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The association of perseverative negative thinking with depression, anxiety and emotional distress in people with long term conditions: A systematic review

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ABSTRACT

Objective: Depression is common in people with long term conditions, and is associated with worse medical outcomes. Previous research shows perseverative negative thinking (e.g. worry, rumination) predicts subsequent depression and worse medical outcomes, suggesting interventions targeting perseverative negative thinking could improve depression and medical outcomes. Previous studies recruited healthy individuals, however. This review aimed to determine the temporal relationship and strength of prospective association of perseverative negative thinking with depression, anxiety and emotional distress in people with long term conditions.
Method: Four electronic databases were searched for studies including standardised measures of perseverative negative thinking and depression, anxiety or emotional distress, and which presented prospective associations. Findings were narratively synthesized.
Results: Thirty studies were identified in a range of long term conditions. Perseverative negative thinking and subsequent depression, anxiety or emotional distress were significantly correlated in the majority of studies (bivariate $r = 0.23$ to $r = 0.73$). 25 studies controlled for confounders, and in 15 perseverative negative thinking predicted subsequent depression, anxiety or emotional distress. Results varied according to condition and study quality. Six of 7 studies found bivariate associations between depression, anxiety or emotional distress and subsequent perseverative negative thinking, though 2 studies controlling for key covariates found no association. Few studies assessed the impact of perseverative negative thinking on medical outcomes.
Conclusion: Strongest evidence supported perseverative negative thinking predicting subsequent depression, anxiety and emotional distress in people with long term conditions. Further prospective research is warranted to clarify the association of perseverative negative thinking with subsequent poor medical outcomes.

1. Introduction

Chronic physical illnesses (i.e. long term conditions – LTCs) are conditions that cannot currently be cured but can be managed with treatment e.g. asthma, diabetes, coronary heart disease. It is estimated that 15 million people in England have a LTC, and people with LTCs account for 70% of all health and care spending [1].

Depression is common in people with chronic physical illnesses [2,3] and is associated with worse medical outcomes such as increased morbidity and mortality [4–7], worse health-related quality of life [8–10], and increased healthcare utilisation [11,12]. Understanding the factors contributing to the development of depression among people with LTCs could therefore: i) help identify who is at increased risk of developing depression and worse medical outcomes, ii) facilitate the stratification and personalisation of psychological and/or medical management and iii) lead to the development of novel interventions that might improve both depression and other health outcomes. Biological, psychological and social risk factors for depression have been identified among people with long term conditions [13–17], though findings from previous research are often mixed and contradictory. Furthermore, many of the risk factors identified are inter-related and the most important factors predicting (and potentially causing) depression in people with LTCs remain unclear [18].

Perseverative negative thinking is a term used to describe processes such as worry and rumination, in which individuals experience repetitive, prolonged and recurrent negative thoughts about themselves, their symptoms, their problems, or their concerns [19]. Perseverative negative thinking predicts negative affect [20–25], including the onset, maintenance and relapse of depression (e.g. [26–40]). Such thinking also predicts adverse medical outcomes, such as poor cardiovascular health, impaired wound healing and immune dysfunction [41–43]. These findings suggest that perseverative negative thinking could be a potential target for interventions aimed at improving both medical and psychological outcomes. Most previous prospective research into perseverative negative thinking has focused on physically healthy

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populations, however. The characteristics of perseverative negative thinking and the nature of its associations with psychological outcomes among people with LTCs are not clear.

The aims of this systematic review are to clarify the temporal relationship and the strength of association between perseverative negative thinking and depression, anxiety and emotional distress among people with LTCs.

2. Method

This review was conducted following the guidance of the University of York Centre for Reviews and Dissemination [44] and is reported in accordance with the Preferred Reporting Items for Systematic Reviews and Meta-Analyses statement [45]. The review protocol was previously published [46].

2.1. Inclusion/exclusion criteria

Studies were included if they investigated among people with LTCs the prospective association between perseverative negative thinking, on the one hand, and depression, anxiety and emotional distress, on the other. Since we were interested in clarifying the temporal relationship, studies examining the prospective association between perseverative negative thinking and subsequent depression, anxiety or emotional distress, or the reverse association, i.e. depression, anxiety or emotional distress predicting perseverative negative thinking, were included.

