toth, 2005; Everett & Gallop, 2000; Janssen et al., 2004; Pechtel & Pizzagalli, 2011). Due to the evidenced rarity of spontaneous trauma-disclosure (Everett & Gallop, 2000), standardised assessments of childhood trauma should be adopted (see review by Thabrew, de Sylva, & Romans, 2012).

Finally, interventions aimed at reducing BPD and psychotic symptomatology should seek to incorporate attachment and emotion regulation. For attachment, specific attention to certain interventions and methods, such as a focus on the therapeutic relationship and effective management of boundaries are likely to be beneficial (Atkinson & Goldberg, 2008; Pearlman and Courtois, 2005). For emotion regulation, therapies and techniques which include teaching healthier methods of managing emotions and addressing beliefs that emotions cannot be changed or muted, are likely to reduce symptomatology (Gross, 2014; Vohs and Baumeister, 2016). When delivering psychological therapies, some of the therapeutic components from 'PRACTICE,' such as psychoeducation, relaxation skills, affect regulation and modulation, cognitive coping skills, trauma narrative, in-vivo exposure, cognitive restructuring, and enhancing future safety will probably aid the recovery trajectory. Lastly, the attachment self-regulation and competency framework for youth and families (Kinniburgh et al., 2017) is a promising early intervention structure for managing the immediate impact of trauma in childhood.

6.6. Conclusions

In summary, the findings show that childhood trauma is common and negatively impacts on mental health, specifically BPD and psychotic symptomatology. Attachment and emotion regulation are variables of influence to symptomatology. Coping mechanisms need to be considered in relation to QoL within schizophrenia. Collectively, this thesis adds insight into important mechanisms within stress-vulnerability models of complex mental health difficulties.

Despite the growing research into this field, further longitudinal research is required. Finally, research and funding need to focus on preventative and early-intervention-based programme implementation.

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Appendix

Appendix A

Systematic Review Journal Guidelines and Quality Assessment Tool

Schizophrenia Research and Development (Hindawi)

Journal Title

Concise and Informative Article Title

Firstname M. I. Lastname,[1] Firstname A. Lastname,[2] and Firstname B. Lastname[1,2]

[1] Department, Institute, City ZIP/Post code, Country.
[2] Department, Institute, City ZIP/Post code, Country.

Correspondence should be addressed to Firstname B. Lastname; lastname@institution.edu

Abstract

The abstract should be a single, self-contained paragraph which summarises the manuscript. Ideally it will provide a brief context for the study, before describing the scientific approach and some key results in a qualitative manner. It should finish with a sentence to describe the implications for the field. The abstract must not include references, figures or tables.

Introduction

The introduction should be succinct, with no subheadings. Limited figures may be included only if they are truly introductory, and contain no new results.

Materials and Methods

The materials and methods section should contain sufficient detail so that all procedures can be repeated. It may be divided into headed subsections if several methods are described.

Results and Discussion

Subheadings

The results and discussion may be presented separately, or in one combined section, and may optionally be divided into headed sub-sections.

Advice on Equations

Equations should be provided in a text format, rather than as an image. Microsoft Word's equation tool is acceptable. Equations should be numbered consecutively, in round brackets, on the right-hand side of the page. They should be referred to as Equation 1, etc. in the main text.

$$x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a} \quad (1)$$

Advice on Figures

At the point of submission, authors may provide all figures embedded within the manuscript at a convenient break near to where they are first referenced or, alternatively, they may be provided as separate files. All figures should be cited in the paper in a consecutive

order. Where possible, figures should be displayed on a white background. When preparing figures, consider that they can occupy either a single column (half page width) or two columns (full page width), and should be sized accordingly. All figures must have an accompanying caption which includes a title and, preferably, a brief description (see Figure 1).

Figure 1: Basic rocket ship design. The rocket ship is propelled with three thrusters and features a single viewing window. The nose cone is detachable upon impact.

The caption can also be used to explain any acronyms used in the figure, as well as providing information on scale bar sizes or other information that cannot be included in the figure itself. Plots that show error bars should include in the caption a description of how the error was calculated and the sample size (see Figure 2).

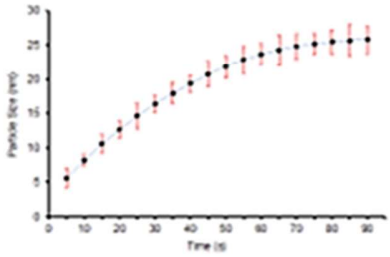

Figure 2: Plot of nanoparticle size with respect to time, recorded over a 90 s period. The error bars represent the standard deviation of measurements for 20 particles in five separate sample runs (n = 100).

If a figure consists of multiple panels, they should be ordered logically and labelled with lower case roman letters (i.e., a, b, c, etc.). If it is necessary to mark individual features within a panel (e.g., in Figure 3a), this may be done with lowercase Roman numerals, i, ii, iii, iv, etc. All labels should be explained in the caption. Panels should not be contained within boxes unless strictly necessary.

Figure 3: Representations of some common weather symbols. (a) The sun with (i) core, and (ii) rays. (b) Thunder bolt. (c) Cloud. (d) Moon.

Upon acceptance, authors will be asked to provide the figures as separate electronic files. At that stage, figures should be supplied in either vector art formats (Illustrator, EPS, WMF, FreeHand, CorelDraw, PowerPoint, Excel, etc.) or bitmap formats (Photoshop, TIFF, GIF, JPEG, etc.). Bitmap images should be of at least 300 dpi resolution, unless due to the limited resolution of a scientific instrument. If a bitmap image has labels, the image and labels should be embedded in separate layers.

Advice on Tables

Every table must have a descriptive title and, if numerical measurements are given, the units should be included in the column heading. Vertical rules should not be used (see Table 1). Tables should be cited consecutively in the text.

Table 1: Temperature and wildlife count in the three areas covered by the study.

Location	T [° C]	Turtles	Sharks	Octopuses	Starfish
Blue Lagoon	21.2	5	3	4	543
Regent's Canal	5.2	8	0	24	312
Shark Bay	12.8	4	7	9	122

Conclusions

The Conclusions section should clearly explain the main findings and implications of the work, highlighting its importance and relevance.

Data Availability

A data availability statement is compulsory for research articles and clinical trials. Here, authors must describe how readers can access the data underlying the findings of the study, giving links to online repositories and providing deposition codes where applicable.

Conflicts of Interest

This section is compulsory. A competing interest exists when professional judgment concerning the validity of research is influenced by a secondary interest, such as financial gain. We require that our authors reveal any possible conflict of interest in their submitted manuscripts. If there is no conflict of interest, authors should state that "The author(s) declare(s) that there is no conflict of interest regarding the publication of this paper."

Funding Statement

Authors should state how the research and publication of their article was funded, by naming financially supporting bodies followed by any associated grant numbers in square brackets.

Acknowledgments

An Acknowledgements section is optional and may recognise those individuals who provided help during the research and preparation of the manuscript.

Supplementary Materials

If Supplementary Materials are provided (e.g., audio files, video clips or datasets) they should be described here. Note that authors are responsible for providing the final Supplementary Materials files that will be published along with the article, which are not modified by our production team. You should remember to reference the Supplementary Materials' contents at appropriate points within the manuscript. We recommend citing specific items, rather than referring to the Supplementary Materials in general, for example: "See Figures S1-S10 in the Supplementary Material for comprehensive image analysis."

References

References will be reformatted in house, there is no need to adhere to a specific style at the point of submission. Authors are responsible for ensuring that the information in each reference is complete and accurate. All citations in the text must be numbered consecutively in square brackets, before any punctuation, for example, "as discussed by Smith [1]," and "as discussed elsewhere [2,3]." All uncited references will be automatically removed. The references should not contain footnotes. For your information, our citation style is:

[x] Author initials and surname, "Title in sentence style," Journal title, vol. (volume number), no. (issue number), pp. (page numbers separated by an en-dash), Year.

For example:

[1] J. D. Watson and F. H. C. Crick, "A structure for deoxyribose nucleic acid," *Nature*, vol. 171, no. 4356, pp. 737–738, 1953.

For articles with six or more authors, the first three authors are listed followed by 'et al.'. When journals use only article numbers, no page numbers are necessary. For example:

[2] B. P. Abbott, R. Abbott, T. D. Abbott et al., "Observation of Gravitational Waves from a Binary Black Hole Merger," *Physical Review Letters*, vol. 116, no. 6, Article ID 061102, 2016.

Quality Assessment Tool

Table 1. Checklist for assessing the quality of quantitative studies

Criteria		YES (2)	PARTIAL (1)	NO (0)	N/A
1	Question / objective sufficiently described?				
2	Study design evident and appropriate?				
3	Method of subject/comparison group selection or source of information/input variables described and appropriate?				
4	Subject (and comparison group, if applicable) characteristics sufficiently described?				
5	If interventional and random allocation was possible, was it described?				
6	If interventional and blinding of investigators was possible, was it reported?				
7	If interventional and blinding of subjects was possible, was it reported?				
8	Outcome and (if applicable) exposure measure(s) well defined and robust to measurement / misclassification bias? Means of assessment reported?				
9	Sample size appropriate?				
10	Analytic methods described/justified and appropriate?				
11	Some estimate of variance is reported for the main results?				
12	Controlled for confounding?				
13	Results reported in sufficient detail?				
14	Conclusions supported by the results?				

Appendix B

Details on Joint Working

The Research Team:

Primary Researcher
Cat George
Supervisors
Dr Joanne Hodgekins (primary)
Dr Sian Coker (secondary)
Secondary Researcher
Desire Furnes who collected data, and through utilising additional measures, researched alternative questions.
Key Collaborator
Dr Liam Gillighan who aided data collection.

This study was jointly with Desire Furnes (trainee clinical psychologist). Dr Liam Gillighan (Clinical Psychologist) was also involved in data collection. We recruited the clinical participants from two NHS foundation trusts and therefore combined efforts into a single project. The single research project enabled us to have separate research questions and aims but enabled us to focus recruitment efforts in different geographical areas around East Anglia. Data collection for both projects were combined and the ethics application, study documents and other research tasks were evenly split. The research presented here utilised data from the trauma screen, the attachment measure, the emotion regulation measure and the demographic information sheet. Desire incorporated the trauma screen, the demographic information sheet, the 6-Item Post Traumatic Stress Disorder Checklist – Civilian Form (PCL-C; Weathers, Litz, Huska & Keane, 1993), the Post-Traumatic

Cognitions Inventory (PTCI; Foa Ehlers, Clark, Tolin, & Orsillo, 1999) and the Dissociative Experience Scale-II (DES-II; Carlson & Putnam, 1993) to answer the parallel thesis project aim and are therefore not detailed within this thesis.

Throughout we have ensured an equal workload which has been supervised by our research supervisors.

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Appendix C

Journal Guidelines for Empirical Paper

Journal of Clinical Psychology

Edited By: Timothy R. Elliott (Editor) and Barry A. Farber (In Session)
Impact Factor: 2.123
ISI Journal Citation Reports © Ranking: 2016: 50/121 (Psychology Clinical)
Online ISSN: 1097-4679

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Author Guidelines

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2. Go to the URL http://mc.manuscriptcentral.com/jclp
3. Register (if you have not done so already).
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7. All related files will be concatenated automatically into a single .PDF file by the system during upload. This is the file that will be used for review. Please scan your files for viruses before you send them, and keep a copy of what you send in a safe place in case any of the files need to be replaced.

Timothy R. Elliott, Editor-in-Chief
The Journal of Clinical Psychology
4225 TAMU
Texas A&M University

Manuscript Preparation

Format . Number all pages of the manuscript sequentially. Manuscripts should contain each of the following elements in sequence: 1) Title page 2) Abstract 3) Text 4) Acknowledgments 5) References 6) Tables 7) Figures 8) Figure Legends 9) Permissions. Start each element on a new page. Because the ***Journal of Clinical Psychology*** utilizes an anonymous peer-review process, authors' names and affiliations should appear ONLY on the title page of the manuscript. Please submit the title page as a separate document within the attachment to facilitate the anonymous peer review process.

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Abstract. Abstracts are required for research articles, review articles, commentaries, and notes from the field. A structured abstract is required and should be 150 words or less. The headings that are required are:
Objective(s): Succinctly state the reason, aims or hypotheses of the study.
Method (or Design): Describe the sample (including size, gender and average age), setting, and research design of the study.
Results: Succinctly report the results that pertain to the expressed objective(s).
Conclusions: State the important conclusions and implications of the findings.

In addition, for systematic reviews and meta-analyses the following headings can be used, Context; Objective; Methods (data sources, data extraction); Results; Conclusion. For Clinical reviews: Context; Methods (evidence acquisition); Results (evidence synthesis); Conclusion.

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Article Types

- **Research Articles** . Research articles may include quantitative or qualitative investigations, or single-case research. They should contain Introduction, Methods, Results, Discussion, and Conclusion sections conforming to standard scientific reporting style (where appropriate, Results and Discussion may be combined).
- **Review Articles** . Review articles should focus on the clinical implications of theoretical perspectives, diagnostic approaches, or innovative strategies for assessment or treatment. Articles should provide a critical review and interpretation of the literature. Although subdivisions (e.g., introduction, methods, results) are not required, the text should flow smoothly, and be divided logically by topical headings.
- **Commentaries** . Occasionally, the editor will invite one or more individuals to write a commentary on a research report.
- **Editorials** . Unsolicited editorials are also considered for publication.
- **Notes From the Field** . Notes From the Field offers a forum for brief descriptions of advances in clinical training; innovative treatment methods or community based initiatives; developments in service delivery; or the presentation of data from research projects which have progressed to a point where preliminary observations should be disseminated (e.g., pilot studies, significant findings in need of replication). Articles submitted for this section should be limited to a maximum of 10 manuscript pages, and contain logical topical subheadings.
- **News and Notes** . This section offers a vehicle for readers to stay abreast of major awards, grants, training initiatives; research projects; and conferences in clinical psychology. Items for this section should be summarized in 200 words or less. The Editors reserve the right to determine which News and Notes submissions are appropriate for inclusion in the journal.

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Appendix D

Eligibility and Diagnostic Checklists

Clinical Group Eligibility and Diagnostic Checklist

Eligibility and Diagnostic Checklist — University of East Anglia — Version 1, September 2016

Exploring the impact of trauma and developmental factors in individuals with mental health difficulties

Eligibility and Diagnostic Checklist

To be completed with guidance from care team and/or clinical records.

Name of researcher/ lead health care professional: _____

Service User Trust Non Identifiable Number: _____

	YES	NO
Under the care of mental health NHS teams.		
Age 18-65 years, inclusive		
Fluent in written and spoken English language		
Criteria met for Borderline Personality Disorder *and* no secondary diagnosis of a Psychotic Disorder **OR** criteria met for a Psychotic Disorder *and* no secondary diagnosis of Borderline Personality Disorder as assessed by the clinical team.		
Ability to understand and willing to give written informed consent		
No cognitive or language difficulties that prevent providing informed consent or compromise participation in completing study questionnaires		
No current serious suicidal or violence risk		
Substance use that is considered severe enough to impact on a person's ability to give informed consent and participate in the study		

I confirm that they meet the above criteria for inclusion to this study.

