



**LITERATURE REVIEW: Are Difficulties Disengaging from Perceived
Unattainable Goals Predictive of Depressive Symptoms? A Systematic
Review**

**EMPIRICAL PAPER: Goal Flexibility as a Predictor of Depression,
Rumination and Homesickness in Students**

Submitted by Mandeep Bachu, to the University of Exeter
as a thesis for the degree of Doctor of Clinical Psychology, May 2nd 2019

This thesis is available for Library use on the understanding that it is copyright material and that no quotation from the thesis may be published without proper acknowledgement.

I certify that all material in this thesis which is not my own work has been identified and that no material has previously been submitted and approved for the award of a degree by this or any other University.

Signature: 

Author's Declaration

The literature review was completed independently by the author. In terms of the empirical work, participants recruited between September 2018 and December 2018 were collected jointly by the author and another DClinPsy trainee, Emma Sewter. The online survey platform was created jointly and her project utilised additional measures for the separate project titled "Self-compassion, goal pursuit and well-being". All other aspects of the study were completed by the author including data entry, analysis, and write up.

Table of Contents

List of Tables	7
List of Figures.....	8
LITERATURE REVIEW	9
Abstract.....	10
Introduction.....	11
Self-Regulation Theory	11
Goal Adjustment.....	11
When is it Time to Disengage?	13
Aims	14
Method	15
Eligibility Criteria.....	16
Information Sources	18
Search Terms and Strategy	18
Study Selection	20
Data Extraction	20
Study Evaluation	20
Results	21
Critical Summary	33
Participants	33
Design.....	33
Measures	34

Running Head: GOAL FLEXIBILITY AS A PREDICTOR OF DEPRESSION

Goal Disengagement	34
Depression.....	34
Summary of Findings	35
Goal disengagement and depression in student samples.....	35
Goal disengagement and depression in older adults	36
Goal disengagement, depression and physical health.....	37
Goal disengagement and depression in a community sample.....	39
Discussion	39
Strengths and Limitations.....	45
Clinical Implications.....	46
Future Directions for Research	47
Conclusions.....	48
References	49
Appendices.....	61
Appendix A - Quality Assessment Tool for Observational Cohort and Cross- Sectional Studies	61
Appendix B - Preparation and Submission Requirements for Personality and Social Psychology Review	65
EMPIRICAL PAPER.....	67
Abstract.....	68
Introduction.....	70
Self-Regulation Theory	70
Goal Adjustment Theory	71

Running Head: GOAL FLEXIBILITY AS A PREDICTOR OF DEPRESSION

Rumination.....	73
Homesickness.....	74
Aims and Hypotheses	76
Method	79
Participants	79
Power Analysis	79
Design.....	80
Measures	80
The Goal Adjustment Scale (GAS).....	80
The Patient Health Questionnaire 8 (PHQ-8)	81
Perseverative Thinking Questionnaire (PTQ).....	81
Homesickness Questionnaire (HQ).....	82
Procedure	83
Analytic Strategy	83
Results	85
Sample Characteristics	85
Preliminary Analyses.....	86
Hypothesis 1	90
Hypothesis 1a	90
Hypothesis 1b	91
Hypothesis 1c	92
Hypothesis 1d	94
Hypothesis 2	96
Hypothesis 2a	96

Hypothesis 2b	98
Discussion	102
Goal disengagement and depression, rumination and homesickness	102
Goal reengagement and depression, rumination and homesickness.....	104
Limitations.....	107
Clinical Implications.....	108
Future Direction.....	109
Conclusion.....	110
Reference.....	111
Appendices.....	121
Appendix A - University of Exeter Ethical Approval.....	121
Appendix B - Study Questionnaires	123
Goal Adjustment Scale.....	123
Patient Health Questionnaire 8.....	125
Perseverative Thinking Questionnaire.....	126
Homesickness Questionnaire.....	127
Appendix C - Participant Information sheet.....	129
Appendix D - Consent Form.....	132
Appendix E - Debrief Form.....	135
Appendix F - Dissemination Statement	136
Appendix G - Preparation and Submission Requirements for Personality and Social Psychology Bulletin	137

List of Tables

Literature review

Table 1. Inclusion and Exclusion Criteria for the Literature Review.....	17
Table 2. List of Search Terms Used in the Database Query to Return Articles.....	19
Table 3. Summary of Study Characteristics, Key Findings and Rating of Selected Studies.....	23

Empirical paper

Characteristics of Participants Who Dropped Out or Were Excluded ($N = 36$) and of Final Sample ($N = 185$).....	84
Table 2. Means and Standard Deviations of All Study Variables.....	85
Table 3. Correlations between Goal Disengagement, Goal Reengagement, Depressive Symptoms, Rumination and Homesickness at each Time Point.....	87
Table 4. Hierarchical Regression Predicting Depressive Symptoms at Time 1.....	89
Table 5. Hierarchical Regression Predicting Rumination at Time 1.....	90
Table 6. Hierarchical Regression Predicting Homesickness at Time 1.....	91
Table 7. Hierarchical Regression Predicting Homesickness at Time 2.....	93
Table 8. Hierarchical Regression Examining Goal Reengagement and Goal Disengagement to Predict Depressive symptoms at Time 3 with Interactions.....	95

List of Figures

Literature review

Figure 1. Study identification and selection process adapted from PRISMA flowchart (Moher et al., 2009).....	22
--	----

Empirical Paper

Figure 1. Association between baseline levels of goal disengagement and baseline levels of homesickness, separately for participants with low versus high baseline levels of goal reengagement capacities.....	92
Figure 2. Interaction between baseline levels of goal disengagement and time 2 homesickness, separately for participants with low versus high baseline levels of goal reengagement capacities.....	94
Figure 3. Mediation model testing indirect effects of change in homesickness on the association between goal reengagement and depressive symptoms at time 3.....	98



SCHOOL OF PSYCHOLOGY
DOCTORATE IN CLINICAL PSYCHOLOGY

LITERATURE REVIEW

**Are Difficulties Disengaging from Perceived Unattainable Goals Predictive
of Depressive Symptoms? A Systematic Review**

Trainee Name: **Mandeep Bachu**

Primary Research Supervisor: **Dr Nick Moberly**

Senior Lecturer, Mood Disorders Centre

Secondary Research Supervisor: **Dr Pia Pechtel**

Wellcome Trust Research Fellow, Mood
Disorders Centre

Target Journal: **Personality and Social Psychology Review**

Word Count: 5976 words (excluding abstract, tables,
figures, captions for tables and figures,
appendices, footnotes, and references)

**Submitted in partial fulfilment of requirements for the Doctorate Degree in
Clinical Psychology, University of Exeter**

Abstract

Background: In the pursuit of goals, people may encounter obstacles that make some goals impossible to achieve. In such instances, consideration of disengaging from these goals may be adaptive for wellbeing and help protect against depressive symptoms that may otherwise occur by engaging with an unattainable goal.

