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Research paper

Effects of repeated attachment security priming in outpatients with primary depressive disorders

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ABSTRACT

Background: The aim of this study was to assess the potential effectiveness of secure attachment priming in outpatients with depressive disorders.
Methods: Forty-eight participants engaged in secure attachment priming or neutral priming in the laboratory (Time 1), after which they received three daily consecutive primes via text message (Times 2–4), aimed at maintaining the effects from Time 1. A follow-up one day later (Time 5) was also included. Dependent measures were assessed at Times 1, 4 and 5.
Results: Participants in the secure attachment priming condition experienced higher felt-security than the control group at all time-points, indicating that the felt-security benefit was maintained through repeated priming. Secure priming had a greater impact on reducing symptoms of anxiety and depression in comparison to the control prime, though the differences were only significant at Time 4.
Limitations: The moderate sample size limited our statistical power.
Conclusions: This study was the first experiment using repeated secure attachment priming within a clinical sample. Our findings have potential clinical implications; security priming could be used alongside other treatments to improve outcome. Recommendations for further research are discussed.

1. Introduction

The global incidence of Major Depressive Disorder is 4.4% (Ferrari et al., 2013), dysthymia is 1.6% (Charlson et al., 2013) and anxiety disorders is 7.3% (Baxter et al., 2013). Depression is the second leading cause of disability according to the Global Burden of Disease Study (Ferrari et al., 2010). Mood disorders are expected to increase in incidence (e.g., National Institute for Health and Care Excellence, 2011a) and they are costly. Depression alone costs the UK £ 1.7 billion annually (National Institute for Health and Care Excellence, 2011b) and Major Depressive Disorder costs the USA $210.5 billion (Greenberg et al., 2015). Despite this, there is limited availability of psychological interventions (National Institute for Health and Care Excellence, 2011a). Depression and anxiety disorders are treated mainly using evidence-based interventions such as Cognitive Behavioural Therapy (CBT). These interventions have limited success (less than 50% recovery rate; Department of Health, 2012), thus making a strong case for the need for alternative interventions to improve this recovery rate. Dispositional secure attachment may buffer individuals from experiencing mood disorders (Mikulincer and Shaver, 2016). We here report a simple intervention, namely attachment security priming, which has potential to alleviate symptoms in clinical samples.

Attachment theory proposes that relationships with attachment figures lead to the formation of working models about self and others (Bowlby, 1969). Different caregiving experiences, particularly with attachment figures in early life, lead to the development of secure or insecure internal representations, which become templates for future relationships and emotion regulation (Ainsworth, Blehar, Waters, and Wall, 1978; Bowlby, 1988; Hazan and Shaver, 1987). Attachment orientations are conceptualised along two dimensions: *avoidance* of intimacy and *anxiety* about rejection (Brennan et al., 1998). An individual's position on these dimensions influences how that person manages stress and regulates affect (Schore and Schore, 2008). Secure individuals score low on both dimensions. Repeated interaction with sensitive, available attachment figures leads to *felt-security*, a sense that the world is safe and attachment figures are available in times of need.

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Securely-attached individuals are comfortable with closeness (Ainsworth et al., 1978), seek proximity to attachment figures in times of need, and are effective emotion regulators. Those who have over-protective, inconsistent and intrusive caregiving develop a hyper-activated attachment system that leads to poor affect regulation and hypervigilance to threat in the environment (the attachment anxious strategy). Attachment anxiety is associated with lower reported personal coping abilities (Mikulincer and Florian, 1998), which may increase a sense of vulnerability to perceived stressors. Those who experience consistently neglectful, rejecting caregiving may develop a deactivated attachment system that focuses attention away from potentially threatening relationships (the avoidant strategy). Individuals high in attachment avoidance are uncomfortable with closeness and mistrust others, and develop an over-reliance on the self rather than seek proximity to others. By adulthood individuals have cognitive access to both secure *and* insecure relationship (high in anxiety and/or avoidance) models (Baldwin et al., 1996; Rowe and Carnelley, 2003) developed through diverse relationship experiences.

1.1. Attachment and Depressive and Anxiety symptoms in Non-Clinical Samples

Multiple correlational studies have explored the link between attachment styles and affective disorders (Mikulincer and Shaver, 2016). Adults with insecure attachment patterns are more likely to experience depressive symptoms (Besser and Priel, 2005; Carnelley et al., 2016; Davila, 2001; Hortaçsu et al., 1993; Williams and Riskind, 2004). Attachment anxiety and avoidance are positively associated with higher self-reported anxiety symptoms (Gilbert and Irons, 2005; Mikulincer et al., 2001; Strodl and Noller, 2003; Wei et al., 2006). Conversely, securely-attached adults are likely to manage distress better and experience less depressed mood (Besser and Priel, 2003, 2005).