Name: _____

Signature: _____ **Date:** ___/___/_____

Control Group Eligibility and Diagnostic Checklist

Eligibility and Diagnostic Checklist

Version 1, September 2016

Exploring the impact of trauma and developmental factors in individuals with mental health difficulties

Eligibility and Diagnostic Checklist – Online Template

To be completed online by the potential participant before being able to take part in the online survey.

Question in the screening survey	**Response Option**	
Are you currently or have you ever been under the care of mental health NHS teams?	YES	NO
Are you aged between 18 and 65 years?	YES	NO
Are you fluent in written and spoken English language?	YES	NO
Have you ever been diagnosed with a mental health disorder?	YES	NO
Do you currently have any thoughts or plans about hurting yourself or ending your life?	YES	NO

Appendix E

Ethical Approval Documentation

NHS
Health Research Authority

Miss Catherine George
Trainee Clinical Psychologist
Cambridgeshire and Peterborough NHS Foundation Trust
Norwich Medical School
Faculty of Medicine and Health Sciences
University of East Anglia, Norwich
NR4 7TJ

Email: hra.approval@nhs.net

31 May 2017

Dear Miss George

Letter of HRA Approval

Study title:	**Exploring the Impact of Trauma and the Role of Attachment, Emotion Regulation, Post-Traumatic Stress Disorder, Trauma-Induced Cognitions and Dissociation in Individuals with Mental Health Difficulties**
IRAS project ID:	**213333**
REC reference:	**17/EE/0179**
Sponsor	**University of East Anglia**

I am pleased to confirm that HRA Approval has been given for the above referenced study, on the basis described in the application form, protocol, supporting documentation and any clarifications noted in this letter.

Participation of NHS Organisations in England

The sponsor should now provide a copy of this letter to all participating NHS organisations in England.

Appendix B provides important information for sponsors and participating NHS organisations in England for arranging and confirming capacity and capability. **Please read *Appendix B* carefully**, in particular the following sections:

- *Participating NHS organisations in England* – this clarifies the types of participating organisations in the study and whether or not all organisations will be undertaking the same activities
- *Confirmation of capacity and capability* - this confirms whether or not each type of participating NHS organisation in England is expected to give formal confirmation of capacity and capability. Where formal confirmation is not expected, the section also provides details on the time limit given to participating organisations to opt out of the study, or request additional time, before their participation is assumed.
- *Allocation of responsibilities and rights are agreed and documented (4.1 of HRA assessment criteria)* - this provides detail on the form of agreement to be used in the study to confirm capacity and capability, where applicable.

IRAS project ID	213333

Further information on funding, HR processes, and compliance with HRA criteria and standards is also provided.

It is critical that you involve both the research management function (e.g. R&D office) supporting each organisation and the local research team (where there is one) in setting up your study. Contact details and further information about working with the research management function for each organisation can be accessed from www.hra.nhs.uk/hra-approval.

Appendices

The HRA Approval letter contains the following appendices:

- A – List of documents reviewed during HRA assessment
- B – Summary of HRA assessment

After HRA Approval

The document "*After Ethical Review – guidance for sponsors and investigators*", issued with your REC favourable opinion, gives detailed guidance on reporting expectations for studies, including:

- Registration of research
- Notifying amendments
- Notifying the end of the study

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

In addition to the guidance in the above, please note the following:

- HRA Approval applies for the duration of your REC favourable opinion, unless otherwise notified in writing by the HRA.
- Substantial amendments should be submitted directly to the Research Ethics Committee, as detailed in the *After Ethical Review* document. Non-substantial amendments should be submitted for review by the HRA using the form provided on the HRA website, and emailed to hra.amendments@nhs.net.
- The HRA will categorise amendments (substantial and non-substantial) and issue confirmation of continued HRA Approval. Further details can be found on the HRA website.

Scope

HRA Approval provides an approval for research involving patients or staff in NHS organisations in England.

If your study involves NHS organisations in other countries in the UK, please contact the relevant national coordinating functions for support and advice. Further information can be found at http://www.hra.nhs.uk/resources/applying-for-reviews/nhs-hsc-rd-review/.

If there are participating non-NHS organisations, local agreement should be obtained in accordance with the procedures of the local participating non-NHS organisation.

IRAS project ID	213333

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

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

Your IRAS project ID is **213333**. Please quote this on all correspondence.

Yours sincerely

Simon Connolly
Senior Assessor

Email: hra.approval@nhs.net

Copy to: *Ms Tracy Moulton, University of East Anglia*
Dr Bonnie Teague, Norfolk and Suffolk NHS Foundation Trust

IRAS project ID	215555

Appendix A - List of Documents

The final document set assessed and approved by HRA Approval is listed below.

Document	Version	Date
Copies of advertisement materials for research participants [PosterBPD]	1	01 September 2016
Copies of advertisement materials for research participants [PosterPsychosis]	1	01 September 2016
Copies of advertisement materials for research participants [PosterOnline-NonClinical]	1	01 September 2016
Evidence of Sponsor insurance or indemnity (non NHS Sponsors only) [II_letter_04.04.17]	1	04 April 2017
GP/consultant information sheets or letters [ClinicianInformationSheet]	1	01 September 2016
GP/consultant information sheets or letters [ClinicianInformationLetter]	1	01 September 2016
IRAS Application Form [IRAS_Form_11042017]		11 April 2017
Letter from sponsor [II_letter_04.04.17]	1	04 April 2017
Non-validated questionnaire [DemographicInformationSheet]	1	01 September 2016
Other [ResearchCV_LiamGillian (collaborator)]	1	01 February 2017
Other [ResearchCV_MichellePainter (collaborator)]	1	01 February 2017
Other [ResearchCV_DeirdreWilliams (collaborator)]	1	01 February 2017
Other [ClinicalNoteTemplate]	1	01 September 2016
Other [Eligibility&DiagnosticChecklist-Clinical]	1	01 September 2016
Other [Eligibility&DiagnosticChecklistOnline-NonClinical]	1	01 September 2016
Other [SelfReferralTelephoneScript]	1	01 February 2017
Other [Screening&EnrolmentLog]	1	01 February 2017
Other [RiskManagementProtocol]	1	01 September 2016
Other [PrizeDrawAndPublicationSheet]	1	01 September 2016
Other [InspireFeedback]	1	01 September 2016
Other [SummaryOfChangesInspireFeedback]	1	01 September 2016
Other [Statement of activities]		
Other [Schedule of events]		
Other [AftercareSheet_ClinicalCommunity]	2 Highlighted	12 May 2017
Other [AftercareSheet_ClinicalInpatient]	2 Highlighted	12 May 2017
Other [AftercareSheet_NonClinical]	2 Highlighted	12 May 2017
Other [Precare Sheet_NonClinical]	1	12 May 2017
Other [Response to Ethics Committee Feedback]	1	12 May 2017
Participant consent form [ConsentForm_Clinical]	1	01 February 2017
Participant consent form [ConsentFormOnline-NonClinical]	1	01 February 2017
Participant information sheet (PIS) [ParticipantInformationSheet-Clinical]	2 Highlighted	12 May 2017
Participant information sheet (PIS) [Participant Information Sheet - NonClinical]	2 Highlighted	12 May 2017
Research protocol or project proposal [ThesisProtocol]	1	01 March 2017
Summary CV for Chief Investigator (CI) [ResearchCV_CatherineGeorge]	1	01 February 2017

IRAS project ID	213333

Summary CV for student [ResearchCV_DesireFurnes]	1	01 February 2017
Summary CV for supervisor (student research) [ResearchCV_SianCoker]	1	01 February 2017
Summary CV for supervisor (student research) [ResearchCV_JoanneHodgekins]	1	01 February 2017
Summary, synopsis or diagram (flowchart) of protocol in non technical language [OnlineProcedureTemplate-NonClinical]	1	01 September 2016
Summary, synopsis or diagram (flowchart) of protocol in non technical language [DiagrammaticPresentationOfProcedure]	1	01 September 2016
Validated questionnaire [BorderlineSymptomList-23]	1	01 September 2016
Validated questionnaire [DifficultiesInEmotionRegulationScale]	1	01 September 2016
Validated questionnaire [DissociativeExperiencesScale-II]	1	01 September 2016
Validated questionnaire [EarlyTraumaInventorySelfReport-ShortForm]	1	01 September 2016
Validated questionnaire [PsychosisAttachmentMeasure]	1	01 September 2016
Validated questionnaire [PTSDchecklistCivilianForm-ShortForm]	1	01 September 2016
Validated questionnaire [PostTraumaticCognitionsInventory]	1	01 September 2016
Validated questionnaire [SchizotypalSymptomsInventory-BriefVersion]	1	01 September 2016

IRAS project ID	213333

Appendix B - Summary of HRA Assessment

This appendix provides assurance to you, the sponsor and the NHS in England that the study, as reviewed for HRA Approval, is compliant with relevant standards. It also provides information and clarification, where appropriate, to participating NHS organisations in England to assist in assessing and arranging capacity and capability.

For information on how the sponsor should be working with participating NHS organisations in England, please refer to the *participating NHS organisations, capacity and capability* and *Allocation of responsibilities and rights are agreed and documented (4.1 of HRA assessment criteria)* sections in this appendix.

The following person is the sponsor contact for the purpose of addressing participating organisation questions relating to the study:

Name: Tracy Moulton
Email: Researchsponsor@uea.ac.uk

HRA assessment criteria

Section	HRA Assessment Criteria	Compliant with Standards	Comments
1.1	IRAS application completed correctly	Yes	No comments
2.1	Participant information/consent documents and consent process	Yes	Requested by assessor that IRAS number be added to the information sheets and consent forms.
3.1	Protocol assessment	Yes	No comments
4.1	Allocation of responsibilities and rights are agreed and documented	Yes	Statement of activities will form agreement between sponsor and participating NHS organisations.
4.2	Insurance/indemnity arrangements assessed	Yes	Where applicable, independent contractors (e.g. General Practitioners) should ensure that the professional indemnity provided by their medical defence organisation covers the activities expected of them for this research study
4.3	Financial arrangements assessed	Yes	No external funding application made for this doctorate study.

IRAS project ID	213333

Section	HRA Assessment Criteria	Compliant with Standards	Comments
5.1	Compliance with the Data Protection Act and data security issues assessed	Yes	No comments
5.2	CTIMPS – Arrangements for compliance with the Clinical Trials Regulations assessed	Not Applicable	
5.3	Compliance with any applicable laws or regulations	Yes	No comments
6.1	NHS Research Ethics Committee favourable opinion received for applicable studies	Yes	No comments
6.2	CTIMPS – Clinical Trials Authorisation (CTA) letter received	Not Applicable	
6.3	Devices – MHRA notice of no objection received	Not Applicable	
6.4	Other regulatory approvals and authorisations received	Not Applicable	

Participating NHS Organisations in England

This provides detail on the types of participating NHS organisations in the study and a statement as to whether the activities at all organisations are the same or different.
At participating NHS organisations potential participants will be approached with information about the study. The researchers may also use NHS facilities for the study appointments. The Chief Investigator or sponsor should share relevant study documents with participating NHS organisations in England in order to put arrangements in place to deliver the study. The documents should be sent to both the local study team, where applicable, and the office providing the research management function at the participating organisation. For NIHR CRN Portfolio studies, the Local LCRN contact should also be copied into this correspondence. For further guidance on working with participating NHS organisations please see the HRA website. If chief investigators, sponsors or principal investigators are asked to complete site level forms for participating NHS organisations in England which are not provided in IRAS or on the HRA website, the chief investigator, sponsor or principal investigator should notify the HRA immediately at hra.approval@nhs.net. The HRA will work with these organisations to achieve a consistent approach to information provision.

IRAS project ID	213333

Confirmation of Capacity and Capability

This describes whether formal confirmation of capacity and capability is expected from participating NHS organisations in England.

Participating NHS organisations in England **will be expected to formally confirm their capacity and capability to host this research**.

- Following issue of this letter, participating NHS organisations in England may now confirm to the sponsor their capacity and capability to host this research, when ready to do so. How capacity and capacity will be confirmed is detailed in the *Allocation of responsibilities and rights are agreed and documented (4.1 of HRA assessment criteria)* section of this appendix.
- The Assessing, Arranging, and Confirming document on the HRA website provides further information for the sponsor and NHS organisations on assessing, arranging and confirming capacity and capability.

Principal Investigator Suitability

This confirms whether the sponsor position on whether a PI, LC or neither should be in place is correct for each type of participating NHS organisation in England and the minimum expectations for education, training and experience that PIs should meet (where applicable).

The researchers will be responsible for conducting all research activities under academic supervision. A local collaborator may be required from NHS trusts to arrange access to NHS facilities for researchers and support conduct of study.

GCP training is not a generic training expectation, in line with the HRA statement on training expectations.

HR Good Practice Resource Pack Expectations

This confirms the HR Good Practice Resource Pack expectations for the study and the pre-engagement checks that should and should not be undertaken

Where existing arrangements are not in place university researchers will require a letter of access to complete research activities within NHS organisations. It will need to be confirmed that appropriate DBS checks and occupational health checks have taken place.

Other Information to Aid Study Set-up

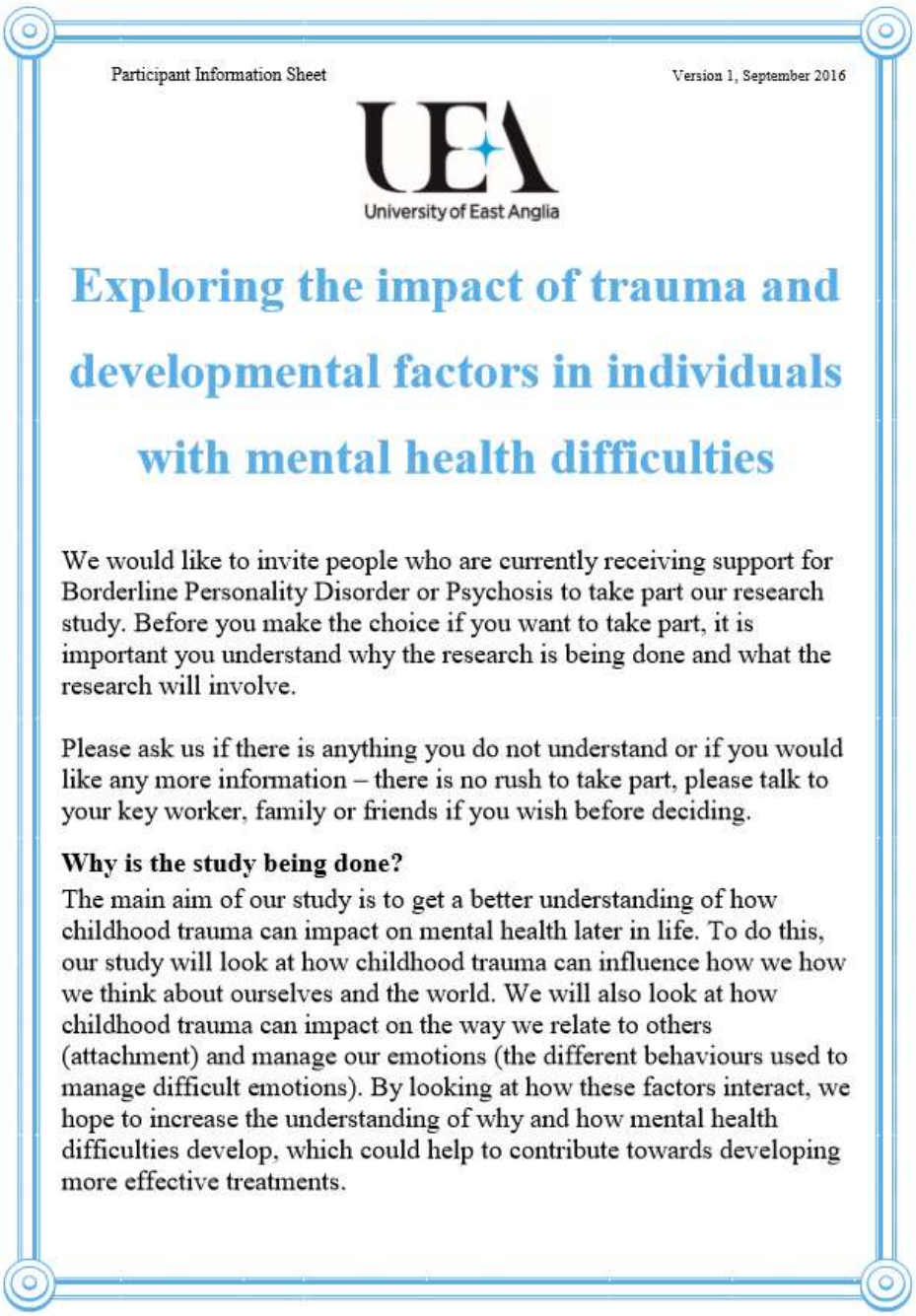
This details any other information that may be helpful to sponsors and participating NHS organisations in England to aid study set-up.