Objectives: This review summarises literature on goal adjustment focusing specifically on goal disengagement and attempts to investigate if difficulty in disengaging from perceived unattainable goals predict change in depressive symptoms over time.

Method: Relevant articles were obtained from online databases PubMed, Web of Science, Web of Knowledge, Medline, PsycARTICLES and PsycINFO. The quality of these articles was assessed using the Quality Assessment Tool for Quantitative Studies.

Results: Ten articles were included in the review of which six were found to show that adaptive goal disengagement is predictive of reductions in symptoms of depression in future. However, interaction with other variables can impact the pattern of findings.

Conclusions: Goals are a fundamental part of human behaviour and the findings of the review highlight how adaptive goal disengagement can contribute to wellbeing and self-regulation. Furthermore, these findings may offer clinical applicability to help clients adjust their personal strivings and identify other meaningful goals.

Keywords: *Goal adjustment, goal disengagement, self-regulation, depression.*

Introduction

Goals can be conceptualised as internal representations of desired states, where states are broadly construed as outcomes, events or processes (Austin & Vancouver, 1996). The types of goals that people set for themselves and the motivation they have for pursuing these goals have been found to predict mood and wellbeing (Carver & Scheier, 1998).

Self-Regulation Theory

The conceptual framework of self-regulation is an important part of goal theory, which describes human behaviour as a process of moving towards and away from different kinds of goal representations (Rasmussen, Wrosch, Scheier, & Carver, 2006). Progress towards goals is associated with positive affect and low rates of goal progress are linked to negative affect (Carver & Scheier, 1998; Moberly & Watkins, 2010). Self-regulation theory describes how there may be situations where goals become unattainable. Initially, negative affect may ensue as a result of needing to abandon a personally relevant goal. However, without disengagement, negative feelings may develop into a state of hopelessness or helplessness when a person's commitment to the goal remains but they are unable to invest effort into achieving it (Klinger, 1975; Wrosch, Scheier, Carver & Schulz, 2003a). Therefore, a realistic perception and evaluation about goal attainment is necessary for making adaptive decisions about persisting or disengaging.

Goal Adjustment

In their goal adjustment theoretical framework, Wrosch and colleagues (2003a) conclude that when there are no opportunities to overcome obstacles in

the way of threatened goals, a person may need an alternative response rather than continued persistence. This may require the individual to disengage from the blocked goal and reengage with other goals. Goal adjustment theory postulates that individuals differ in their goal adjustment tendencies and that goal disengagement and reengagement are natural and adaptive responses when goals become unattainable (Wrosch, Scheier, & Miller, 2013).

There may be negative societal views that label goal disengagement as “giving up” or “quitting” (Handy, 2016). This may partly explain why some people find it challenging to disengage while others are able to withdraw and reengage in a new goal. The reluctance to disengage from unattainable goals is consistent with MacLeod and Conway’s (2007) idea of ‘painful engagement’, which describes how goal engagement is sustained through a belief that happiness is inexorably dependent on their attainment.

Disengagement is thought to occur when a person reduces both effort and commitment towards an unattainable goal and is an adaptive part of effective goal regulation. It is hypothesised that remaining mentally committed to a goal while reducing effort can impede goal disengagement, leading to symptoms of depression and compromising efforts to reengage in new goals (Wrosch et al., 2003a). Depression has been described as a disorder of self-regulation that involves failure to make progress towards goals (Strauman, 2002). Indeed, Pyszczynski and Greenberg’s (1987) self-regulatory perseveration theory describes how fruitless persistence on unattainable goals can create symptoms of depression through self-focused attention, which exacerbates negative mood and rumination on the goal failure. This is analogous to the impaired disengagement hypothesis (Koster, De Lissnyder, Derakshan, & De Raedt, 2011), which describes how failure to disengage from

negative information is an underlying process that contributes to ruminative depression.

While evidence is starting to emerge showing that goal adjustment capacities can predict better wellbeing and health (Wrosch, Scheier, & Miller, 2013) the mechanisms explaining how individuals disengage still remain largely unknown and the process of disengagement is not well understood (Ghassemi, Bernecker, Herrmann, & Brandstätter, 2017). Theoretically, however, much of the work on goal disengagement has emerged from Klinger (1975, 1977) who posited the incentive-disengagement cycle. This describes how an individual initially increases effort towards a blocked goal followed by a phase of resignation, allowing the individual to become open to engaging with new goals. Although Klinger's model has not been directly tested empirically, it has conceptualised goal disengagement as not being a discrete event but rather a lengthy and difficult process (Brandstätter, Herrmann, & Schüler, 2013).

When is it Time to Disengage?

Although evidence is emerging that shows support for adaptive goal disengagement, knowing when a goal is no longer attainable or the correct time to disengage is not straightforward, as abandoning a goal too early may be just as detrimental as misguided persistence. Adaptive disengagement may require an individual to re-evaluate goal-related circumstances and assess the pros and cons of continuation (Brandstätter & Schüler, 2012). Parallel to this may be a non-conscious process where the individual re-adjusts the value of the goal (Brandstätter, 2000). Therefore, *perceptions* of goal attainability and assessing how individuals *usually* react in the face of blocked goals may help to shed light on this.

Goal adjustment theory postulates that goal disengagement is associated with fewer depressive symptoms, however, much of the research is cross-sectional and offers little evidence for causal inferences as it is limited by a lack of temporal precedence and difficulties in conducting experimental manipulations of goal flexibility. Kraaij and colleagues (2008), for example, explored goal adjustment and psychological well-being in HIV-infected men and reported that as their study investigated coping strategies, goal adjustment, and well-being cross sectionally, no conclusions could be drawn about causality or temporal order of variables. They suggested that longitudinal investigations may be an opportunity to address these limitations.

