

Systematic Review Protocol

Rumination: A meta-analysis of brooding and reflection in clinically depressed samples.

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1 RATIONAL FOR THE REVIEW

Response Styles theory posits that ruminative thinking styles contribute to the development and maintenance of depression (Nolen-Hoeksema, Marrow & Fredrickson, 1993). Within this model there is supportive evidence that ruminative cognitive processes contribute to the higher rates of depression in women, which begins in adolescence (Johnson & Whisman, 2013; Rood, Roelofs, Bogels, Nolen-Hoeksema & Schouten, 2009). Rumination is defined as ‘thoughts and behaviours that focus the depressed individual’s attention on his or her symptoms and the possible causes and consequences of those symptoms’ (Nolen-Hoeksema, Morrow & Fredrickson, 1993, p. 20). Being a symptom focused contemplative thought process, rumination can amplify and prolong depressed mood (Nolen-Hoeksema, et al, 1993) and empirical evidence has demonstrated a general association between rumination and depression (Nolen-Hoeksema, 2000). There is evidence that rumination is a vulnerability factor for depressive symptoms in adolescents and has been found to be associated with concurrent and future levels of depression in adolescents (Rood, Roelofs, Bogels, Nolen-Hoeksema & Schouten, 2009). A recent meta-analytic review by Aldo and colleagues (Aldao, Nolen-Hoeksema & Schweizer, 2010) conceptualized rumination within the broader emotional regulation literature across different disorders. The results of the meta-analysis further support that rumination is positively associated with depression and that across disorders (depression, anxiety, substance abuse and eating disorder) rumination showed a strong association with psychopathology. In keeping with the predictions of the theory, gender differences are evident in adolescent and adult samples with females having higher levels of rumination than males (Johnson & Whisman, 2013; Rood, et al, 2009).

Rumination can be further sub-divided into brooding – a maladaptive process, defined as a chronic and persistent self-focus on negative emotional states and unachieved standards (Treyner, et al, 2003; Takano & Tanno, 2009) – and reflection, which appears more adaptive and is defined as an open purposeful curiosity about the self (Treyner, et al, 2003; Takano & Tanno, 2009). Brooding and reflection have been measured by the Ruminative Response

Scale (Treyner et al, 2003) and the Rumination-Reflection Questionnaire (Trapnell & Campbell, 1999). Within adult community samples both scales evidence a two-factor brooding and reflection model of rumination (Takano & Tanno, 2009; Treyner, et al, 2003; Trapnell & Campbell, 1999). Treyner and colleagues (2003) found that brooding and reflection differentially predicted concomitant and future depressive scores, as well as differentially mediating gender differences in depressive scores. Brooding has been associated with more depression over time and reflection has been associated with less depression over time (Treyner et al. 2003; Takano & Tanno, 2009). Takano and Tanno (2009) found that self-reflection predicted self-rumination (but not the reverse) however once self-reflectors begin this process of reflection they become likely to ruminate about themselves. Reflection can quickly turn to brooding if individuals are not able to generate solutions that are effective in problem solving (Takano & Tanno, 2009). Brooding is considered a trait vulnerability to depression with continued evidence of elevated brooding in formerly depressed individuals (Joorman, Dkane & Gotlib, 2006). Higher levels of reflection are protective against suicidal ideation in formerly depressed individuals (Crane, Barnhofer & Williams, 2007) with deficits in the adaptive reflective thinking conferring a risk for increased suicidality. For currently depressed individuals the distinction between brooding and reflection is less clear. The relationship between reflection, brooding and depression appears to differ between clinical and nonclinical samples making it difficult to generalise findings from nonclinical samples to clinical populations (Whitmer & Gotlib, 2011). Whitmer and Gotlib (2011) failed to find a clear factor structure in a currently depressed sample and concluded that the distinction between reflection and brooding may be undetectable for currently depressed individuals (Whitmer & Gotlib, 2011).

Given the difference in findings between community and clinical samples the current meta-analysis aims to examine the overall strength of the evidence for a two factor structure to emotion-focused rumination and its relationship with depression in currently depressed adults. This will be done by computing overall effect sizes for these relationships. We hypothesise that brooding will demonstrate a strong positive association with levels of depression concurrently and longitudinally in currently depressed individuals. We also

hypothesise that reflection will be negatively associated with depressive symptoms longitudinally. Given the contradictory findings in relation to reflection and current depression, there is insufficient evidence to make a specific hypothesis about the nature of the concurrent relationship between reflection and symptoms of depression. However we expect the relationship to be different from that between brooding and symptoms of depression.