- The applicant has indicated that they do not intend to apply for inclusion on the NIHR CRN Portfolio.

Appendix F

Participant Information Sheets

Clinical Participant Information Sheet



Participant Information Sheet Version 1, September 2016

University of East Anglia

Exploring the impact of trauma and developmental factors in individuals with mental health difficulties

We would like to invite people who are currently receiving support for Borderline Personality Disorder or Psychosis to take part our research study. Before you make the choice if you want to take part, it is important you understand why the research is being done and what the research will involve.

Please ask us if there is anything you do not understand or if you would like any more information – there is no rush to take part, please talk to your key worker, family or friends if you wish before deciding.

Why is the study being done?

The main aim of our study is to get a better understanding of how childhood trauma can impact on mental health later in life. To do this, our study will look at how childhood trauma can influence how we how we think about ourselves and the world. We will also look at how childhood trauma can impact on the way we relate to others (attachment) and manage our emotions (the different behaviours used to manage difficult emotions). By looking at how these factors interact, we hope to increase the understanding of why and how mental health difficulties develop, which could help to contribute towards developing more effective treatments.

Participant Information Sheet Version 1, September 2016

Why have I been invited to take part?

We are inviting people to participate who are receiving NHS mental health care support for Psychosis or Borderline Personality Disorder. Your clinical team think you may be interested in taking part and have agreed for us to approach you.

Our project aims to recruit a total of 120 individuals over an 18 months period. This will include 40 individuals who are not receiving NHS mental health support and 80 individuals who are receiving NHS mental health support, in which 40 participants present with Psychosis and 40 present with Borderline Personality Disorder.

Do I have to take part? What happens if I change my mind?

No, taking part in this study is completely voluntary. If you do not wish to take part please tell the researcher. There will be no judgement or hard feelings from anyone and it will not affect the care that you receive now or in the future in any way. If you decide you would like to take part you are free to withdraw at any time and you do not have to give any reason.

What will I have to do if I take part?

If you do decide to take part the researcher will confirm that you understand the information in this leaflet and if you wish to continue, you will be asked to sign a consent form. The study will involve you completing a series of questionnaires. The questionnaires will ask you about your current mental health, possible childhood trauma, thoughts you may currently have, views on close relationships, and your experience and management of emotions.

The study questionnaires will be completed at your own pace and can be carried out in one go or over a few meetings. Taking part will take no longer than two hours in total and we will always try to make appointments at times and locations that suit you. The study will take place in a private room or where you feel most comfortable and we will be present until you have completed all questionnaires should you have any questions.

What are the possible disadvantages and risks of taking part?

All study questionnaires have been used on a large number of people in the UK and the world and it is key that people find them acceptable. Even so, the questions could cause someone to become upset. You do not have to answer questions you do not want to and you can stop filling in the questionnaires at any time.

A researcher will be present throughout and will provide advice and support if you become distressed. At any point if you or the researcher feel that you are in immediate danger to yourself or others they will assist you to immediately attend the local hospital A&E department. If you feel very distressed following taking part we advise you to speak to professionals involved in your care and seek medical advice where required. If you feel very distressed during out of hours, we suggest you use the out of hour's contact that we will give to you.

What are the possible benefits?

You may not benefit directly from taking part in the study. The results from this study will hopefully increase our understanding of how childhood trauma is linked to mental health difficulties later in life. Hopefully, this can contribute towards better care for individuals presenting with Borderline Personality Disorder and Psychosis.

What about expenses?

Although we cannot pay for your time or travel expenses, you will be invited to enter into a prize draw to receive one of four £20 amazon vouchers as a thank you for taking part in this research.

Will my taking part in the study be kept confidential?

All information collected about you during the course of the research will be kept strictly confidential and all identifiable information (your name and address) will be removed from the data. Throughout we will follow ethical and legal practice including upholding the Data Protection Act of 1998 regarding data collection, storage and destruction.

As you are receiving support from a mental health NHS Trust, a general letter will be sent to your clinical team to let them know you have participated in the study. A copy of your consent form and a copy of this leaflet will be copied into your medical notes. Unless there is information suggesting risk of harm to you or others, or unless you specifically request that we inform your care team of any specific information you have given, all the information collected in this study will not be exchanged with any other organisations or your General Practitioner (GP) without your consent.

What happens to my information after the study is completed?

You have the right to withdraw your information collected in the study questionnaires any time before the data is analysed, which will be around December 2017. When the study is completed, the data from the study will be kept for 10 years after the last publication, in accordance with the University of East Anglia's policy on storage of personal data. The study will also comply with any specific guidance provided by your NHS trust. Consent forms will be retained as essential documents, but items such as contact details will be destroyed in accordance with appropriate policies as soon as they are no longer needed.

What will happen to the results of the research study?

The study will be written up as partial fulfilment of a Doctorate in Clinical Psychology at the University of East Anglia and is planned to be completed in 18 months. The research findings will be submitted to a relevant scientific journal and if you are interested, we will feed back the overall study results to you at the end of this time period.

What if there is a problem?

If you have concerns about any aspect of this study, you should ask to speak to the researcher who will do their best to answer your questions (see contact number below). If they are unable to resolve your concern or you wish to make a formal complaint, you can contact Programme Director Professor Kenneth Laidlaw on K.Laidlaw@uea.ac.uk.

In the event that something does go wrong and you are harmed during the study due to negligence, then you may have legal grounds for action against The University of East Anglia, who are the sponsors of this research, however, you may have to pay your legal costs.

The University of East Anglia has cover for no fault compensation for bodily injury, mental injury or death where the injury resulted from a trial or procedure you received as part of the trial. This would be subject to policy terms and conditions. Any payment would be without legal commitment. (Please ask if you want more information).

Who is organising and funding the research?

All study expenses come from a budget available via the Department of Clinical Psychology within the University of East Anglia.

Who has reviewed the study?

All NHS based studies are checked by an independent group of people called a Research Ethics Committee. The Research Ethics Committee is devoted to protect your safety, rights, wellbeing and dignity. The study protocol has been reviewed and given a favourable opinion from the NHS ethics committee (*reference no.*) and a research sub-committee from the Department of Clinical Psychology within the University of East Anglia (*reference no.*).

Contact for further information

If you would like further information about the study please contact:

Researchers: **Cat George & Desire Furnes**
Telephone: ***Study mobile number(s) inserted here***
Email: **study email inserted here@nhs.net**

Thank you for considering taking part in this research.

Please take the time to carefully consider the information given and discuss with your family, friends or mental health team if you wish.

Patient Information Leaflet - Non-clinical population Online Version

Participant Information Sheet Version 1, September 2016

University of East Anglia

Exploring the impact of trauma and developmental factors in individuals with mental health difficulties

We would like to invite people who are not currently or have you ever been under the care of mental health NHS teams to take part our research study. Before you make the choice if you want to take part, it is important you understand why the research is being done and what the research will involve.

Please ask us if there is anything you do not understand or if you would like any more information – there is no rush to take part, please talk to your family or friends if you wish before deciding.

Why is the study being done?

The main aim of our study is to get a better understanding of how childhood trauma can impact on mental health later in life. To do this, our study will look at how childhood trauma can influence how we how we think about ourselves and the world. We will also look at how childhood trauma can impact on the way we relate to others (attachment) and manage our emotions (the different behaviours used to manage difficult emotions). By looking at how these factors interact, we hope to increase the understanding of why and how mental health difficulties develop, which could help to contribute towards developing more effective treatments.

Why have I been invited to take part?

We are inviting people to participate who are not currently, and have never received NHS mental health support. This will enable us to compare information collected from individuals receiving NHS support for Psychosis and Borderline Personality Disorder.

Our project aims to recruit a total of 120 individuals over an 18 months period. This will include 40 individuals who are not receiving NHS mental health support and 80 individuals who are receiving NHS mental health support, in which 40 participants present with Psychosis and 40 present with Borderline Personality Disorder

Do I have to take part? What happens if I change my mind?

No, taking part in this study is completely voluntary. If you do not wish to take part please tell the researcher. There will be no judgement or hard feelings from anyone. If you decide you would like to take part you are free to withdraw at any time and you do not have to give any reason.

What will I have to do if I take part?

The study involves completing a series of questionnaires on the internet. Therefore if you do decide to take part, you will need to have access to a device which can access the internet. You will be asked fill in a series of questions which will confirm that you understand the information in this leaflet and if you wish to continue, you will be asked to confirm that you consent to take part in the study.
The study will involve you completing a series of questionnaires online. The questionnaires will ask you about your current mental health, possible childhood trauma, thoughts you may currently have, views on close relationships, and your experience and management of emotions. The study questionnaires will be completed at your own pace and can be carried out in session or over a few sessions. Taking part will take no longer than two hours in total. The study will take place in where you are able to access the online questionnaires. When you have completed all questionnaires there is an opportunity to email the research team with any questions you may have about the study.

What are the possible disadvantages and risks of taking part?

All study questionnaires have been used on a large number of people in the UK and the world and it is key that people find them acceptable. Even so, the questions could cause someone to become upset. You do not have to answer questions you do not want to and you can stop filling in the questionnaires at any time.

If you are feeling very distressed as a result of taking part in the study we strongly advise you seek medical advice, such as visiting your General Practitioner (GP). If you feel that you are in immediate danger to yourself or others, please immediately attend the local hospital A&E department. Contact numbers for organisations you can contact for support will be provided to you after you have completed the questionnaires. You can request this information is also sent to you by email.

What are the possible benefits?

You may not benefit directly from taking part in the study. The results from this study will hopefully increase our understanding of how childhood trauma is linked to mental health difficulties later in life. Hopefully, this can contribute towards better care for individuals presenting with Borderline Personality Disorder and Psychosis.

What about expenses?

Although we cannot pay for your time, internet access or travel expenses, you will be invited to enter into a prize draw to receive one of four £20 amazon vouchers as a thank you for taking part in this research.

Will my taking part in the study be kept confidential?

All information collected about you during the course of the research will be kept strictly confidential and all identifiable information (your name and address) will be removed from the data. Throughout we will follow ethical and legal practice including upholding the Data Protection Act of 1998 regarding data collection, storage and destruction.

Your decision to participate and all the information collected in this study will not be exchanged with any other organisations or your GP.

What happens to my information after the study is completed?

You have the right to withdraw your information collected in the study questionnaires any time before the data is analysed, which will be around December 2017. When the study is completed, the data from the study will be kept for 10 years after the last publication, in accordance with the University of East Anglia's policy on storage of personal data. The study will also comply with any specific guidance provided by your NHS trust. Consent forms will be retained as essential documents, but items such as contact details will be destroyed in accordance with appropriate policies as soon as they are no longer needed.

What will happen to the results of the research study?

The study will be written up as partial fulfilment of a Doctorate in Clinical Psychology at the University of East Anglia and is planned to be completed in 18 months. The research findings will be submitted to a relevant scientific journal and if you are interested, we will feed back the overall study results to you at the end of this time period.

What if there is a problem?

If you have concerns about any aspect of this study, you should ask to speak to the researcher who will do their best to answer your questions (see contact details below). If they are unable to resolve your concern or you wish to make a formal complaint, you can contact Programme Director Professor Kenneth Laidlaw on K.Laidlaw@uea.ac.uk.

In the event that something does go wrong and you are harmed during the study due to negligence, then you may have legal grounds for action against The University of East Anglia, who are the sponsors of this research, however, you may have to pay your legal costs.

The University of East Anglia has cover for no fault compensation for bodily injury, mental injury or death where the injury resulted from a trial or procedure you received as part of the trial. This would be subject to policy terms and conditions. Any payment would be without legal commitment. (Please ask if you want more information).

Who is organising and funding the research?

All study expenses come from a budget available via the Department of Clinical Psychology within the University of East Anglia.

Who has reviewed the study?

All NHS based studies are checked by an independent group of people called a Research Ethics Committee. The Research Ethics Committee is devoted to protect your safety, rights, wellbeing and dignity. The study protocol has been reviewed and given a favourable opinion from the NHS ethics committee (*reference no.*) and a research sub-committee from the Department of Clinical Psychology within the University of East Anglia (*reference no.*).

Contact for further information

If you would like further information about the study please contact:

Researchers: **Cat George & Desire Furnes**
Telephone: ***Study mobile number(s) inserted here***
Email: **study email inserted here@nhs.net**

Thank you for considering taking part in this research.

Please take the time to carefully consider the information given and discuss with your family and friends if you wish.