Aims

The evidence presented above describes how goal disengagement can contribute to adaptive self-regulation and may be associated with fewer depressive symptoms. Studies investigating goal adjustment have looked at both cross-sectional and longitudinal associations of goal disengagement, however, there are no recent literature reviews that have examined whether difficulties with goal disengagement predict change in depressive symptoms over time. This could indicate goal disengagement as a potential vulnerability factor for depression, rather than just a correlate of it. Therefore, the aim of the current review is to identify and review relevant literature where difficulty with goal disengagement is predictive of change in depressive symptomology. Specifically, the current review will look to answer the question: does difficulty in disengaging from perceived unattainable goals predict change in depressive symptoms in the future?

While reengagement with new goals is an important part of goal adjustment, the current review will only examine goal disengagement as goal reengagement and goal disengagement are independent processes that can be investigated separately (Mens, Wrosch, & Scheier, 2017). Furthermore, investigating goal disengagement will help to maintain focus and novelty as no previous reviews have investigated this and its relationship with change in depressive symptoms. Finally, as goals feature in many prominent psychotherapies, such as cognitive behavioural therapy (Blenkiron, 1999), clinical implication of goal adjustment will also be discussed.

Method

The current review followed the systematic review guidelines developed by the Centre for Reviews and Dissemination (CRD, 2009). Screening of articles was based on recommendations and guidance from the Preferred Reporting Items for Systematic review and Meta-Analysis Protocols (PRISMA-P; Moher et al, 2015). This is a 17-item evidence-based protocol developed to help researchers with systematic reviews and meta-analyses. While PRISMA-P requires a description of the eligibility criteria using the PICOS (participants, interventions, comparisons, outcome(s) and study design) reporting system, the current review included observational studies, therefore, in addition utilised the Meta-analysis of Observational Studies in Epidemiology (MOOSE) guidelines of PECOS (participants, exposure(s), comparator(s)/control, outcome(s) and study design; Stroup et al., 2000; Floridis, Abeyaratne, & Majoni, 2015).

Eligibility Criteria

Studies were assessed on PECOS criteria as seen in Table 1. The current review focused on studies using a longitudinal design, therefore studies with other designs were excluded. Studies were eligible that had a minimal interval of two weeks between timepoints due to the way some measures assess depression symptoms over the previous two weeks (e.g., the Patient Health Questionnaire; Kroenke, Spitzer, & Williams, 2001). As the review was concentrating on goal disengagement as a predictor of change in depressive symptoms, it was necessary that there were two measures of depression, where one was measured with goal disengagement (i.e., at baseline) and then a subsequent measure of depression at a second point. Studies were included that predicted future depression where baseline levels of depression were controlled for.

Additionally, the current review focused on participants aged 18 years and older to create a focused population for the review. Studies that included at least one measure of goal disengagement that assessed attitudes or responses to blocked goals were selected for the review. Goal disengagement was assessed through self-report measures or behavioural measures of withdrawal from an experimenter assigned goal or an idiographic personal goal (or personal goals in general). A blocked goal was operationalised as being an experimental task or a personal life goal that could not be attained. A measure of depression was critical for the review; therefore, depression was operationalised as being measured through a psychometrically valid and reliable instrument of depressive symptoms or a diagnostic indicator of clinical depression (e.g., Structured Clinical Interview for DSM-IV; First, Spitzer, Gibbon, & Williams, 1996).

Table 1

Inclusion and Exclusion Criteria for the Literature Review

	Inclusion	Exclusion
Population	<ul style="list-style-type: none"> • Human participants including clinical and non-clinical populations. 	<ul style="list-style-type: none"> • Studies using samples of children and participants under 18 years old.
Exposure	<ul style="list-style-type: none"> • Studies assessing goal disengagement capacities where a goal is objectively impossible (e.g., an experimenter assigned task with no possible solution) or perceived to be impossible (e.g., a personal goal). • Use of self-report or behavioural measures of goal disengagement. 	<ul style="list-style-type: none"> • Studies that do not assess goal disengagement capacities specifically. • Studies that conflate disengagement and reengagement in the same scale (e.g. The tenacious goal pursuit (TEN) and flexible goal adjustment (FLEX) scales; Brandtstädter & Renner, 1990). • Studies only investigating goal reengagement.
Outcome	<ul style="list-style-type: none"> • Reliable and validated diagnostic measures of depression that is either: • Continuous symptom measure of depression. • Diagnostic assessment of depression. 	<ul style="list-style-type: none"> • Studies that examine wellbeing or positive/negative affect without depression.
Setting/Design	<ul style="list-style-type: none"> • Longitudinal studies <ul style="list-style-type: none"> ○ Goal disengagement (exposure) is measured before depression (outcome). ○ Two separate time-points measures of depression with a space of at least two weeks and researchers were able to predict later time point controlling for baseline. 	<ul style="list-style-type: none"> • Cross-sectional. • Longitudinal studies where goal disengagement predicted future depressive symptoms without controlling for baseline depression. • Experimental studies with no long-term follow up. • Retrospective • Qualitative. • Single-case. • Non-peer reviewed. • Meta-analysis.

Information Sources

Articles were sourced from online databases with no date restrictions in place. All searches were carried out within the 'title and abstract' field to ensure that only relevant articles and keywords were searched that also matched the criteria of the research question. Computerised searches were conducted within PubMed, Web of Science, Web of Knowledge, Medline, PsycARTICLES and PsycINFO. The reference lists of key author articles were also searched to ensure that no relevant articles had been excluded. Due to resource limitations a search for grey literature was precluded.

Search Terms and Strategy

The search used key terms and words that had been identified from the PECOS inclusion criteria and reviewing keywords and concepts of seminal authors in the field of goal disengagement including Carsten Wrosch and Jutta Heckhausen. Once search terms had been identified that reflected the PECOS elements, a search query was constructed using these terms and synonyms, as seen in Table 2.