1.2. Attachment and affective disorders in clinical samples

Studies with clinical samples further support the correlation between insecure attachment and affective disorders. Anxious attachment predicts more severe depressive symptoms (Bekker and Croon, 2010; Eng et al., 2001), and worsening of depressive symptoms over 1-year (Ciechanowski et al., 2003). Higher attachment avoidance is linked to higher depressive symptoms in women recovering from depression relative to non-depressed women (Carnelley et al., 1994). Finally, patients with major depressive disorders report higher attachment avoidance than non-clinical groups (Reis and Grenyer, 2004). By contrast, secure attachment orientation is associated with reduced depressive symptoms (Hortaçsu et al., 1993; Kobak et al., 1993; Rice and Mirzadeh, 2000) and better treatment outcome with depression interventions (Reis and Grenyer, 2004).

Similarly, attachment anxiety is associated with the severity of social anxiety disorder (Eng et al., 2001) and anxious symptoms (Bekker and Croon, 2010). Avoidant attachment is higher in patients suffering from anxiety than non-clinical groups (Reis and Grenyer, 2004). Conversely, secure attachment is linked to lower anxiety (Mikulincer et al., 1993). The literature suggests that while attachment security acts as a buffer for affective disorders, insecurity is a vulnerability factor (Mikulincer and Shaver, 2016). In the current study we test this causal hypothesis.

1.3. Attachment security priming

The above studies explored associations between anxiety and/or depression and attachment orientations but did not test the direction of these relationships. This is possible through security priming, which involves bringing to mind an attachment figure that makes one feel secure. Once activated, either naturally during personal interactions or artificially in the laboratory using semantic priming (for a review see Carnelley and Rowe, 2010), secure mental models temporarily guide information processing, feelings and behaviour in orientation-congruent ways (Carnelley and Rowe, 2010; Mikulincer and Shaver, 2007). Security priming has positive outcomes in the short-term (Mikulincer and Shaver, 2016), including lowered depressed and anxious mood in a non-clinical sample (Carnelley et al., 2016). Secure-primed (versus neutral-primed) participants report higher felt-security (Luke, Sedikides, & Carnelley, 2012) and these effects can be extended by repeated security priming delivered in the lab (Carnelley and Rowe, 2007) or via text (Otway et al., 2014). For example, repeated security priming led to lower scores on dispositional attachment anxiety (Carnelley and Rowe, 2007), suggesting that priming can potentially affect trait-like measures via the repeated activation of secure internal working models.

Text messaging has been used successfully in interventions for various difficulties, including depression (Agyapong et al., 2012). Otway et al. (2014) developed a successful repeated attachment security priming methodology via text messaging in which texts are considered 'security boosters', aimed to maintain the effects of an initial secure prime over time: and found that felt-security can be maintained up to 2-days after the final secure-priming session. Both supraliminal (Mikulincer et al., 2001) and subliminal security priming (Mikulincer et al., 2001) can lead to a reduction in anxiety symptoms in a non-clinical sample. Carnelley et al. (2016) found that undergraduates primed with a secure attachment style reported lower anxious mood post-prime, which was maintained over a number of days through repeated priming. Security priming can potentially reduce psychobiological correlates of anxiety. Bryant and Chan (2015) found secure priming to contribute towards a reduction in salivary alpha amylase levels, whereas Norman et al. (2015) found that participants in the secure-prime (versus neutral-prime) condition experienced lower amygdala activation following threat.

The existing evidence of the impact-of attachment priming on depressive symptoms is limited. Carnelley et al. (2016) found that undergraduates primed with an anxious attachment style reported more depressive symptoms than those primed with neutral, secure or avoidant attachment styles, indicating a causal relationship between anxious attachment style and depression. In a subsequent study, Carnelley et al. (2016) found that repeated security (versus neutral) priming had a marginal effect in reducing depressive symptoms in undergraduates, a trend maintained one day after the final prime.

We here examine the effects of repeated security priming as a potential intervention for patients with depressive disorders. As security priming is simple and easily delivered, it is important to see its effects as an 'addition' to existing pharmacological and psychosocial treatments.

1.4. Aims, hypotheses, and analysis strategy

We explored whether priming secure attachment (versus neutral control) in a sample of patients with primary depressive diagnoses leads to differences in felt-security, and in anxiety and depressive symptoms. We also explored whether it was possible to keep a secure prime activated over 3 days via text messaging in a clinical sample. We hypothesised that participants in the secure-prime condition would report higher levels of felt-security and lower levels of depressive and anxiety symptoms, than those in the neutral-prime condition, at all post-prime time-points. We expected security priming to be beneficial to participants regardless of their dispositional attachment style and typical levels of depression and anxiety, therefore we measured and controlled for Baseline attachment anxiety, avoidance, depression, and anxiety as covariates when they reached criteria to be included in the model (Field, 2013). In addition, we investigated whether covariates moderated the effect of priming condition on the DVs. Finally, for completeness we examined whether time moderated the effects of covariates in an exploratory fashion.