Appendix G

Screening and Enrolment Log

Screening and Enrolment Log Version 1, February 2017

Exploring the impact of trauma and developmental factors in individuals with mental health difficulties

Screening and Enrolment Log

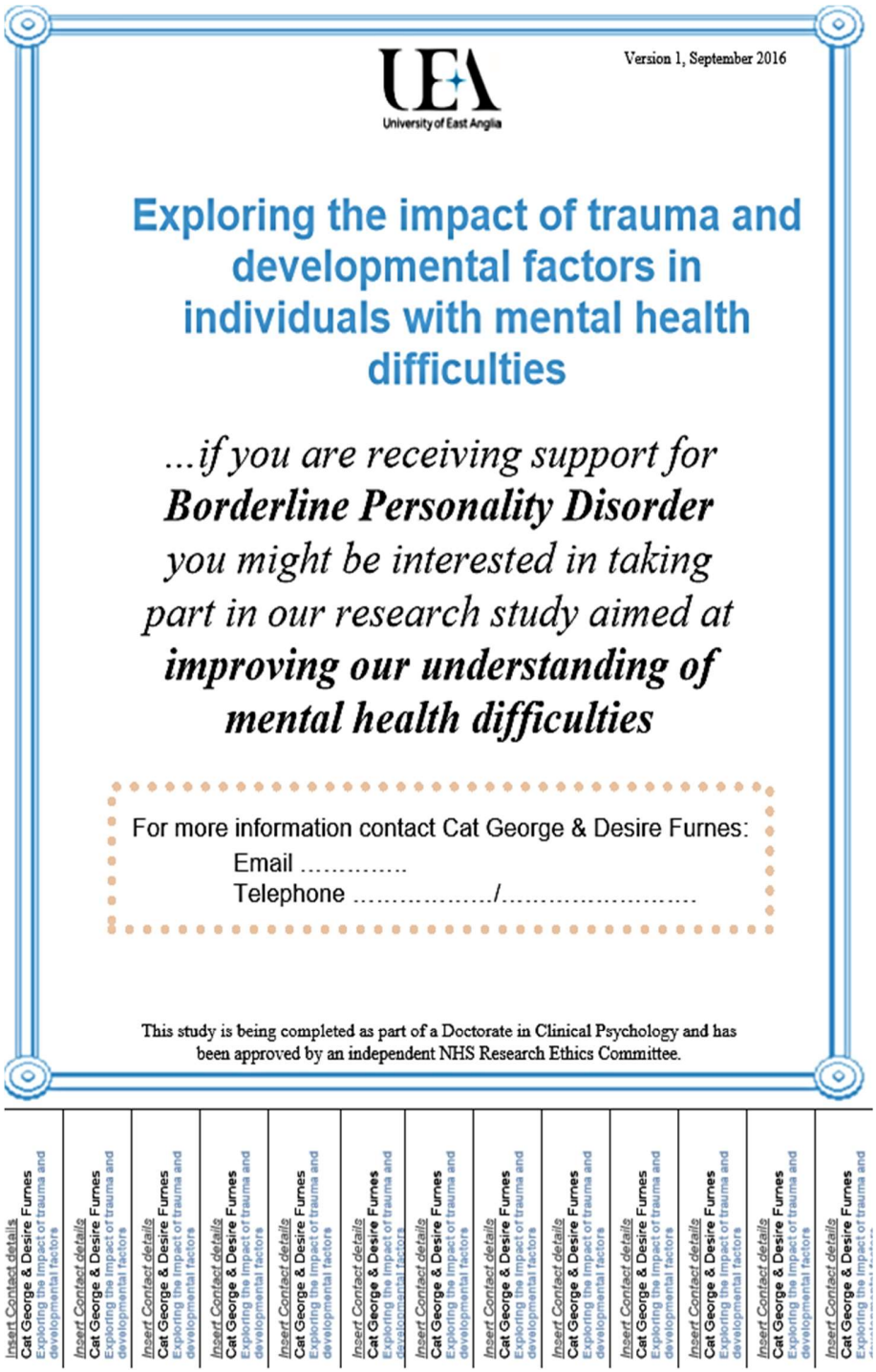
Study non-identifiable ID	Method of Contact	Date of Contact (xx/xx/xx)	Consent to contact Date (xx/xx/xx)	Method of receiving PIS	Date PIS given (xx/xx/xx)	Eligibility criteria met (YES / NO)	Informed Consent (xx/xx/xx)	Notes If refused or excluded, please give details

Name of Trust: CPFT / NSFT Page ___ of ____

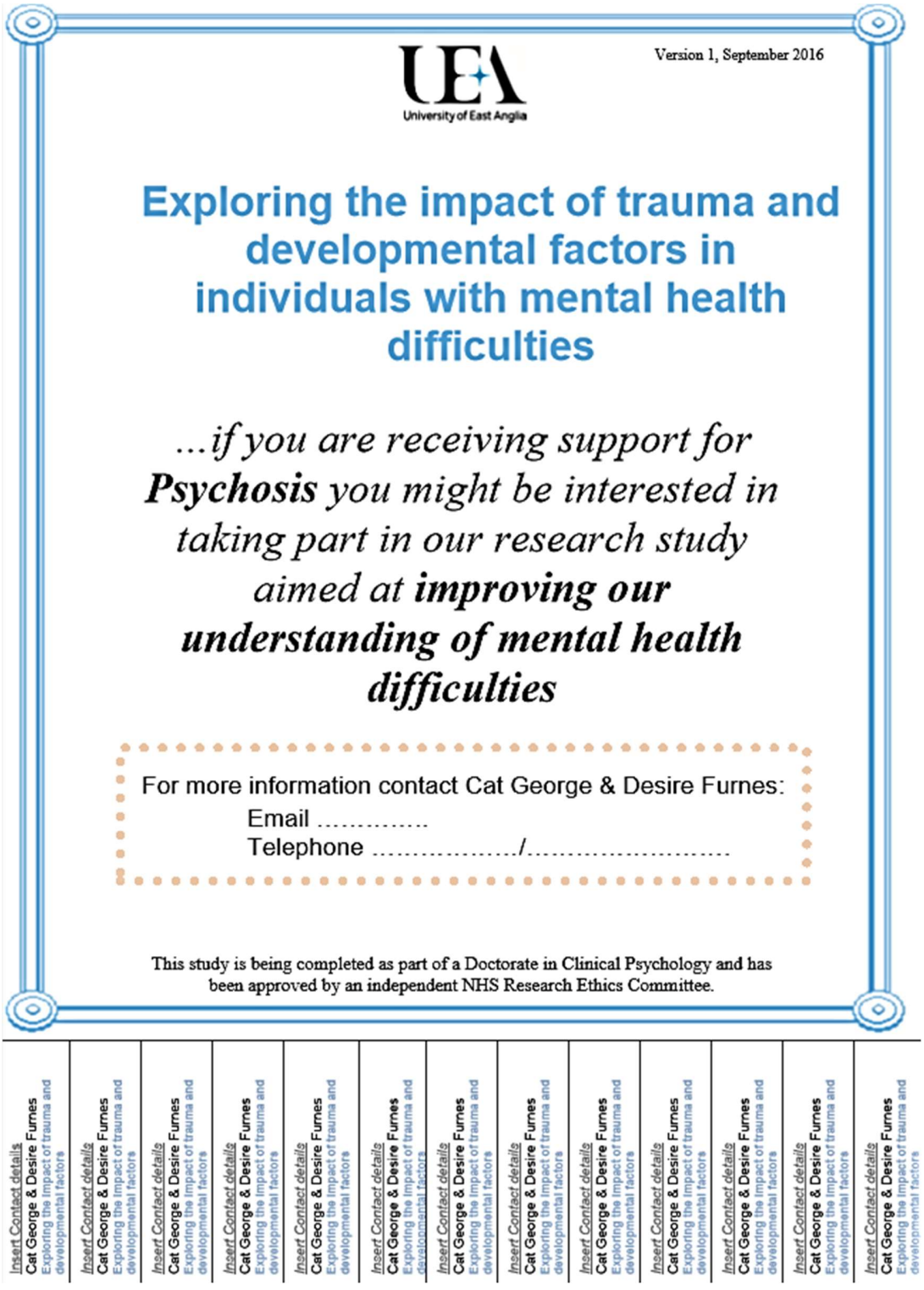
Appendix H

Recruitment posters

Poster for Borderline Personality Disorder



Poster for Psychosis



Appendix I

Telephone Self-Referrals Guidance

Telephone Self-Referral Version 1, September 2016

Exploring the impact of trauma and developmental factors in individuals with mental health difficulties

Telephone Self-Referral – Guidance for Researcher

General telephone manner: Polite, open and friendly

1. **Introduce yourself and your role in the study**

"Hello, my name is _____ and I am one of the researchers for the study 'Exploring the impact of trauma and developmental factors in individuals with mental health difficulties', which looks at the impact of trauma, attachment, dissociation and management of emotions in different groups. Thank you for contacting us/letting us contact you in relation to this study".

2. **Ask how they heard about the study** (to gauge if they have discussed this with their clinical team or if they are self-referring)

"How did you hear about this study?" Clinical: poster or clinician

3. **Check their current understanding of the study and ask if they would like to know more information about the study now?**

"I would be happy to provide you with more information about the study or answer any questions you might have"

If **YES**: some have only seen poster information while some have been given the Participant Information Sheet: in both instances, the information in the Participant Information Sheet will be used as a guide to outline the study

If **NO**: *"Thank you very much for talking to me. Feel free to contact me at a later point should you want to hear more about the study"*

4. Check if they have any questions regarding the information they have just received

Participant Information Sheet will be used as a guide to answer all possible questions and, should Participant Information Sheet not contain answers for the questions asked, local Trust policies will be used to inform answers.

If unable to answer the question: *"I am sorry that I am not able to answer your question right now. I will investigate this and call you back when I have a clear answer, is that okay? Thank you for your understanding".*

5. Ask if they would be interested in taking part

If **No**: *"That is completely fine, thank you very much for talking to me"*

If **YES**: *"Thank you for your interest".*

6. Explain that it is important to check if they would be suitable to take part and in order to do this we have a few questions – obtain verbal consent to ask some general questions

If Eligibility and Diagnostic Checklist is not completed in collaboration with clinician before initial contact with client (for clinical referrals): *"We have to make sure that everyone that is interested in a study appointment fit the criteria set for the study. Is it okay that I ask you some general questions?"*

If **NO**: *"That is completely fine, thank you very much for talking the time to talk to me"*

If **YES**: complete the appropriate Eligibility and Diagnostic Checklist by reading up each statement to the respondent and ask them to respond with YES or NO answers. Ask for permission to contact clinician/care team involved in their care.

If **NO**: *"Alright, it is completely understandable that you do not want us to contact your clinician/care team. However, one of the criteria for participation when under the care of NHS is that clinicians/care teams are informed of your interest to participate in the study and check whether they think it is suitable for you to participate before we book in a study appointment. Could I ask you why you don't want them to be contacted? Would it help if I explained the reasons why clinicians/care teams are involved?"*

If **YES**: *"Thank you, involving clinician/care teams is required for everyone under the care of NHS. I will make contact with your clinician/care team and once I have spoken with them I will contact you again".*

7. For all respondents: explain the outcome of the questions to the individual and check if they have any questions relating to this or the study in general.

If not eligible: *"Thank you for your time and for considering participating. Unfortunately you are not eligible to take part in this research because you do not meet the criteria set for this study. This is because research studies in general have specific things that they are looking for, which will be different from study to study. For this specific study, we are looking for* (state criteria they do not meet) *which means that this study would not be appropriate for you to participate in. This does not affect your care in any way and will not stop you from participating in other research studies as they all have different criteria. Do you have any questions regarding this? Thank you for your time and interest".*

If eligible: *"Thank you for time and for considering participating. You have been found eligible to participate in this study, would you like further details of what happens on the study appointment?"*

If YES: *"The next step now is to set a time and location for us to meet. When we meet for the appointment you will be provided with a questionnaire booklet. Since this study will include questions that might be distressing for some people, such as traumatic childhood events, it is important to inform you of this now. I will be present during the time you fill in the booklet. Should you experience any distress during or after completing the questionnaire, we can talk about this and your clinician/care team will be informed. Also, you can withdraw at any time without any explanation and this will not affect in you negatively in any way or influence your treatment or support. I will also provide you with an aftercare sheet that includes guidance on who you can contact should you feel distressed after leaving the appointment. Do you have any questions?*

Appendix J

NHS Trust Specific Checklists

Norfolk and Suffolk NHS Foundation Trust (NSFT) checklist

NSFT	**Completed**
Eligibility and diagnostic checklist	
Verbal consent to contact documented (via clinician OR via email with clinician) CONSENT TO CONTACT DATE: _____ CONSENT TO CONTACT via: _____	
Documentation of all contact (to later be uploaded to client records OR sent to clinician to upload)	
Information about self-referral/ _____	
PIS sent / PIS visit – Document date and method of how this was done DATE:_____ _____ METHOD:_____ _____	
Speak about confidentiality – break confidentiality if current risks to self or others is disclosed	
Informed written consent: (Two versions to be completed) DATE:_____ TIME: _____ METHOD:_____ RESEARCHER: _____	

QUESTIONS ASKED _____ _____	
Questionnaire pack completion RISK ISSUES: _____	
CHECK QUESTIONS ARE ALL ANSWERED	
CHECK RISK QUESTIONS IN QUESTIONNAIRE (Check responses to the BSL-23 supplement items – if indicating risk, ask if their care team is aware of these incidents and ask for verbal consent to pass this information to the care team. If they respond no, remind them of breaks of confidentiality as discussed previously)	
CONSENT TO SHARE INFORMATION WITH CARE TEAM? (i.e. ask whether the participant want to share specific information provided in the booklet or whether clinicians can have access to a copy of the whole questionnaire booklet)	
PRIZE DRAW & PUBLICATION SHEET	
AFTER CARE SHEET Ensure correct contact number is on this!	
COMPLETION TIME _____	
Questionnaire pack labelling - Date - Participant ID number - Page number *Make sure demographic sheet has these details on it at the top*	

Filing - Consent form into specific location on NSFT site (locked draw) - Prize draw sheet into specific location on NSFT site (locked draw) - Questionnaire pack stored in NSFT or relocated to site file / another specific location.	
Lorenzo - Document any prior contact which has not been uploaded or documented yet (follow guidance in clinical note template) - Document current contact (follow guidance in clinical note template) - Upload consent form - Upload PIS - Flag involvement in research on Lorenzo following guidance from: http://intranet.nsft.nhs.uk/trustprogramme/lorenzo/Lorenzo%20Documents/QRG%20-%20Alerts%20-%20Record%20and%20Modifying%20Alerts%20V3.0.pdf - Inform clinician of participation using Clinician Information Letter and inform of any risk issues	
Complete screening and enrolment log (for everyone that have been seen by the research team)	

Cambridgeshire and Peterborough NHS Foundation Trust (CPFT) checklist

CPFT	Completed
Eligibility and diagnostic checklist	
Consent to contact documented (via clinician OR via email with clinician) CONSENT TO CONTACT DATE: _____ CONSENT TO CONTACT via: _____	
Documentation of all contact (to later be uploaded to client records OR sent to clinician to upload)	
Information about self-referral/ _____	
PIS sent / PIS visit – Document date and method of how this was done ENSURE PIS HAS CPFT STICKER DATE: _____ METHOD: _____	
Consent: - X2 copies (one for researcher and one for the participant) & information filled in on the top of the copy ENSURE CONSENT FORMS HAVE CPFT STICKER DATE: _____ TIME: _____ METHOD: _____ RESEARCHER: _____	

OTHER PEOPLE PRESENT _____ QUESTIONS ASKED _____ _____	
Questionnaire pack completion RISK ISSES: _____ _____ _____	
CHECK QUESTIONS ARE ALL ANSWERED	
CHECK RISK QUESTIONS IN QUESTIONNAIRE	
CONSENT TO SHARE INFORMATION WITH CARE TEAM?	
PRIZE DRAW & PUBLICATION SHEET	
AFTER CARE SHEET Ensure correct contact number is on this!	
COMPLETION TIME _____	
Questionnaire pack labelling - Date - Participant ID number - Page number *Make sure demographic sheet has these details on it at the top*	
Filing - Consent form into specific location on CPFT site (locked draw) - Prize draw sheet into specific location on CPFT site (locked draw)	

- Questionnaire pack stored in CPFT or relocated to site file / another specific location.	
Rio	
- Document contact (follow guidance in clinical note template)	
- Document any prior contact which has not been uploaded or documented yet	
- Upload consent form	
- Upload PIS (with CPFT sticker!)	
- Inform clinician of participation using Clinician Information Letter and inform of any risk issues	
Complete screening and enrolment log	

Appendix K

Clinical Note Template

Version 1, September 2016

Exploring the impact of trauma and developmental factors in individuals with mental health difficulties

Template for Clinical Note Entry

Participation in Research Study: 'Exploring The Impact of Trauma and Developmental Factors in Individuals with Mental Health Difficulties'

Researcher: XXXXXXX

- Eligibility and Diagnostic Checklist [*Version X, date*] completed by / with the guidance from *XXXXXX* on *XX/XX/XX*.
- Participant Information Sheet [*Version X, date*] was given to the participant through *insert method of contact* on *XX/XX/XX*).
- (*If applicable*) Telephone conversation on *XX/XX/XX* with *XXXXXX*. The general study related content was discussed. *Insert any specific information about the conversation that could impact on their decision to participate, including the questions asked about the study and the content of the researcher responses to them.*
- The participant was given an opportunity to ask questions about the study – *insert information about key discussion points relating to the study and outcome of any these.*
- The participant gave informed consent [*Version X, date*] to participate in the research study 'Exploring The Impact of Trauma and Developmental Factors in Individuals with Mental Health Difficulties' on *XX/XX/XX* at *XX:XX* am/pm. *XXXXXX* took consent, *XXXXXX* was present at the time informed consent was given.
- Total duration of visit: *XX* minutes.
- On *XX/XX/XX* the study questionnaires were completed. *XXXXXX* was present throughout. Participation in this research study is now complete and the participant has been given an After Care sheet [*Version X, date*] in case they feel distressed following participation.