Table 2

List of Search Terms Used in the Database Query to Return Articles

	Goal Disengagement (Section 1) "AND"	Depression (Section 2)
Individual Search Terms (in title or abstract)	(goal* adj5 disengag*) OR (goal* adj5 flexib*) OR (goal adj5 revis*) OR (goal* adj5 adjust*) OR (goal* adj5 accommodat*) OR (goal* adj5 assimilat*) OR (goal* adj5 adapt*) OR (striving* adj5 disengag*) OR (striving* adj5 flexib*) OR (striving* adj5 revis*) OR (striving* adj5 adjust*) OR (striving* adj5 accommodat*) OR (striving* adj5 assimilat*) OR (striving* adj5 adapt*) OR (personal project* adj5 disengag*) OR (personal project* adj5 flexib*) OR (personal project* adj5 revis*) OR (personal project* adj5 adjust*) OR (personal project* adj5 accommodat*) OR (personal project* adj5 assimilat*) OR (personal project* adj5 adapt*) OR (current concern* adj5 disengag*) OR (current concern* adj5 flexib*) OR (current concern* adj5 revis*) OR (current concern* adj5 adjust*) OR (current concern* adj5 accommodat*) OR (current concern* adj5 assimilat*) OR (current concern* adj5 adapt*) OR (life task* adj5 disengag*) OR (life task* adj5 flexib*) OR (life task* adj5 revis*) OR (life task* adj5 adjust*) OR (life task* adj5 accommodat*) OR (life task* adj5 assimilat*) OR (life task* adj5 adapt*)	"depress*" OR "dysphor"

Boolean logic was used to construct a search query where the operator 'OR' was applied to make sure all relevant terms were used in the query, while the operator 'AND' combined terms and helped to focus the query. Truncation was used to cover terms that had the same initial root of a word but a different

Running Head: GOAL FLEXIBILITY AS A PREDICTOR OF DEPRESSION

ending (e.g., “disengag* to cover disengagement, disengaged and disengage).

To further maximise the query return, the operators ‘adj5’ and ‘NEAR5’ were included so that words had to appear within five words of each other (e.g., “(goal* adj5 disengag*)”).

Study Selection

The software Endnote was used to collate all results from the database searches. The first selection stage involved removing duplicates from overall results. The titles and abstracts yielded from the search were then individually screened to assess whether they met the PECOS eligibility criteria. Following the screening stage, selected articles for the review were read in full to assess suitability. An independent reviewer assessed a randomly selected six records for eligibility, which produced 100% agreement ($\kappa = 1.0$).

Data Extraction

Suitable articles for the review were identified using the PECOS criteria and details of the studies, including authors, design, sample and key results and effect sizes were extracted and recorded into Table 3.

Study Evaluation

The quality of the studies identified for the review was evaluated using the Quality Assessment Tool for Observational Cohort and Cross-Sectional Studies (National Institute of Health National Heart, Lung and Blood Institute, 2014; Appendix A). This is an appraisal tool that can be used in systematic reviews with longitudinal studies and assess biases and quality on 14 different

criteria which are used to identify an overall quality rating of good, fair or poor. Using the marking criteria to guide judgement, studies that were given a score of below 10 were considered to be of poor design and studies rated 13 or above were considered to have a strong design. The assessment tool was used to evaluate all eligible articles and an independent rater assessed the quality of four studies in full, yielding 100% agreement ($\kappa = 1.0$).

Results

The results of the search process from the databases are illustrated in Figure 1. A summary of the study characteristics, their key findings and ratings are listed in Table 3.

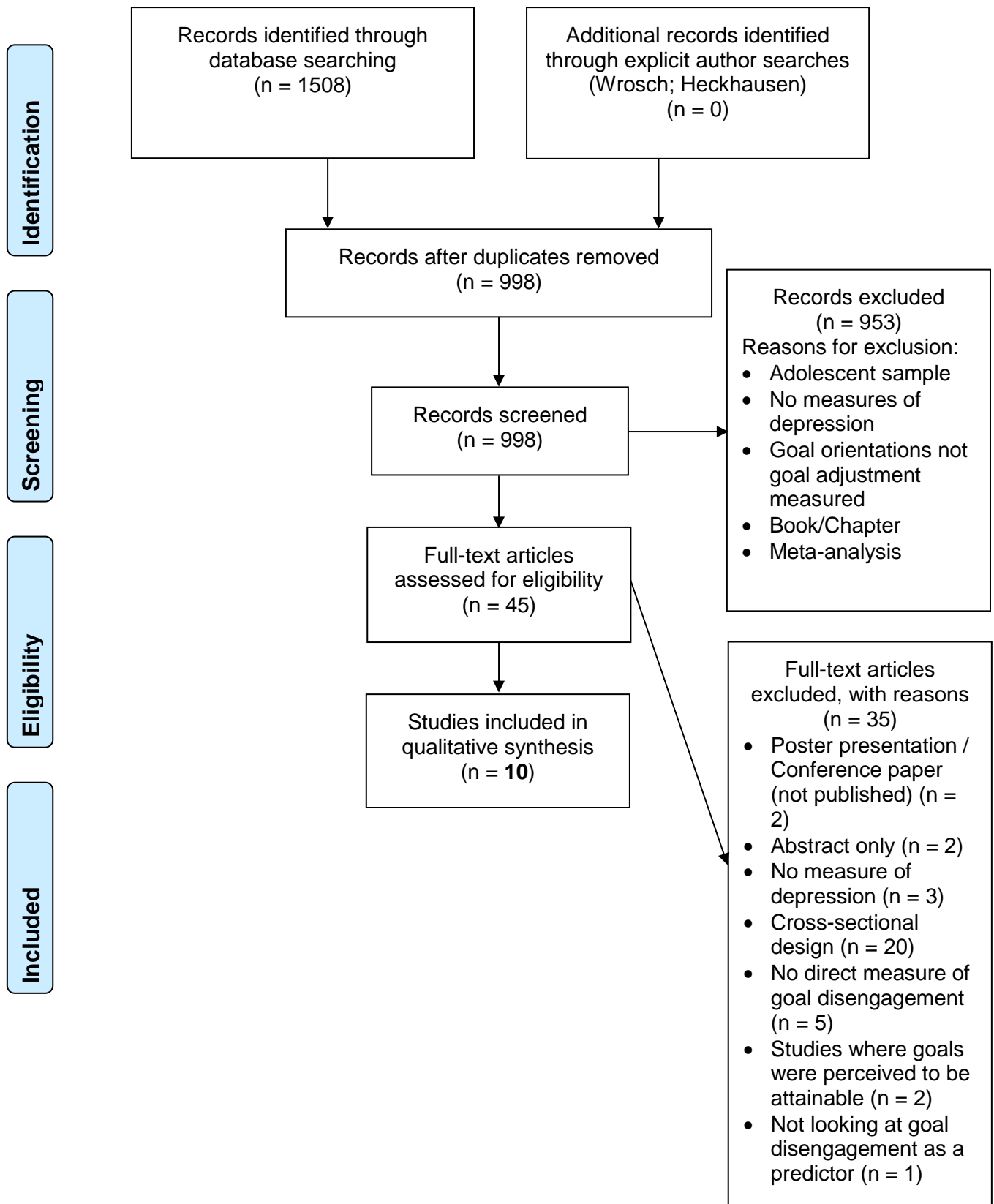


Figure 1. Study identification and selection process adapted from PRISMA flowchart (Moher et al., 2009).