Perseverative negative thinking was defined as repetitive, prolonged and recurrent negative thoughts about oneself and one's concerns (including worry, rumination, perseverative cognition, counterfactual thinking, mind wandering, post-event processing, habitual negative self-thinking and catastrophizing [20,47,48]). We did not include measures of constructive repetitive thought such as reflection, rehearsal, planning, and problem solving. Depression, anxiety and emotional distress was used to refer to symptoms of mood disorders and negative emotional states including negative mood. We defined LTCs broadly, as conditions which cannot be cured but which can be managed with treatment [1].

Studies meeting the following criteria were included:

- ***Population*** Studies in adults (>16 years) with any LTC.
- ***Interventions & Comparators*** Use of an intervention and comparator was not a requirement.
- ***Outcomes*** Studies including a standardised measure of perseverative negative thinking *and* a standardised measure of depression, anxiety or emotional distress (including negative mood and negative affect). Data were extracted on physical outcomes as well as depression, anxiety or emotional distress, where available.
- ***Study design*** Observational, prospective studies, and experimental or quasi-experimental studies. We anticipated that findings from such studies would clarify temporal relationships between perseverative negative thinking and depression, anxiety or emotional distress, enabling tentative causal inferences to be drawn. Cross-sectional and other study designs that would not allow such inferences were excluded.
- ***Other limiters*** No date or language restrictions were applied. Studies published as papers in peer reviewed journals, conference proceedings and dissertations were included.

2.2. Information sources and search strategy

MEDLINE, EMBASE, PsycINFO, and CINAHL databases were searched on 4th June 2013, and searches repeated on 19th June 2015 and 7th Sept. 2016. Search terms included subject headings and free text words relevant to: (1) depression, anxiety, emotional and psychological distress, (2) perseverative negative thinking, and (3) prospective study design (see Appendix A.1 for search strategy). As there is no comprehensive and definitive list of LTCs available, we did not search for studies of people with LTCs using electronic search terms; suitable studies of people with LTCs were identified by hand-searching papers meeting criteria 1–3 above, to maximise sensitivity of our search strategy. Backward and forward citation searches of eligible studies were undertaken, and authors of included studies were contacted to identify any additional unpublished studies.

2.3. Study selection[1]

Eligibility screening of titles and abstracts, and then of full text records, was completed independently by two reviewers. Agreement between reviewers was 80% at title/abstract screening stage, and 94% at full text screening. Disagreements were resolved by discussion, with the involvement of a third reviewer where agreement could not be reached. Findings from single, independent studies presented in multiple reports/publications were presented only once, to avoid double counting studies.

2.4. Data extraction

Data from included studies was extracted independently by two reviewers and included characteristics of the study (design, participants, measures, timing of assessments, physical health/medical outcomes included, statistical methods) and the study findings (covariates controlled, strength of association). Agreement between reviewers for the primary outcome of bivariate associations was 93%, with disagreements resolved by discussion. Authors were contacted for further data in cases where suitable measures were taken but outcomes of interest were not presented in the published papers.

2.5. Risk of bias

Risk of bias within each study was independently evaluated by two reviewers using the Effective Public Health Practice Project (EPHPP) Quality Assessment Tool [49]. Ratings were made for six components (selection bias, study design, confounders, blinding, data collection methods, and withdrawals). Each component was rated strong, moderate or weak, and additionally these ratings were combined into a global quality score, such that globally strong studies had at least 4 strong and no weak ratings, moderate studies had 1 weak rating, and weak studies had >1 weak rating. Minor adaptions to the confounders and blinding components of the EPHPP tool were necessary due to the design of the included studies. Agreement between reviewers for global quality ratings was 73%, with disagreements resolved by discussion.

2.6. Data synthesis

Characteristics and findings of included studies are summarised in tables. Findings are narratively synthesized (informed by the guidelines of the ESRC methods programme [50] where possible) based on grouping studies according to: i) type of perseverative negative thinking measured, ii) type of psychological outcome measured (i.e. depression, anxiety or emotional distress), iii) timing of follow-up (6 months or less versus >6 months), iv) type of LTC, and v) type of analysis conducted (bivariate versus multivariable).

[1] Supplementary information regarding study selection, data extraction and quality assessment is available in Appendix A.2.