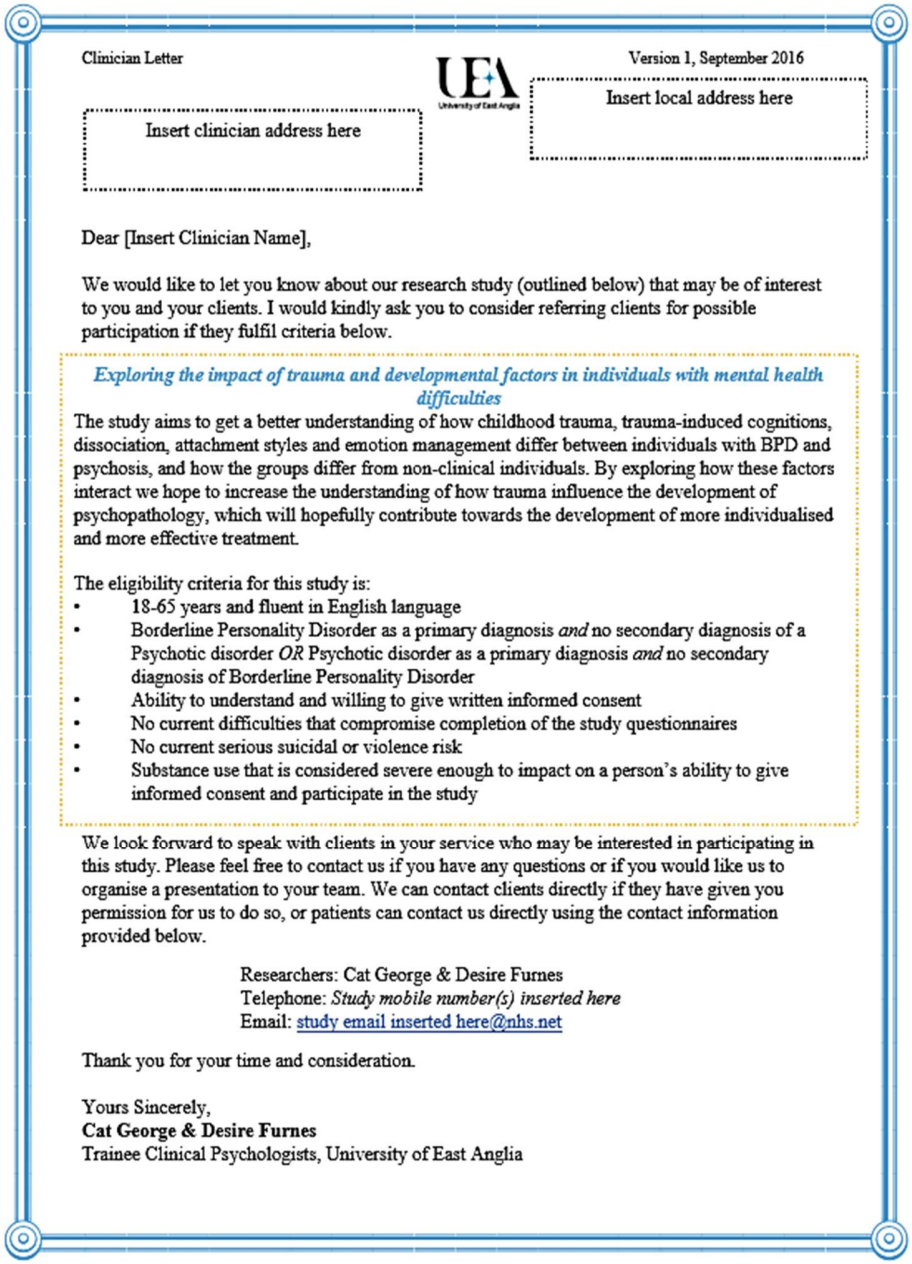
The Participant Information Sheet [*Version X, date*] and consent form [*Version X, date*] have been uploaded to the clinical notes. For further information and any queries about the study please contact the research team on:

(*insert researcher details here)*

Appendix L

Clinician Related Documents

Clinician Information Sheet



Clinician Letter

Version 1, September 2016

Insert local address here

Insert clinician address here

Dear [Insert Clinician Name],

We would like to let you know about our research study (outlined below) that may be of interest to you and your clients. I would kindly ask you to consider referring clients for possible participation if they fulfil criteria below.

Exploring the impact of trauma and developmental factors in individuals with mental health difficulties

The study aims to get a better understanding of how childhood trauma, trauma-induced cognitions, dissociation, attachment styles and emotion management differ between individuals with BPD and psychosis, and how the groups differ from non-clinical individuals. By exploring how these factors interact we hope to increase the understanding of how trauma influence the development of psychopathology, which will hopefully contribute towards the development of more individualised and more effective treatment.

The eligibility criteria for this study is:

- 18-65 years and fluent in English language
- Borderline Personality Disorder as a primary diagnosis *and* no secondary diagnosis of a Psychotic disorder *OR* Psychotic disorder as a primary diagnosis *and* no secondary diagnosis of Borderline Personality Disorder
- Ability to understand and willing to give written informed consent
- No current difficulties that compromise completion of the study questionnaires
- No current serious suicidal or violence risk
- Substance use that is considered severe enough to impact on a person's ability to give informed consent and participate in the study

We look forward to speak with clients in your service who may be interested in participating in this study. Please feel free to contact us if you have any questions or if you would like us to organise a presentation to your team. We can contact clients directly if they have given you permission for us to do so, or patients can contact us directly using the contact information provided below.

Researchers: Cat George & Desire Furnes
Telephone: *Study mobile number(s) inserted here*
Email: study email inserted here@nhs.net

Thank you for your time and consideration.

Yours Sincerely,
Cat George & Desire Furnes
Trainee Clinical Psychologists, University of East Anglia

Template for informing clinician of participation

Version 1, September 2016

Exploring the impact of trauma and developmental factors in individuals with mental health difficulties

Template for informing clinician / care team after a client has consented and participated in study

Dear *XXXX*,

I am writing to you to inform you that your client, *XXXX* [*insert NHS number*], has consented *and taken part* in the research study: 'Exploring the impact of trauma and developmental factors in individuals with mental difficulties'.

The research team has uploaded the relevant consent form and Participant Information Sheet to their NHS care records. The research team has written an entry into their clinical notes documenting their involvement.

If you have any queries about this study or your clients participation please do not hesitate to get in contact with the research team.

Best wishes,

XXXXX

Insert Research Team contact details here

Appendix M

Prize Draw and Publication Sheet

Prize Draw/Publication

Version 1, September 2016

Exploring the impact of trauma and developmental factors in individuals with mental health difficulties

If you are interested in entering a prize draw for the opportunity to win one of four £20 Amazon vouchers OR you would like to receive information on the overall study findings, please inform the researchers of your decision and give them the relevant contact details.
Your email address will be stored securely and separately from the questionnaires you have completed.

Please tick

I would like to be entered into the prize draw ☐

I would like to receive information on the overall study findings ☐

Name: _____

Email / Postal Address:_____

Appendix N

Questionnaire Pack

Early Trauma Inventory Self Report-Short Form (ETISR-SF)

J. Douglas Bremner, Emory University School of Medicine, Atlanta GA

Participant Name or ID:_____ DOB:_____ Age:____ Assessment Date:_____

Part 1. General Traumas. After the age of 18

1. Were you ever exposed to a life-threatening natural disaster?	YES	NO
2. Were you involved in a serious accident?	YES	NO
3. Did you ever suffer a serious personal injury or illness?	YES	NO
4. Did you ever experience the death or serious illness of a parent or a primary caretaker?	YES	NO
5. Did you experience the divorce or separation of your parents?	YES	NO
6. Did you experience the death or serious injury of a sibling?	YES	NO
7. Did you ever experience the death or serious injury of a friend?	YES	NO
8. Did you ever witness violence towards others, including family members?	YES	NO
9. Did anyone in your family ever suffer from mental or psychiatric illness or have a "breakdown"?	YES	NO
10. Did your parents or primary caretaker have a problem with alcoholism or drug or drug abuse?	YES	NO
11. Did you ever see someone murdered?	YES	NO

Part 2. Physical Punishment. Before the age of 18

1. Were you ever slapped in the face with an open hand?	YES	NO
2. Were you ever burned with hot water, a cigarette or something else?	YES	NO
3. Were you ever punched or kicked?	YES	NO
4. Were you ever hit with an object that was thrown at you?	YES	NO
5. Were you ever pushed or shoved?	YES	NO

Part 3. Emotional Abuse. Before the age of 18

1. Were you often put down or ridiculed?	YES	NO
2. Were you often ignored or made to feel that you didn't count?	YES	NO
3. Were you often told you were no good?	YES	NO
4. Most of the time were you treated in a cold, uncaring way or made to feel like you were not loved?	YES	NO
5. Did your parents or caretakers often fail to understand you or your needs?	YES	NO

Part 4. Sexual Events. Before the age of 18

1. Were you ever touched in an intimate or private part of your body (e.g breast, thighs, genitals) in a way that surprised you or made you feel uncomfortable?	YES	NO
2. Did you ever experience someone rubbing their genitals against you?	YES	NO
3. Were you ever forced or coerced to touch another person in an intimate or private part of their body?	YES	NO
4. Did anyone ever have genital sex with you against your will?	YES	NO
5. Were you ever forced or coerced to perform oral sex on someone against your will?.	YES	NO
6. Were you ever forced or coerced to kiss someone in a sexual rather than an affectionate way?	YES	NO

If you responded "YES" for any of the above events, answer the following for the one that has had the greatest impact on your life. In answering consider how you felt at the time of the event.

1. Did you experience emotions of intense fear, horror or helplessness?	YES	NO
2. Did you feel out-of-your-body or as if you were in a dream?	YES	NO

Revised on 11/04

6- Item PTSD Checklist-Civilian Form (PCL-C)

Instructions to patient: "Below is a list of problems and complaints that people sometimes have in response to stressful life experiences. Please read each one carefully, and then fill in the circle of the response to indicate how much you have been bothered by that problem **IN THE PAST MONTH**." Please fill in ONE option only for each question."

	Response	Not at all (1)	A little bit (2)	Moderately (3)	Quite a bit (4)	Extremely (5)
1.	Repeated, disturbing *memories, thoughts,* or *images* of a stressful experience from the past?					
4.	Feeling *very upset* when *something reminded* you of a stressful experience from the past?					
7.	Avoid *activities* or *situations* because *they remind you* of a stressful experience from the past?					
10.	Feeling *distant* or *cut off* from other people?					
14.	Feeling *irritable* or having *angry outbursts*?					
15.	Having *difficulty concentrating*?					

Total Score

The Psychosis Attachment Measure

(Berry, Wearden, Barrowclough & Liversidge, 2006)

We all differ in how we relate to other people. This questionnaire lists different thoughts, feelings and ways of behaving in relationships with others. Thinking generally about how you relate to other key people in your life, please use a tick to show how much each statement is like you. Key people could include family members, friends, partner or mental health workers.

There are no right or wrong answers

	Not at all	A little	Quite a bit	Very much
1. I prefer not to let other people know my 'true' thoughts and feelings.	(.0.)	(.1.)	(.2.)	(.3.)
2. I find it easy to depend on other people for support with problems or difficult situations.	(.3.)	(.2.)	(.1.)	(.0.)
3. I tend to get upset, anxious or angry if other people are not there when I need them.	(.0.)	(.1.)	(.2.)	(.3.)
4. I usually discuss my problems and concerns with other people.	(.3.)	(.2.)	(.1.)	(.0.)
5. I worry that key people in my life won't be around in the future.	(.0.)	(.1.)	(.2.)	(.3.)
6. I ask other people to reassure me that they care about me.	(.0.)	(.1.)	(2.)	(.3.)
7. If other people disapprove of something I do, I get very upset.	(.0.)	(.1.)	(.2.)	(.3.)
8. I find it difficult to accept help from other people when I have problems or difficulties.	(.0.)	(.1.)	(.2.)	(.3.)
9. It helps to turn to other people when I'm stressed.	(.3.)	(.2.)	(.1.)	(.0.)

	Not at all	A little	Quite a bit	Very much
10. I worry that if other people get to know me better, they won't like me.	(.0.)	(.1.)	(.2.)	(.3.)
11. When I'm feeling stressed, I prefer being on my own to being in the company of other people.	(.0.)	(.1.)	(.2.)	(.3.)
12. I worry a lot about my relationships with other people.	(.0.)	(.1.)	(.2.)	(.3.)
13. I try to cope with stressful situations on my own.	(.0.)	(.1.)	(.2.)	(.3.)
14. I worry that if I displease other people, they won't want to know me anymore.	(.0.)	(.1.)	(.2.)	(.3.)
15. I worry about having to cope with problems and difficult situations on my own.	(.0.)	(.1.)	(.2.)	(.3.)
16. I feel uncomfortable when other people want to get to know me better.	(.0.)	(.1.)	(.2.)	(.3.)