Table 3

Summary of Study Characteristics, Key Findings and Rating of Selected Studies

Authors	Design	Sample and Location of Study	Measure(s)	Results & conclusion	Evaluation	Quality Assessment Tool for Observational Cohort and Cross-Sectional Studies Rating
Arends, Bode, Taal, & Laar (2016)	Three time points with goal disengagement and depression measures administered six months apart.	<p>Location: Netherlands</p> <p>Time 1 Sample Size: 331 participants aged 18 years or older.</p> <p>129 males 202 females</p> <p>Age range: 24-91 $M_{age} = 62.49$.</p> <p>Time 3 Sample Size: 262 participants</p> <p>105 males 157 females</p> <p>Age range: 32-89 $M_{age} = 62.07$</p>	<p>Measures of Goal Disengagement:</p> <p>GAS</p> <p>Measures of Depression:</p> <p>HADS</p>	<p>Three distinctive patterns of goal management were identified: Moderate engagement', 'Broad goal management repertoire', and 'Holding on'. Baseline demographic variables of age and sex were controlled for as well as disease-related variables.</p> <p>Key finding: The 'holding on' cluster, i.e., low goal disengagement, had significantly higher levels of depression over time (controlling for baseline depressive symptoms) than patients in both other clusters: $\beta = 0.96, p = .04$</p>	<p>Strengths:</p> <ul style="list-style-type: none"> • Large sample size. • Control of covariates including sex, age and disease related variables. <p>Limitations:</p> <ul style="list-style-type: none"> • Attrition impaired replication of cluster solution over three measurement points. • Data not generalisable to participants who work as sample largely consisted of individuals with no job or retired. • Low internal consistency of goal disengagement sub-scale at baseline. 	<p>9/14</p> <p>Overall: Poor</p>

Running Head: GOAL FLEXIBILITY AS A PREDICTOR OF DEPRESSION

Boudrenghien, Frenay, & Bourgeois (2012)	Two time points of depression assessment administered four months apart. Goal disengagement attitudes only measured at time 1.	Location: Belgium Time 1 Sample Size: 357 student participants aged 18 years or older. 197 females 151 males 9 missing values $M_{age} = 19.29$. Time 2 Sample Size: 186 participants	<p>Measure of Goal Disengagement:</p> <ul style="list-style-type: none"> Adapted GDS from the GAS to measure the ease with which students think they would be able to reduce their effort and commitment towards educational goals. Actual goal disengagement measured by students who dropped out of education. Ten items, mainly adapted from Galand (2001) to assess perceived goal attainability. <p>Measures of Depression:</p> <ul style="list-style-type: none"> Ten items were adapted from two depression scales, namely the BDI and the Zung Self-Rating Depression Scale). 	<p>Envisaged and actual goal disengagement was found to be predictive of depression, however, interactions with other variables moderated the strength of the effect size.</p> <p>Key Finding: When controlling for baseline levels of depression, envisaged and actual goal disengagement predicted lower depressive symptoms at time 2 ($\beta = -0.16$; $p < .05$ and $\beta = -0.33$; $p < .001$ respectively). Furthermore, when a goal was perceived to have low attainability, envisaged goal disengagement at baseline predicted a decrease in symptoms of depression ($\beta = -0.18$; $p < .05$)</p>	<p>Strengths:</p> <ul style="list-style-type: none"> Measure of actual educational goal disengagement and envisaged educational goal disengagement. Additional measure of perceived goal attainability. Large initial sample size <p>Limitations:</p> <ul style="list-style-type: none"> Participants who dropped out of study affected significance of disengagement findings. Construction and assessment of goal attainability poorly defined. Design limitation of adapting and conflating two different depression measures. Use of subgroup analysis to analyse interactions is not reliable increasing likelihood of type-I errors. 	8/14 Overall: Poor
--	--	--	---	--	---	----------------------------------

Running Head: GOAL FLEXIBILITY AS A PREDICTOR OF DEPRESSION

Coffey, Gallagher, & Desmond (2014)	Two time points of goal disengagement and depression assessment each administered six months apart.	Location: Ireland. Time 1 Sample Size: 98 participants aged 18 years or older. Time 2 Sample Size: 64 participants 53 males 11 females Age range: 28-89 $M_{age} = 63.56$	Measures of Goal Disengagement: GAS Measures of Depression: BDI-II	Goal disengagement was found to be a significant predictor of depressive symptomatology. Higher dispositional goal disengagement predicted lower depressive symptomatology. Key finding: When controlling for baseline depression, goal disengagement on admission significantly predicted fewer symptoms of depression six months post discharge ($\beta = -0.29, p \leq .05$).	Strengths: <ul style="list-style-type: none"> • Inclusion of covariables in analysis, including age, gender, education levels and marital status. Limitations: <ul style="list-style-type: none"> • Limited generalisability as sample was selected from a prosthetic rehabilitation programme. • Relatively low internal consistency for goal disengagement. 	11/14 Overall: Fair
Dunne, Wrosch, &	Two time points of depression	Location: Canada	Measures of Goal Disengagement:	Older adults with functional disabilities who	Strengths: <ul style="list-style-type: none"> • Six-year 	10/14