As rumination is hypothesised as a trait rather than state vulnerability to depression, elevated brooding scores would be expected across previously and currently depressed individuals compared to controls. Thus, supplementary analysis will be carried out to explore the differences between currently depressed, previously depressed groups and non-depressed control groups in the selected papers that report findings on these groups. Based on the response style theory a subgroup analysis of gender will also be completed (if the available data permits) to explore the moderating or mediating role of gender on the relationship between brooding, reflection and depression.

1.1 REVIEW QUESTION

- What is the nature of the concurrent and longitudinal relationships between reflective pondering and brooding with symptoms of depression in clinically depressed individuals?

1.2 ELIGIBILITY CRITERIA

1.2.1 Inclusion

- Cross-sectional and longitudinal designs
- Peer reviewed published articles and unpublished dissertation abstracts (to reduce the risk of publication bias).
- Clinically depressed samples
- Studies measuring brooding and reflection.
- 18+
- English language articles only
- Data – 1999 to present given that the hypothesised adaptive and maladaptive aspects of rumination were first identified (Trapnell & Campbell, 1999).

- Studies using psychometrically sound outcome measures.

1.2.2 Exclusion

- Duplicate samples from different articles
- Nonclinical samples (with symptoms of depression assessed by questionnaire)
- Studies where the sample is defined based on the presence of a neurodevelopmental disorder or acquired brain injury.
- Post intervention outcome measures (pre intervention or baseline measurement will be included if in line with inclusion criteria).
- Experimental designs
- Meta-analyses

2 SEARCH STRATEGIES

Key words will be used to search databases. Title and abstracts of retrieved articles will be reviewed against the eligibility criteria. Articles not meeting this criteria will not be included, full text articles will be retrieved for relevant articles and for studies that do not contain enough information to determine suitability in the abstract.

- A PRISMA flow diagram will be completed for identification, screening, eligibility and inclusion of articles for the review based on the eligibility criteria (Moher, Tetzlaff & Altman, 2009). After records are screened full text articles will be retrieved and assessed for eligibility. This will be done independently by two reviewers and inter-rater agreement calculated. Consensus agreement with a third reviewer (supervisor) will be discussed for those articles that raise questions about inclusion or exclusion in the meta-analysis based on the criteria. Weighted kappa statistic (based on relevant/irrelevant/unsure outcome about inclusion) will be calculated to assess the level of agreement for inclusion of studies into the review between the reviewer and another trainee clinical psychologist (Demster, 2011).
- Reference lists of relevant review papers and identified articles will be reviewed for any additional articles not identified by the search.
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The following databases will be searched:

- Psych info
- Medline
- Web of Science
- ProQuest Dissertations & Theses

2.1 KEY WORDS

The following search terms will be used:

(depression OR Major depression OR major depressive disorder OR clinical depression OR depressive disorder OR depress* OR dysthymi* OR treatment resistant depression)

AND

(rumination OR ruminative response scale OR rumination-reflection questionnaire OR emotion-focused rumination OR self-rumination)

AND

brooding OR (reflective pondering OR reflection OR reflect* OR self-reflection)

3 QUALITY CRITERIA

The Newcastle-Ottawa Scale (NOS) for assessing the quality of nonrandomised cohort studies will be used to assess quality (Wells et al, 2000). Based on the quality criteria a weighted factor will be assigned to the study (Demster, 2011; Thomas, Ciliska, Dobbins & Micucci, 2004). Publication bias will be explored using accepted methods such as funnel plots and fail safe n (Demster, 2011).

4 DATA EXTRACTION, ANALYSIS AND DISSEMINATION

A standardized data extraction form will be used and will include the following elements: study identifier, study design, sample size, descriptive statistics of participant demographics, name of outcome measures, mean and standard deviation scores on outcome measures and other relevant information (Demster, 2011). Effect sizes will be calculated in order to run a meta-analysis. Overall effect sizes will be calculated for brooding/depression and reflection/depression. If data is

unavailable, attempts will be made to contact the authors to obtain the required data, however if this is unsuccessful the study will not be included.

A meta-analysis will be used to analyse the results of the systematic review.

The meta-analysis will be submitted to a peer reviewed journal for publication (e.g. Clinical Psychology Review). The findings may also be disseminated via conferences, posters and web based media.

5 REFERENCES

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