Serenity Programme™ - serene.me.uk - Difficulties in Emotion Regulation Scale (DERS)

1	2	3	4	5
Almost never (0-10%)	Sometimes (11-35%)	About half the time (36-65%)	Most of the time (66-90%)	Almost always (91-100%)

13	When I'm upset, I have difficulty getting work done	☐
14	When I'm upset, I become out of control	☐
15	When I'm upset, I believe that I will remain that way for a long time	☐
16	When I'm upset, I believe that I'll end up feeling very depressed	☐
17	When I'm upset, I believe that my feelings are valid and important (R)	☐
18	When I'm upset, I have difficulty focusing on other things	☐
19	When I'm upset, I feel out of control	☐
20	When I'm upset, I can still get things done (R)	☐
21	When I'm upset, I feel ashamed with myself for feeling that way	☐
22	When I'm upset, I know that I can find a way to eventually feel better (R)	☐
23	When I'm upset, I feel like I am weak	☐
24	When I'm upset, I feel like I can remain in control of my behaviours (R)	☐
25	When I'm upset, I feel guilty for feeling that way	☐
26	When I'm upset, I have difficulty concentrating	☐
27	When I'm upset, I have difficulty controlling my behaviours	☐

Serenity Programme™ - serene.me.uk - Difficulties in Emotion Regulation Scale (DERS)

1	2	3	4	5
Almost never (0-10%)	Sometimes (11-35%)	About half the time (36-65%)	Most of the time (66-90%)	Almost always (91-100%)

28	When I'm upset, I believe that there is nothing I can do to make myself feel better	☐
29	When I'm upset, I become irritated with myself for feeling that way	☐
30	When I'm upset, I start to feel very bad about myself	☐
31	When I'm upset, I believe that wallowing in it is all I can do	☐
32	When I'm upset, I lose control over my behaviours	☐
33	When I'm upset, I have difficulty thinking about anything else	☐
34	When I'm upset, I take time to figure out what I'm really feeling (R)	☐
35	When I'm upset, it takes me a long time to feel better	☐
36	When I'm upset, my emotions feel overwhelming	☐

Document Version: 1.1
Last Updated: 05 June 2013
Planned Review: 30 June 2018

Privacy - please note - this form does not transmit any information about you or your assessment scores If you wish to keep your results, you must print this document These results are intended as a guide to your health and are presented for educational purposes only They are not intended to be a clinical diagnosis If you are concerned in any way about your health, please consult with a qualified health professional.

Gratz, K.L. & Roemer, E. Multidimensional Assessment of Emotion Regulation and Dysregulation: Development, Factor Structure, and Initial Validation of the Difficulties in Emotion Regulation Scale. Journal of Psychopathology and Behavioral Assessment, 26: 1, pp. 41-54.

Serenity Programme™ - serene.me.uk - Difficulties in Emotion Regulation Scale (DERS)

1	2	3	4	5
Almost never (0-10%)	Sometimes (11-35%)	About half the time (36-65%)	Most of the time (66-90%)	Almost always (91-100%)

SCORING THE DERS

The DERS is a brief, 36-item self-report questionnaire designed to assess multiple aspects of emotional dysregulation. Reverse-scored items are numbered 1, 2, 6, 7, 8, 10, 17, 20, 22, 24 and 34. Higher scores suggest greater problems with emotion regulation. The measure yields a total score (SUM) as well as scores on six sub-scales:

1. Non-acceptance of emotional responses (NONACCEPT)
2. Difficulties engaging in goal directed behaviour (GOALS)
3. Impulse control difficulties (IMPULSE)
4. Lack of emotional awareness (AWARE)
5. Limited access to emotion regulation strategies (STRATEGIES)
6. Lack of emotional clarity (CLARITY)

1: Nonacceptance of Emotional Responses (NONACCEPT)

25) When I'm upset, I feel guilty for feeling that way
21) When I'm upset, I feel ashamed with myself for feeling that way
12) When I'm upset, I become embarrassed for feeling that way
11) When I'm upset, I become angry with myself for feeling that way
29) When I'm upset, I become irritated with myself for feeling that way
23) When I'm upset, I feel like I am weak

2: Difficulties Engaging in Goal-Directed (GOALS)

26) When I'm upset, I have difficulty concentrating
18) When I'm upset, I have difficulty focusing on other things
13) When I'm upset, I have difficulty getting work done
33) When I'm upset, I have difficulty thinking about anything else
20) When I'm upset, I can still get things done (R)

Serenity Programme™ - serene.me.uk - Difficulties in Emotion Regulation Scale (DERS)

1	2	3	4	5
Almost never (0-10%)	Sometimes (11-35%)	About half the time (36-65%)	Most of the time (66-90%)	Almost always (91-100%)

3: Impulse Control Difficulties (IMPULSE)

32) When I'm upset, I lose control over my behaviours
27) When I'm upset, I have difficulty controlling my behaviours
14) When I'm upset, I become out of control
19) When I'm upset, I feel out of control
3) I experience my emotions as overwhelming and out of control
24) When I'm upset, I feel like I can remain in control of my behaviours (R)

4: Lack of Emotional Awareness (AWARE)

6) I am attentive to my feelings (R)
2) I pay attention to how I feel (R)
10) When I'm upset, I acknowledge my emotions (R)
17) When I'm upset, I believe that my feelings are valid and important (R)
8) I care about what I am feeling (R)
34) When I'm upset, I take time to figure out what I'm really feeling (R)

5: Limited Access to Emotion Regulation Strategies (STRATEGIES)

16) When I'm upset, I believe that I'll end up feeling very depressed
15) When I'm upset, I believe that I will remain that way for a long time
31) When I'm upset, I believe that wallowing in it is all I can do
35) When I'm upset, it takes me a long time to feel better
28) When I'm upset, I believe that there is nothing I can do to make myself feel better
22) When I'm upset, I know that I can find a way to eventually feel better (R)
36) When I'm upset, my emotions feel overwhelming
30) When I'm upset, I start to feel very bad about myself

6: Lack of Emotional Clarity (CLARITY)

5) I have difficulty making sense out of my feelings
4) I have no idea how I am feeling
9) I am confused about how I feel
7) I know exactly how I am feeling (R)
1) I am clear about my feelings (R)

Dissociative Experiences Scale-II (DES-II)
Eve Bernstein Carlson, Ph.D. & Frank W. Putnam, M.D.

Directions: This questionnaire consists of twenty-eight questions about experiences that you may have in your daily life. We are interested in how often you have these experiences. It is important, however, that your answers show how often these experiences happen to you when you are not under the influence of alcohol or drugs. To answer the questions, please determine to what degree the experience described in the question applies to you, and circle the number to show what percentage of the time you have the experience.

For example: 0% 10 20 30 40 50 60 70 80 90 100%
(Never) (Always)

1. Some people have the experience of driving or riding in a car or bus or subway and suddenly realizing that they don't remember what has happened during all or part of the trip. Circle a number to show what percentage of the time this happens to you.
0% 10 20 30 40 50 60 70 80 90 100%

2. Some people find that sometimes they are listening to someone talk and they suddenly realize that they did not hear part or all of what was said. Circle the number to show what percentage of the time this happens to you. 0% 10 20 30 40 50 60 70 80 90 100%

3. Some people have the experience of finding themselves in a place and have no idea how they got there. Circle a number to show what percentage of the time this happens to you.
0% 10 20 30 40 50 60 70 80 90 100%

4. Some people have the experience of finding themselves dressed in clothes that they don't remember putting on. Circle the number to show what percentage of the time this happens to you.
0% 10 20 30 40 50 60 70 80 90 100%

5. Some people have the experience of finding new things among their belongings that they do not remember buying. Circle the number to show what percentage of the time this happens to you.
0% 10 20 30 40 50 60 70 80 90 100%

6. Some people sometimes find that they are approached by people that they do not know, who call them by another name or insist that they have met them before. Circle the number to show what percentage of the time this happens to you 0% 10 20 30 40 50 60 70 80 90 100%

7. Some people sometimes have the experience of feeling as though they are standing next to themselves or watching themselves do something and they actually see themselves as if they were looking at another person. Circle the number to show what percentage of the time this happens to you.
0% 10 20 30 40 50 60 70 80 90 100%

8. Some people are told that they sometimes do not recognize friends of family members. Circle the number to show what percentage of the time this happens to you.
0% 10 20 30 40 50 60 70 80 90 100%

9. Some people find that they have no memory for some important events in their lives (for example, a wedding or graduation). Circle the number to show what percentage of the time this happens to you.
0% 10 20 30 40 50 60 70 80 90 100%

10. Some people have the experience of being accused of lying when they do not think that they have lied. Circle the number to show what percentage of the time this happens to you.
0% 10 20 30 40 50 60 70 80 90 100%

11. Some people have the experience of looking in a mirror and not recognizing themselves. Circle the number to show what percentage of the time this happens to you.
0% 10 20 30 40 50 60 70 80 90 100%

12. Some people have the experience of feeling that other people, objects, and the world around them are not real. Circle the number to show what percentage of the time this happens to you.
0% 10 20 30 40 50 60 70 80 90 100%

13. Some people have the experience of feeling that their body does not seem to belong to them. Circle the number to show what percentage of the time this happens to you.
0% 10 20 30 40 50 60 70 80 90 100%

14. Some people have the experience of sometimes remembering a past event so vividly that they feel as if they were reliving that event. Circle the number to show what percentage of the time this happens to you.
0% 10 20 30 40 50 60 70 80 90 100%

15. Some people have the experience of not being sure whether things that they remember happening really did happen or whether they just dreamed them. Circle the number to show what percentage of the time this happens to you. 0% 10 20 30 40 50 60 70 80 90 100%

16. Some people have the experience of being in a familiar place but finding it strange and unfamiliar. Circle the number to show what percentage of the time this happens to you.
0% 10 20 30 40 50 60 70 80 90 100%

17. Some people find that when they are watching television or a movie they become so absorbed in the story that they are unaware of other events happening around them. Circle the number to show what percentage of the time this happens to you.
0% 10 20 30 40 50 60 70 80 90 100%

18. Some people find that they become so involved in a fantasy or daydream that it feels as though it were really happening to them. Circle the number to show what percentage of the time this happens to you.
0% 10 20 30 40 50 60 70 80 90 100%

19. Some people find that they sometimes are able to ignore pain. Circle the number to show what percentage of the time this happens to you.
0% 10 20 30 40 50 60 70 80 90 100%

20. Some people find that they sometimes sit staring off into space, thinking of nothing, and are not aware of the passage of time. Circle the number to show what percentage of the time this happens to you.
0% 10 20 30 40 50 60 70 80 90 100%

21. Some people sometimes find that when they are alone they talk out loud to themselves. Circle the number to show what percentage of the time this happens to you.
0% 10 20 30 40 50 60 70 80 90 100%

22. Some people find that in one situation they may act so differently compared with another situation that they feel almost as if they were two different people. Circle the number to show what percentage of the time this happens to you. 0% 10 20 30 40 50 60 70 80 90 100%

23. Some people sometimes find that in certain situations they are able to do things with amazing ease and spontaneity that would usually be difficult for them (for example, sports, work, social situations, etc.). Circle the number to show what percentage of the time this happens to you.
0% 10 20 30 40 50 60 70 80 90 100%

24. Some people sometimes find that they cannot remember whether they have done something or have just thought about doing that thing (for example, not knowing whether they have just mailed a letter or have just thought about mailing it). Circle the number to show what percentage of the time this happens to you.
0% 10 20 30 40 50 60 70 80 90 100%

25. Some people find evidence that they have done things that they do not remember doing. Circle the number to show what percentage of the time this happens to you.
0% 10 20 30 40 50 60 70 80 90 100%

26. Some people sometimes find writings, drawings, or notes among their belongings that they must have done but cannot remember doing. Circle the number to show what percentage of the time this happens to you. 0% 10 20 30 40 50 60 70 80 90 100%

27. Some people sometimes find that they hear voices inside their head that tell them to do things or comment on things that they are doing. Circle the number to show what percentage of the time this happens to you. 0% 10 20 30 40 50 60 70 80 90 100%

28. Some people sometimes feel as if they are looking at the world through a fog, so that people and objects appear far away or unclear. Circle the number to show what percentage of the time this happens to you.
0% 10 20 30 40 50 60 70 80 90 100%

posttraumatic cognitions inventory (pcti)

your name: *today's date:*

We are interested in the kind of thoughts which you may have had after a traumatic experience. Below are a number of statements that may or may not be representative of your thinking. Please read each statement carefully and tell us how much you AGREE or DISAGREE with each by putting the appropriate number between 1 & 7 in the box to the right of the statement. People react to traumatic events in many different ways. There are no right or wrong answers to these statements.

1	*2*	*3*	*4*	*5*	*6*	*7*
totally disagree	*disagree very much*	*disagree slightly*	*neutral*	*agree slightly*	*agree very much*	*totally agree*

1.	the event happened because of the way I acted	
2.	I can't trust that I will do the right thing	
3.	I am a weak person	
4.	I will not be able to control my anger and will do something terrible	
5.	I can't deal with even the slightest upset	
6.	I used to be a happy person but now I am always miserable.	
7.	people can't be trusted	
8.	I have to be on guard all the time	
9.	I feel dead inside	
10.	you can never know who will harm you	
11.	I have to be especially careful because you never know what can happen next	
12.	I am inadequate	
13.	if I think about the event, I will not be able to handle it	
14.	the event happened to me because of the sort of person I am	
15.	my reactions since the event mean that I am going crazy	
16.	I will never be able to feel normal emotions again	
17.	the world is a dangerous place	
18.	somebody else would have stopped the event from happening	
19.	I have permanently changed for the worse	
20.	I feel like an object, not like a person	
21.	somebody else would not have gotten into this situation	
22.	I can't rely on other people	
23.	I feel isolated and set apart from others	
24.	I have no future	
25.	I can't stop bad things from happening to me	
26.	people are not what they seem	
27.	my life has been destroyed by the trauma	
28.	there is something wrong with me as a person	
29.	my reactions since the event show that I am a lousy coper	
30.	there is something about me that made the event happen	
31.	I feel like I don't know myself anymore	
32.	I can't rely on myself	
33.	nothing good can happen to me anymore	

SSI (Brief Version)

Please answer each item depending on how often (if at all) this experience has occurred over the **past 2 weeks**. Please answer all of the questions honestly, even if you are unsure of your answer.