Running Head: GOAL FLEXIBILITY AS A PREDICTOR OF DEPRESSION

Miller (2011)	assessment administered six years apart. Goal disengagement attitudes only measured at time 1.	Time 1 Sample Size: 215 participants aged 60 years or older. Time 4 Sample Size: 135 72 females 63 males Age Range: 64-90 M _{age} = 71.65	GAS Measures of Depression: CES-D	had difficulties disengaging from unattainable goals reported more symptoms of depression at follow up. Key Finding: Baseline levels of goal disengagement capacities were significantly associated with six-year change in depressive symptoms when controlling baseline levels of depression where higher goal adjustment was associated with fewer symptoms of depression $\beta = -.26, p < .01$.	measurement points <ul style="list-style-type: none">• Control of covariates including age, sex and socioeconomic status. Limitations: <ul style="list-style-type: none">• Underlying chronic illness could have made it more difficult for participants to disengage from unattainable goals.• Low internal consistency for goal disengagement.	Overall: Fair
Eddington (2014)	Two time points of depression assessment administered ten	Location: North America Time 1 Sample	Measures of Goal Disengagement: GAS	Goal disengagement was not a significant predictor of change in depression.	Strengths: <ul style="list-style-type: none">• Large initial sample size.	10/14 Overall: Fair

Running Head: GOAL FLEXIBILITY AS A PREDICTOR OF DEPRESSION

	months apart. Goal disengagement attitudes only measured at time 1.	<p>Size: 388 student participants aged 18 years or older.</p> <p>273 females 95 males 20 participants did not report gender</p> <p>Age range: 18-28 $M_{age} = 18.8$</p> <p>Time 2 Sample Size: 136 participants</p> <p>112 females 24 males</p> <p>$M_{age} = 18.86$</p>	<p>Measures of Depression:</p> <p>BDI-II, PHQ-9</p>	<p>Key Finding:</p> <p>As a main effect, goal disengagement was not significant in predicting change in depression symptoms $\beta = -0.05, p > 0.05$. The interaction between socially-prescribed perfectionism and goal disengagement was significant such that perfectionists who did not disengage reported increase in depression ($\beta = -0.24, p < .01$).</p>	<p>Limitations:</p> <ul style="list-style-type: none"> • High rate of attrition. • Lack of consideration of confounding variables. • Some measures were administered retrospectively (e.g. PHQ-9 was only administered at follow up). 	
Jobin & Wrosch (2016)	Two time points of depression assessment administered six years apart.	<p>Location: Canada</p> <p>Time 1 sample: 215 participants aged 60 years or older.</p>	<p>Measures of Goal Disengagement:</p> <p>GAS</p>	Results showed that goal disengagement capacities buffered against longitudinal increases in participants' cold	<p>Strengths:</p> <ul style="list-style-type: none"> • 6-year longitudinal design • Use of bootstrapping to strengthen results. 	10/14 Overall: Fair

Running Head: GOAL FLEXIBILITY AS A PREDICTOR OF DEPRESSION

	Goal disengagement attitudes only measured at time 1.	Time 2 Sample: 131 participants 71 females 60 males Age range: 64-90 $M_{age} = 72$ (data only reported for time 2)	Measures of Depression: CES-D	symptoms, and this was mediated by fewer depressive symptoms. Key Finding: Goal disengagement capacities were significantly associated with fewer increases in depressive symptoms among older-old adults (estimated for age 85: $B = 1.15$, $SE = 0.32$, $p < .05$), but not among younger-old adults (estimated for age 65: $B = 0.10$, $SE = 0.14$, $p > .05$). The interaction between age and goal disengagement capacities predicted changes in depressive symptoms, $F(1, 124) = 6.21$, $p = .01$.	<ul style="list-style-type: none"> • Control of covariates in analysis. Limitations: <ul style="list-style-type: none"> • Limited sample size. • Relatively low internal consistency for goal disengagement. 	
Lam et al. (2016)	Five time point measurements of depression at baseline then again at 6 weeks, 3	Location: Hong Kong Time 1 Sample Size: 193 women recently diagnosed	Measures of Goal Disengagement: GAS Measures of	High goal disengagement was only associated with lower initial depression and not as a predictor of change in depression.	Strengths: <ul style="list-style-type: none"> • Large sample size • Low attrition • Rate of change measured over five time points. 	11/14 Overall: Fair

Running Head: GOAL FLEXIBILITY AS A PREDICTOR OF DEPRESSION

	months, 6 months and 12 months post-baseline. Goal disengagement attitudes only measured at time 1.	with advanced breast cancer aged 18 years or older. Time 5 Sample Size: 172 participants $M_{age} = 51.97$	Depression: HADS	Key Finding: Goal disengagement (estimated coefficient = -0.39, $p = .004$) significantly predicted initial depression scores at baseline but not rate of change (coefficient = 0.06, $p > .05$).	Limitations: <ul style="list-style-type: none"> • Uncertain causality of cross-sectional associations. • Multicollinearity between anxiety and depression reported. 	
Thompson, Stanton, & Bower (2013)	Two time points of depression assessment administered three months apart. Goal disengagement attitudes only	Location: North America Time 1 Sample Size: 114 female participants aged 18 years or older.	Measures of Goal Disengagement: Six item scale to assess situational goal disengagement that related to a life goal that participants	Higher situational goal disengagement was not associated with a reduction in depressive symptoms but rather an increase in these symptoms. Key Finding:	Strengths: <ul style="list-style-type: none"> • Measured situational and dispositional goal adjustment. • Low attrition rate. • Consideration of covariates in analysis. 	11/14 Overall: Fair

Running Head: GOAL FLEXIBILITY AS A PREDICTOR OF DEPRESSION

	measured at time 1.	Time 2 Sample Size: 103 participants $M_{age} = 57.2$	were currently giving up or had given up because of their cancer and its treatment; GAS Measures of Depression: CES-D	Higher situational goal disengagement ability predicted an increase in depressive symptoms ($\beta = .25$, $p < .01$). No other analyses were significant at $p < .05$.	Limitations: <ul style="list-style-type: none"> • Measures of situational goal adjustment had low reliability • Small sample size. • Short time span for longitudinal measurements. 	
Wallace et al. (2012)	Two time points of depression assessment administered two years apart. Goal disengagement attitudes only measured at	Location: North America Time 1 Sample Size: 271 participants aged 60 years or older. $M_{age} = 69.63$	Measures of Goal Disengagement: OPSCS Measures of Depression: HRSD-24	Disengagement strategies predicted earlier depression remission, when controlling for prior depression severity, particularly in the subgroup of individuals with greater severity of baseline	Strengths: <ul style="list-style-type: none"> • Generalisability of the sample population • Inclusion of covariates in analysis. • Two-year observation period. 	10/14 Overall: Fair

Running Head: GOAL FLEXIBILITY AS A PREDICTOR OF DEPRESSION

	time 1.	71 males 200 females Time 2 Sample Size: 234 participants		depression. Key Finding: Greater disengagement at baseline predicted earlier time to remission ($exp(\beta) = 1.05, p = .04$).	<ul style="list-style-type: none"> • Low attrition Limitations: <ul style="list-style-type: none"> • Measure of goal disengagement had low reliability. 	
Wrosch, Amir, & Miller (2011)	Two time points of depression assessment administered 17 months apart. Goal disengagement attitudes only measured at time 1.	Location: Canada Time 1 Sample Size: 147 caregivers of family members with mental illness. $M_{age} = 60.73$	Measures of Goal Disengagement: GAS Measures of Depression: CES-D	Goal disengagement as an isolated variable was not sufficient to predict change in depression, however was able to buffer against longitudinal depression when interacting with caregiver burden.	Strengths: <ul style="list-style-type: none"> • Large sample size • Low attrition • Inclusion of covariates in analysis. Limitations: <ul style="list-style-type: none"> • Particularly high levels of care giver 	11/14 Overall: Fair

Running Head: GOAL FLEXIBILITY AS A PREDICTOR OF DEPRESSION

		115 females 32 males Time 2 Sample Size: 121 participants		Key Finding: Baseline levels of goal disengagement did not significantly predict changes in depression ($\beta = -0.07, p > 0.05$).	burden in final sample. • Only examined a specific stressor and findings may not be generalisable	
--	--	---	--	---	--	--

Note: BDI = Beck Depression Inventory (Beck, Ward, Mendelson, Mock, & Erbaugh, 1961), BDI-II = Beck Depression Inventory-II (BDI-II; Beck, Steer, & Brown, 1996), CES-D = Center for Epidemiological Studies Depression Scale (Radloff, 1977), GAS = Goal Adjustment Scale (Wrosch et al., 2003b), GDS = Goal Disengagement Scale (Wrosch et al., 2003b), HADS = Hospital Anxiety and Depression Scale (Zigmond & Snaith, 1983), HRSD-24 = Hamilton Rating Scale for Depression (Hamilton, 1967), M = Mean, OPSCS = Optimization in Primary and Secondary Control survey (Schulz & Heckhausen, 1998), PHQ-9 = Patient Health Questionnaire 9 (Kroenke, Spitzer & Williams, 2001).

Critical Summary

Participants

The sample size of the studies at baseline ranged from 98 participants (Coffey et al., 2014) to 388 (Eddington, 2014) with a mean of 206 participants. Attrition ranged from 10% (Thompson et al., 2013) to 48% (Boudrenghien et al., 2012). Nearly all studies had a larger female population within their samples. Coffey et al. (2014) had a larger male population in their sample, however, this could reflect the larger incidences of lower limb amputations in men (e.g. Feinglass et al., 2000). Two studies used an undergraduate student population, three studies recruited an older adult population, four studies recruited a clinical population with samples consisting of participants with a lower limb amputation, polyarthritis and those undergoing cancer treatment, and one study used a community sample of individuals who were carers of a family member with a mental health difficulty.

Design

Coffey et al. (2014) measured goal disengagement at two time points, Arends et al. (2016) measured goal disengagement at three time points and the remaining studies all measured goal disengagement at baseline only. The length of studies varied from four months (Boudrenghien et al., 2012) to six years (Dunne et al., 2011; Jobin & Wrosch, 2016). The longest interval between depression measures was six years (Dunne et al., 2011; Jobin & Wrosch, 2016).

Measures

Goal Disengagement

Nine studies used the Goal Adjustment Scale (GAS; Wrosch et al., 2003b) to measure how participants would react when they have to stop pursuing important goals in their life when these goals are perceived to be unattainable. Four items in the GAS measured participants' goal disengagement capacities and six items measured goal reengagement capacities. Internal reliability for goal disengagement ranged from $\alpha = .51$ (Arends et al., 2016) to $\alpha = .84$ (Eddington, 2014). Thompson et al. (2013) used the GAS to assess dispositional goal adjustment and developed a situational goal disengagement measure to assess goal disengagement about particular goals and was adapted from Thompson et al. (2011) with $\alpha = .67$. Wallace et al. (2012) used the OPSCS (Schulz & Heckhausen, 1998), to assess goal adjustment where four items assessed the ability to withdraw from unattainable health goals and had an internal consistency for goal disengagement of $\alpha = .51$.

Depression

Four studies used the Center for Epidemiologic Studies - Depression Scale (CES-D; Radloff, 1977), two studies used the Hospital Anxiety and Depression Scale (HADS; Zigmond & Snaith, 1983), two studies used the Beck Depression Inventory-II (BDI-II; Beck, Steer, & Brown, 1996) and one study used the Hamilton Rating Scale for Depression (HRSD-24; Hamilton, 1967). Boudrenghien et al. (2012) adapted ten items from the Beck Depression Inventory (BDI; Beck, Ward, Mendelson, Mock, & Erbaugh, 1961) and the Zung Self-Rating Depression Scale (Zung, 1965) to assess students' depressive

feelings. No studies used clinical diagnostic criteria for measuring depression status.

Summary of Findings

From the ten studies that were included in the review, six reported small to medium effect sizes. Findings of these six studies reported that difficulty with disengaging from perceived unattainable goals is a predictor of increases in depressive symptoms, indicating that low levels of disengagement when faced with an unattainable goal are associated with greater depressive symptomology in future. Conversely, one study reported that greater initial situational goal disengagement predicted an increase in depressive symptoms.

Goal disengagement and depression in student samples

Two studies specifically investigated goal disengagement and depressive symptoms in student populations at university. Boudrenghien et al. (2012) reported that, as isolated predictors, both actual goal disengagement and envisaged goal disengagement were independent predictors of change in depressive symptoms at a four-month follow up where higher envisaged goal disengagement was associated with a decrease in depressive symptoms. When a goal was seen as unattainable, goal disengagement predicted a decrease in depressive symptoms at follow up. Actual goal disengagement had a larger effect size, however, the number of students who actually dropped out of college and completed both baseline and follow up parts of the study was only 19, limiting the power and generalisability of these findings. Eddington (2014) also looked at a student population and although the study focused on an interaction between perfectionism and goal adjustment, there was no significant

main effect between goal disengagement and change in depressive symptoms at a ten-month follow up. An interaction was observed where individuals with low goal disengagement and high socially prescribed perfectionism reported increased depressive symptoms.