1. I sometimes avoid going to places where there will be many people because I will get anxious.	*Not at all*	*Occasionally*	*Sometimes*	*Often*	*All of the time*
2. Do you believe in telepathy (mind-reading)?	*Not at all*	*Occasionally*	*Sometimes*	*Often*	*All of the time*
3. I am sure I am being talked about behind my back.	*Not at all*	*Occasionally*	*Sometimes*	*Often*	*All of the time*
4. I get very nervous when I have to make polite conversation.	*Not at all*	*Occasionally*	*Sometimes*	*Often*	*All of the time*
5. Have you had the sense that some person or force is around you, even though you cannot see anyone?	*Not at all*	*Occasionally*	*Sometimes*	*Often*	*All of the time*
6. Do you often feel that other people have got it in for you?	*Not at all*	*Occasionally*	*Sometimes*	*Often*	*All of the time*
7. I feel very uneasy talking to people I do not know well.	*Not at all*	*Occasionally*	*Sometimes*	*Often*	*All of the time*
8. Have you noticed a common event or object that seemed to contain a special sign for you?	*Not at all*	*Occasionally*	*Sometimes*	*Often*	*All of the time*
9. When you see people talking to each other, do you often wonder if they are talking about you?	*Not at all*	*Occasionally*	*Sometimes*	*Often*	*All of the time*
10. I often hear a voice speaking my thoughts aloud.	*Not at all*	*Occasionally*	*Sometimes*	*Often*	*All of the time*
11. Do you often feel nervous when you are in a group of unfamiliar people?	*Not at all*	*Occasionally*	*Sometimes*	*Often*	*All of the time*
12. I often feel that others have it in for me.	*Not at all*	*Occasionally*	*Sometimes*	*Often*	*All of the time*
13. Have you seen things invisible to other people?	*Not at all*	*Occasionally*	*Sometimes*	*Often*	*All of the time*

14. I feel very uncomfortable in social situations involving unfamiliar people.	*Not at all*	*Occasionally*	*Sometimes*	*Often*	*All of the time*
15. Do you sometimes feel that people are talking about you?	*Not at all*	*Occasionally*	*Sometimes*	*Often*	*All of the time*
16. Can other people feel your feelings when they are not there?	*Not at all*	*Occasionally*	*Sometimes*	*Often*	*All of the time*
17. I get anxious when meeting people for the first time.	*Not at all*	*Occasionally*	*Sometimes*	*Often*	*All of the time*
18. Do you believe in clairvoyancy (psychic forces, fortune telling)?	*Not at all*	*Occasionally*	*Sometimes*	*Often*	*All of the time*
19. Do you sometimes feel that other people are watching you?	*Not at all*	*Occasionally*	*Sometimes*	*Often*	*All of the time*
20. Have you felt that you are communicating with another person telepathically (by mind-reading)?	*Not at all*	*Occasionally*	*Sometimes*	*Often*	*All of the time*

Borderline Symptom List 23 (BSL-23)

Code: _____ Date: _____

Please follow these instructions when answering the questionnaire:In the following table you will find a set of difficulties and problems which possibly describe you. Please work through the questionnaire and decide how much you suffered from each problem in the course of the last week. In case you have no feelings at all at the present moment, please answer according to how you *think you might have felt*. Please answer honestly. **All questions refer to the last week. If you felt different ways at different times in the week, give a rating for how things were for you on average.**
Please be sure to answer each question.

In the course of last week...		not at all	a little	rather	much	very strong
1	It was hard for me to concentrate	**0**	**1**	**2**	**3**	**4**
2	I felt helpless	**0**	**1**	**2**	**3**	**4**
3	I was absent-minded and unable to remember what I was actually doing	**0**	**1**	**2**	**3**	**4**
4	I felt disgust	**0**	**1**	**2**	**3**	**4**
5	I thought of hurting myself	**0**	**1**	**2**	**3**	**4**
6	I didn't trust other people	**0**	**1**	**2**	**3**	**4**
7	I didn't believe in my right to live	**0**	**1**	**2**	**3**	**4**
8	I was lonely	**0**	**1**	**2**	**3**	**4**
9	I experienced stressful inner tension	**0**	**1**	**2**	**3**	**4**
10	I had images that I was very much afraid of	**0**	**1**	**2**	**3**	**4**
11	I hated myself	**0**	**1**	**2**	**3**	**4**
12	I wanted to punish myself	**0**	**1**	**2**	**3**	**4**
13	I suffered from shame	**0**	**1**	**2**	**3**	**4**
14	My mood rapidly cycled in terms of anxiety, anger, and depression	**0**	**1**	**2**	**3**	**4**
15	I suffered from voices and noises from inside or outside my head	**0**	**1**	**2**	**3**	**4**
16	Criticism had a devastating effect on me	**0**	**1**	**2**	**3**	**4**
17	I felt vulnerable	**0**	**1**	**2**	**3**	**4**
18	The idea of death had a certain fascination for me	**0**	**1**	**2**	**3**	**4**
19	Everything seemed senseless to me	**0**	**1**	**2**	**3**	**4**
20	I was afraid of losing control	**0**	**1**	**2**	**3**	**4**
21	I felt disgusted by myself	**0**	**1**	**2**	**3**	**4**
22	I felt as if I was far away from myself	**0**	**1**	**2**	**3**	**4**
23	I felt worthless	**0**	**1**	**2**	**3**	**4**

Now we would like to know in addition the quality of your **overall** personal state in the course of the last week. 0% means **absolutely down**, 100% means **excellent**. Please check the percentage which comes closest.

0%	10%	20%	30%	40%	50%	60%	70%	80%	90%	100%
(very bad) ◄									►	(excellent)

BSL – Supplement: Items for Assessing Behavior

	During the last week.....	Not at all	once	2-3 times	4-6 times	Daily or more often
1	I hurt myself by cutting, burning, strangling, headbanging etc.	**0**	**1**	**2**	**3**	**4**
2	I told other people that I was going to kill myself	**0**	**1**	**2**	**3**	**4**
3	I tried to commit suicide	**0**	**1**	**2**	**3**	**4**
4	I had episodes of binge eating	**0**	**1**	**2**	**3**	**4**
5	I induced vomiting	**0**	**1**	**2**	**3**	**4**
6	I displayed high-risk behavior by knowingly driving too fast, running around on the roofs of high buildings, balancing on bridges, etc.	**0**	**1**	**2**	**3**	**4**
7	I got drunk	**0**	**1**	**2**	**3**	**4**
8	I took drugs	**0**	**1**	**2**	**3**	**4**
9	I took medication that had not been prescribed or if had been prescribed, I took more than the prescribed dose	**0**	**1**	**2**	**3**	**4**
10	I had outbreaks of uncontrolled anger or physically attacked others	**0**	**1**	**2**	**3**	**4**
11	I had uncontrollable sexual encounters of which I was later ashamed or which made me angry.	**0**	**1**	**2**	**3**	**4**

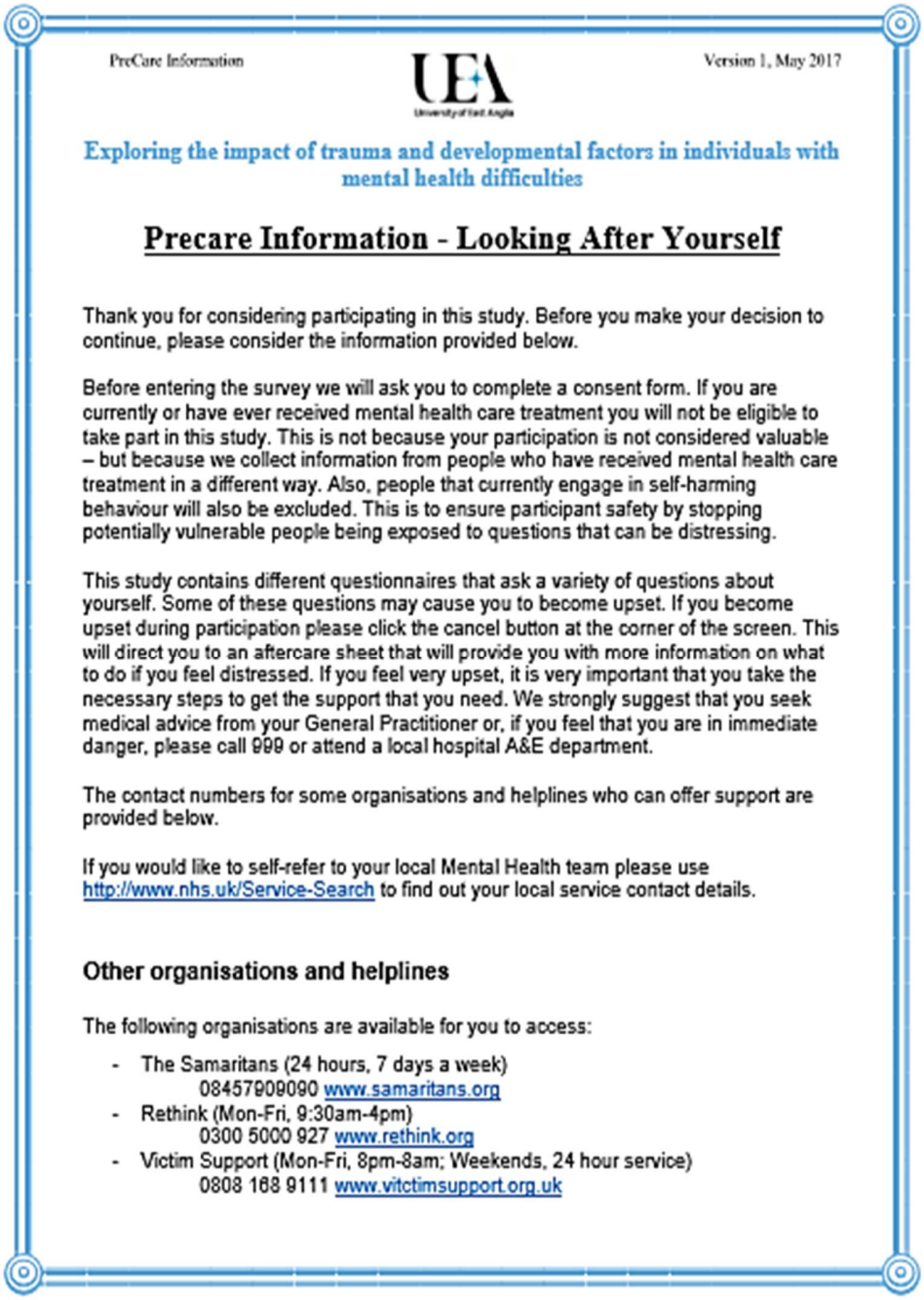
Please double-check for missing answers

WE THANK YOU VERY MUCH FOR YOUR PARTICIPATION!

PLEASE RETURN THE QUESTIONNAIRE TO YOUR THERAPIST

Appendix O

Pre-Care Information Sheet



PreCare Information

Version 1, May 2017

Exploring the impact of trauma and developmental factors in individuals with mental health difficulties

Precare Information - Looking After Yourself

Thank you for considering participating in this study. Before you make your decision to continue, please consider the information provided below.

Before entering the survey we will ask you to complete a consent form. If you are currently or have ever received mental health care treatment you will not be eligible to take part in this study. This is not because your participation is not considered valuable – but because we collect information from people who have received mental health care treatment in a different way. Also, people that currently engage in self-harming behaviour will also be excluded. This is to ensure participant safety by stopping potentially vulnerable people being exposed to questions that can be distressing.

This study contains different questionnaires that ask a variety of questions about yourself. Some of these questions may cause you to become upset. If you become upset during participation please click the cancel button at the corner of the screen. This will direct you to an aftercare sheet that will provide you with more information on what to do if you feel distressed. If you feel very upset, it is very important that you take the necessary steps to get the support that you need. We strongly suggest that you seek medical advice from your General Practitioner or, if you feel that you are in immediate danger, please call 999 or attend a local hospital A&E department.

The contact numbers for some organisations and helplines who can offer support are provided below.

If you would like to self-refer to your local Mental Health team please use http://www.nhs.uk/Service-Search to find out your local service contact details.

Other organisations and helplines

The following organisations are available for you to access:

- The Samaritans (24 hours, 7 days a week)
  08457909090 www.samaritans.org
- Rethink (Mon-Fri, 9:30am-4pm)
  0300 5000 927 www.rethink.org
- Victim Support (Mon-Fri, 8pm-8am; Weekends, 24 hour service)
  0808 168 9111 www.vitctimsupport.org.uk

Appendix P

Aftercare Sheets

Clinical Group

After Care Information Version 1, September 2016

Exploring the impact of trauma and developmental factors in individuals with mental health difficulties

After Care Information - Looking After Yourself

Thank you for being involved in this study, we really appreciate your time and commitment. If you feel you need to share something or talk to someone after completing the study there are people and organisations available to support you. We advise you to contact your care team or local General Practitioner (GP) or who can discuss any problems you may have and refer you to other services if necessary.

If you are experiencing any distress as a result of participating in this study, or for any other reason, we encourage you to contact members of your care team. Please follow your care team's advice and if out of hours, contact the out of hour's service on the details below:

Out of Hours Service: *insert local details here*

Monday – Friday 5pm – 9am, Weekends 24 hours.

If you are feeling in extreme crisis right now and you think you may act on suicidal thoughts, or you have seriously harmed yourself:

• go to a hospital A&E department and ask for help (if you need to, you can call 999 and ask for an ambulance).

Other organisations and helplines

The following organisations are available for you to access:

- The Samaritans (24 hours, 7 days a week)
  08457909090 www.samaritans.org
- Rethink (Mon-Fri, 9:30am-4pm)
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- Victim Support (Mon-Fri, 8pm-8am;Weekends, 24 hour service)
  0808 168 9111 www.vitctimsupport.org

Non-Clinical Group

After Care Information

UEA
University of East Anglia

Version 1, September 2016

Exploring the impact of trauma and developmental factors in individuals with mental health difficulties

Aftercare Information - Looking After Yourself

Thank you for being involved in this study, we really appreciate your time and commitment. If you feel you need to share something or talk to someone after completing the study there are people and organisations available to support you. We advise you to contact your local General Practitioner (GP) who can discuss any problems you may have and refer you to other services if necessary.

If you would like to self-refer to your local Mental Health team please use http://www.nhs.uk/Service-Search to find out your local service contact details.

If you are feeling in extreme crisis right now and you think you may act on suicidal thoughts, or you have seriously harmed yourself:

• go to a hospital A&E department and ask for help (if you need to, you can call 999 and ask for an ambulance).

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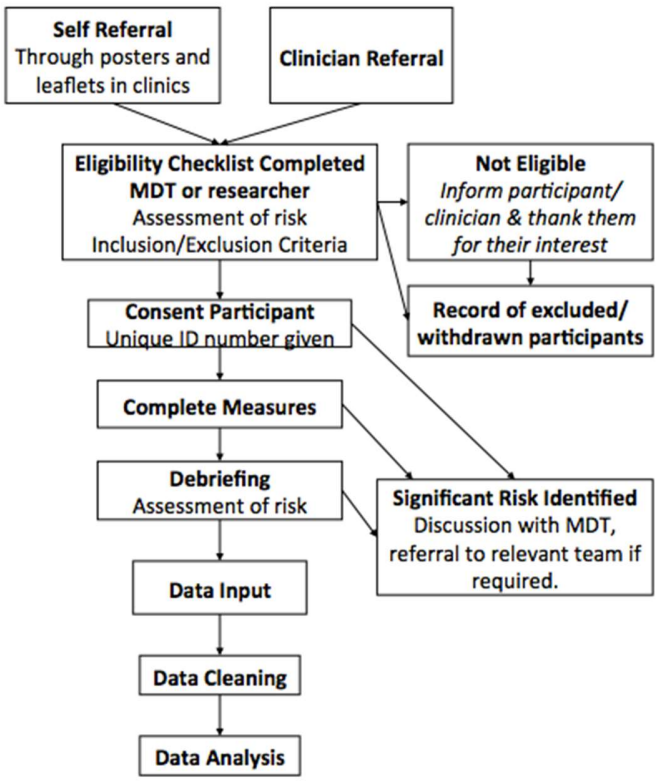
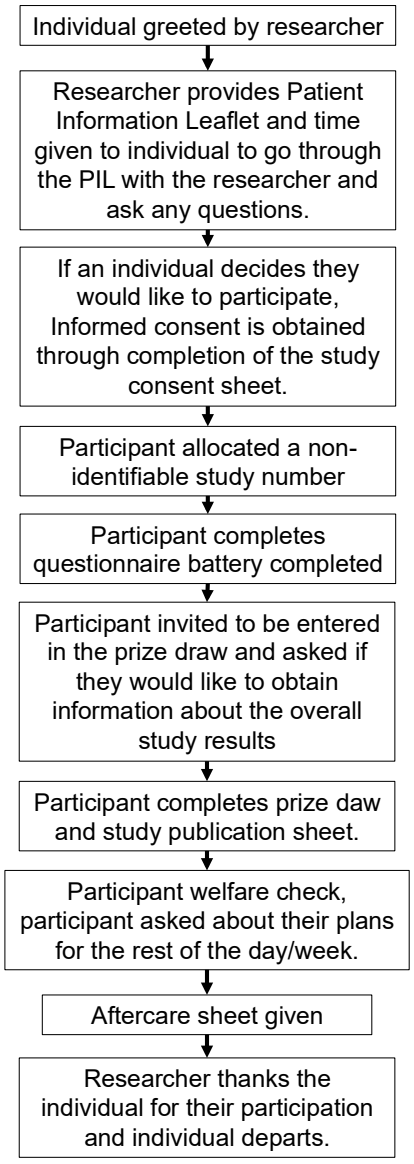
  0808 168 9111 www.vitctimsupport.org

Appendix Q

Clinical Group Recruitment and Procedure Diagrams





Appendix R

Risk Management Protocol

Exploring the impact of trauma and developmental factors in individuals with mental health difficulties

Risk Management Protocol – Clinical Groups

- Risk assessment will be completed throughout study-related contact. If participants experience any distress during or after participation, local NHS procedures will be followed and advice from care teams and supervisors will be sought immediately.
- Participants, clinicians and care teams will be informed of the content of the questionnaire booklet and potential distress by sensitive questions will be emphasised prior to participation.
- The Eligibility and Diagnostic Checklist (Version 1, September 2016) will be completed for each participant prior to ensure that only participants deemed eligible are offered study appointments.
- Study appointments will be scheduled at suitable NHS locations and preferably prior to routine care appointments. Home visits will only be offered to clients that presents with low risk and in agreement with the client's care team.

If risk is revealed during or after study participation

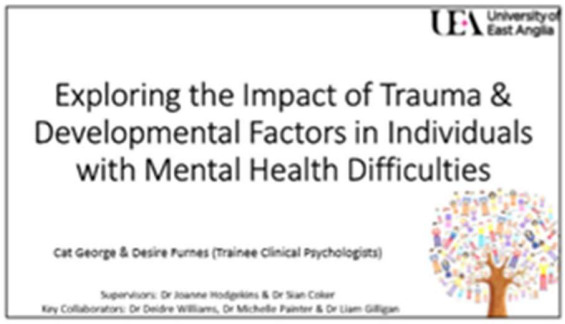
- Study participation will be stopped immediately and a thorough risk assessment will be conducted.
- Appropriate action will then be taken depending on the outcome of the risk assessment and will be considered on a case-by-case basis.
- If the participant remains distressed, relevant care teams and supervisors will be approached for advice and involved immediately to ensure safety.
- All participants will be provided with aftercare sheets, which give participants clear guidance on how to proceed should they need support.

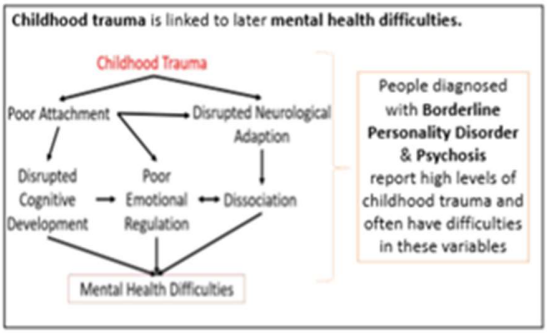
Risk Management Protocol – NonClinical

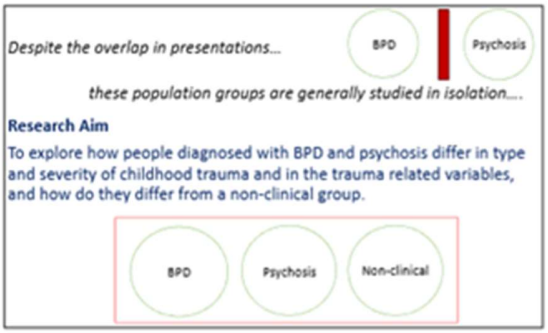
- As the non-clinical group is recruited online, risk will only be assessed during the initial phase when completing the Eligibility and Diagnostic Checklist; participants that answers YES to the question "Are you currently or have you ever been under the care of a mental health NHS team?" will be deemed ineligible for participation. Further, if participants answers YES to the question "Do you currently have any thoughts or plans about hurting yourself of ending your life?", they will be excluded from participating in the study and redirected to a page providing aftercare information and signposting them to relevant services.
- Participants can chose to withdraw at any point by closing down the online study site.
- After participants complete the questionnaires they will be provided with signposting information and aftercare information that they can choose to email to themselves. Participants will be strongly encouraged to make contact with health care professionals should they need support.

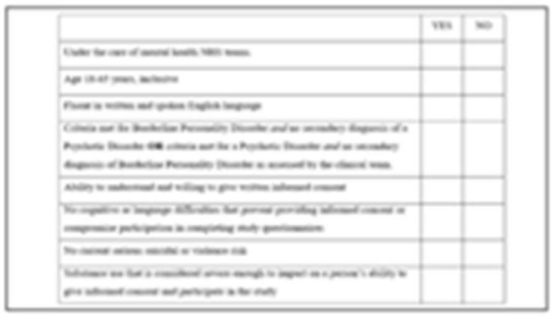
Appendix S

Clinical Recruitment Presentation









	YES	NO
Under the care of mental health NHS teams.		
Age 18-65 years, inclusive		
Fluent in written and spoken English language		
Criteria met for Borderline Personality Disorder *and* no secondary diagnosis of a Psychotic Disorder OR criteria met for a Psychotic Disorder *and* no secondary diagnosis of Borderline Personality Disorder as assessed by the clinical team.		
Ability to understand and willing to give written informed consent		
No cognitive or language difficulties that prevent providing informed consent or competent participation in completing study questionnaires		
No current serious suicidal or violence risk		
Substance use (but a coincidental urine sample is negative) or a person's ability to give informed consent and participate in the study		


The Questionnaire Booklet
1 hour 10 mins


Unfortunately we cannot pay for time or travel expenses. Participants will be invited to enter into a prize draw to receive one of four £20 amazon vouchers as a thank you for taking part
We can visit people at home or organise appointments at a clinic (e.g. before a routine clinic appointment)
The findings will be published and made available to all participants, clinicians and local services involved.


impact
The findings of this study will contribute to:
Enhanced understanding of how childhood trauma impacts on psychobiological functioning in adulthood
A better understanding of how people develop distinct mental health problems in response to trauma
Improved understanding of comorbidities between BPD and Psychosis
Hopefully improve the way we help people to recover from mental health difficulties


Thank you for listening
Questions?
Comments?

Appendix T

Consent forms

Clinical Group

Centre Number ____ Study Number ____ Version 1, February, 2017

Patient Identification Number _____

University of East Anglia

Exploring the impact of trauma and developmental factors in individuals with mental health difficulties

Participant Consent Form

Researchers: Cat George and Desire Furnes

Please initial box

1. I confirm that I have read and understand the Participation Information Sheet dated .../.../... (Version...) for the above study. I have had the opportunity to consider the information, ask questions and have had these answered satisfactorily. ☐
2. I understand my participation is entirely voluntary and that I am free to withdraw at any time without giving any reason and without my medical care or legal rights being affected in any way. I understand that if I choose to withdraw my consent after the data has been analysed it will not be possible to remove my data from the study. ☐
3. I understand that the relevant sections of my medical notes may be looked at by the study researchers and individuals from the Sponsor, regulatory authorities or from the NHS organisations, 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 take part in the above study ☐

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

When completed: 1 for participant; 1 for researcher site file; 1 (original) kept in medical notes.

Non-Clinical Group

Online Consent Version 1, February 2017

Exploring the impact of trauma and developmental factors in individuals with mental health difficulties

Online Participation Consent Form Template

Insert PIS here

1. I have read and understand the Participant Information Sheet (Version X, Date XX) from *insert website address.com* for this study. I have had the opportunity to consider the information and know I can contact the researcher to ask questions.
    a. Yes
    b. No
2. I understand my participation is entirely voluntary and that I am free to withdraw at any time without giving any reason and without my medical care or legal rights being affected in any way. I understand that I can withdraw my data from the study by emailing the researcher with my unique code. I understand that if I choose to withdraw my consent after the data has been analysed it will not be possible to remove my data from the study.
    a. Yes
    b. No
3. I am not currently and have never received mental health care treatment
    a. Yes
    b. No
4. I agree to take part in this study
    a. Yes
    b. No

Appendix U

Demographic Information Sheet

Demographic Information Sheet Version 1, September 2016

Exploring the impact of trauma and developmental factors in individuals with mental health difficulties

DEMOGRAPHIC INFORMATION SHEET

Age _____ years

Gender ☐ Male ☐ Female

Ethnicity ☐ White British ☐ Asian British ☐ Black British

Other, please specify_____

Level of education

☐ Primary School ☐ Secondary School ☐ College

☐ Undergraduate ☐ Masters ☐ PhD/Doctoral

Other, please specify_____

Employment status

☐ Employed ☐ Unemployed ☐ Student

Other, please specify_____

Marital status

☐ Married ☐ Separated ☐ Divorced

☐ Widowed ☐ Single ☐ Living with partner

Other, please specify_____

Are you currently experiencing any mental health difficulty?

☐ YES ☐ NO

If YES, please specify_____

Are you receiving or have you ever received care for mental health difficulties?

☐ YES ☐ NO

If YES, please specify_____

Appendix V

Online Procedure Template

Version 1, September 2016

Exploring the impact of trauma and developmental factors in individuals with mental health difficulties

Online Procedure Template

Insert Participant Information Leaflet here

Insert Online Participation Consent Template here

1. To be entered into the competition to win one of four £20 vouchers, please indicate below. Please provide our email address to enable us to contact you.
    a. Yes, I would like to be entered
        i. Email:
    b. No, I would not like to be entered

Insert electronic Demographic Information Sheet here

Insert research questionnaires (with relevant guidance at the top of each questionnaire) here

Insert electronic Aftercare Sheet here

Would you like a copy of the After Care information to be emailed to you?

a. Yes, I would like the After Care information to be sent to me
    i. Email:
b. No, I would not the After Care information to be sent to me

Version 1, September 2016

Thank you for your participation in this research

The aim of the research is to our study is to get a better understanding of how childhood trauma can impact on mental health later in life.

The results of this study will not include your name or any other identifying characteristics. This research did not use deception.

If you have any questions relating to the study please contact a member of the research team on the email address below. You may request a summary of the research findings of this project. If you would like to receive a summary of the findings please contact us on the email address below.

Insert study contact information

If you need to talk to someone about any distress which may have resulted from participating in this study please follow guidelines given in the After Care information sheet such as contacting your GP.

Appendix W

Author permission to use the Psychosis Attachment Measure (Berry, Wearden, Barrowclough & Liversidge, 2006)

Cat George (MED)

From: Katherine Berry <Katherine.Berry@manchester.ac.uk>
Sent: 20 April 2016 11:47
To: Cat George (MED)
Subject: RE: DClin Thesis Project: Trauma, Attachment and Psychosis

Follow Up Flag: Follow up
Flag Status: Flagged

Hi Cat

I am happy for you to use the PAM if you feel it is suitable. Trainees here normally measure trauma using the CTQ or THQ but the former has cost implications. We normally measure symptoms with the PSYRATS or PANSS although the latter requires training and is time consuming.

Best wishes Katherine

From: Cat George (MED) [C.George@uea.ac.uk]
Sent: 20 April 2016 11:32
To: Katherine Berry
Subject: DClin Thesis Project: Trauma, Attachment and Psychosis

Dear Dr Berry,

I am a 1st year DClin trainee at UEA and I am in the process of setting up my thesis project. I am planning on looking at attachment as a mediator on the association between trauma experiences and psychotic symptoms, in a community psychosis population. I am currently collaborating with Dr Michelle Painter and Dr Penny Chips in Cambridgeshire and they have recommended I contact you as the expert in this area - I have found your papers extremely useful. I would really appreciate some advice on the measures to use and what you would recommend are key things to control for.

Any thoughts on this would be much appreciated.

I look forward to hearing from you.

Best wishes,

Cat

Cat George
Trainee Clinical Psychologist
University of East Anglia
Faculty of Medicine and Health Sciences
c.george@uea.ac.uk

UEA
University of East Anglia

Appendix X

Power Calculation and Additional Statistical Analysis Information

Power Calculation.

G*Power 3.1 (Faul, Erdfelder, Lang, & Buchner, 2007) and power tables outlined in Clark-Carter (2004) were used to calculate sample size requirements.

To explore the between-group analysis (the primary research aim), most variables recommended a sample size of 100 participants (Effect Size (ES; here Cohen's d = .4, α = .05, power = .8) (Clark-Carter, 2004). For the between-groups analyses of the dichotomous trauma measure, the relevant chi squared analysis required a sample between 105 (ES (w) = .7, α = .05) to 135 (ES (w) = .6, α = .05), power = .8) with a power of 0.8 (df = 3) (Clark-Carter, 2004). For the point-biserial correlational analysis, where childhood trauma was the independent variable (IV) and the other variables were dependent variables (DV), a sample size of 82 participants is required (two-tailed, ES = .3, α = .05, power =.8) (G*Power 3.1).

Additional Statistical Analysis Information

Between-groups. Initial assessment found several outliers. Investigation revealed no data entry errors. All analysis was run with and without outliers from the different populations. The removal of outliers did not alter results and therefore all data points were retained. Levene's test indicated the assumption of homogeneity was violated for all variables ($p < .001$) and non-parametric testing was employed.

To assess for group differences between continuous dependent variables, Welch Tests were conducted. For categorical dependent variables, Fisher's Exact Test or Pearson's Chi-squared test were performed. For significant results, post-hoc comparisons explored relative group differences.

Mediation Analysis. Influential cases were determined by examination of Mahalanobis and Cooks distances, the Covariance Ratio and though examination of the standardised residuals. For all models, influential cases were detected, assessed and removed form subsequent analysis. Given that some IV's were highly correlated,

collinearity and multicollinearity were assessed using critical values for the Pearson's correlation (< .9), the variance inflation factor and the condition index score (<10) (Field, 2009; Tabachnick & Fidell, 2007). Across all models and predictors, multicollinearity was not present. Durbin-Watson statistic was utilised to assess independence of errors. All cases were within the critical range unless otherwise stated (Field, 2009). Homoscedasticity was assessed via viewing residual scatterplots and completing the Breusch-Pagan test using the plugin (Daryanto, 2013). For all analysis, heteroscedasticity was found therefore the heteroscedasticity-consistent standard error estimator (HC3) was adopted (Hayes, 2013).

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