Studies with student populations provided conflicting evidence of how goal disengagement is associated with change in depressive symptoms. An important clue about interactions was observed where other variables can moderate the relationship between goal disengagement and depression.

Goal disengagement and depression in older adults

Studies with older adult samples found significant results for goal disengagement predicting change in depression. Wallace et al. (2012) reported that goal disengagement was associated with earlier depression remission where the use of disengagement strategies, such as avoiding self-blame, and reengaging with other goals was associated with fewer depressive symptoms. The OPSCS that was used to measure goal disengagement, however, had low reliability.

Dunne et al. (2011) looked at goal disengagement and depressive symptoms in older adults with a functional disability. Their findings showed that low goal disengagement at baseline predicted increases in depressive symptoms at a six-year follow up. The authors reported that the effect size for goal disengagement was not large, however, the study was able to demonstrate that goal disengagement capacities could be beneficial for long-term depression when a goal was no longer perceived to be attainable. This is consistent with the findings of Wrosch, Miller, Scheier, and de Pontet (2007) who reported that higher goal disengagement can predict lower levels of physical health by

Running Head: GOAL FLEXIBILITY AS A PREDICTOR OF DEPRESSION

mediating through a decrease in depressive symptoms and relieving psychological distress. Jobin and Wrosch (2016) reported that goal disengagement was associated with a reduction in depressive symptoms in older adults, however, this same change was not observed in younger adults. Taken together, studies with older adult populations demonstrated an adaptive function of goal disengagement predicting change in depressive symptoms. Critically, goal disengagement may be necessary for populations where goal attainment becomes more difficult.

Goal disengagement, depression and physical health

Four studies used a clinical sample of participants with stressful life events and physical health conditions and yielded varying results for the relationship between goal disengagement and depressive symptoms. Arends et al. (2016) used cluster analysis and identified a goal management strategy that was associated with poorer long-term psychological health among patients with polyarthritis that comprised of low scores on goal adjustment. Individuals in this cluster were found to have higher levels of self-reported depression.

Additional evidence for adaptive goal disengagement in a clinical sample came from Coffey et al. (2014). The authors reported that a stronger disposition towards goal disengagement in patients with a lower limb amputation who were admitted to rehabilitation predicted lower depressive symptoms six months following discharge, when controlling for baseline measurements of depression. Lower limb amputation presented a situation in which adjusting or disengaging from previous goals was necessary and negative affective consequences associated with disability can be reduced if individuals can disengage from goals that are no longer attainable.

A clinical sample was also used by Thompson et al. (2013) and Lam et al. (2016) who looked at the predictive ability of goal disengagement in participants with a diagnosis of breast cancer. Thompson et al. (2013) were able to build on previous work in goal adjustment and look at a situational response to a specific blocked goal as well as dispositional characteristics of goal disengagement. As well as completing the GAS, participants were asked to identify a specific life goal that they were currently giving up or had given up as a result of their cancer and treatment. Participants then completed a six-item scale that assessed their ability to disengage from this goal and reengage in other meaningful goals. They found that situational and dispositional goal disengagement did not correlate, indicating a difference between the two constructs, and furthermore, high goal disengagement at baseline was found to predict increases in depressive symptomology.

Lam et al. (2016) also found limited support for goal disengagement predicting change in depression. Participants awaiting or receiving initial chemotherapy were assessed at baseline and completed four subsequent follow ups on goal adjustment capacity and factors of psychological wellbeing including depression. While greater goal disengagement was found to be associated with lower initial depression, it was not related to rates of change. Overall, studies with clinical samples where a physical health condition was present had good control of covariates within their design, however, found mixed support for goal disengagement being adaptive for reducing depressive symptomology, which may reflect how goal disengagement may vary with different health conditions.

Goal disengagement and depression in a community sample

Only one study explored links between goal disengagement and depression in the context of mental illness. Using a community sample, Wrosch et al. (2011) reported that baseline levels of goal disengagement did not significantly predict changes in depression. However, the interaction between high goal disengagement and high caregiver burden was associated with a decrease in depressive symptoms. This study provided further clues about interactions with other variables and how goal disengagement can be adaptive for individuals experiencing higher levels of burden to adapt to stressful situations.

Discussion

The current review investigated if difficulties with disengaging from perceived unattainable goals would predict change in depressive symptoms. From the ten articles that were eligible for the review six reported findings of goal disengagement predicting change in depressive symptoms with small to moderate effect sizes where goal disengagement predicted a decrease in depressive symptoms at a subsequent time point. These findings support Wrosch et al.'s (2003a) theoretical model of goal adjustment and the value of assessing life goal characteristics. The findings of the review help to expand existing literature on depression by recognising how adaptive goal disengagement is associated with a decrease in depressive symptoms.

Goal disengagement is based on the premise that abandoning blocked goals protects from the harmful effects of repeated failure, which can lead to feelings of helplessness (Wrosch et al., 2003a; Arends et al., 2016; Seligman, 1975). Crucially, to regulate negative affect, a person needs to withdraw effort

and commitment from an unattainable goal, as negative affect is a consequence of poor goal progress. This may also help to redefine goals as unessential for satisfaction in life (Sprangers & Schwartz, 1999). Moreover, disengagement may free personal resources that can be redirected in other areas of life (Wrosch et al., 2003b). By taking up attainable alternative goals, a person can maintain purpose, which in turn, can promote personal long-term development (Scheier & Carver, 2001; Ryff, 1989). This is also seen in the impaired disengagement hypothesis (Koster, De Lissnyder, Derakshan, & De Raedt, 2011) which describes how difficulty to disengage attention from negative information puts individuals at risk of depressive rumination, similar to the difficulty with disengaging from unattainable goals and the negative affect it generates. The process of adaptive disengagement is thought to be related to expectancies of goal attainment where low expectancies facilitates goal disengagement (Carver & Scheier, 1998). In depression, however, lower expectancies may be accompanied by lower flexibility that precipitates a state of 'painful engagement' (Hadley & MacLeod, 2010).

Studies included in the review with student populations had the weaker methodological designs, which was due to no reported control of covariates and the largest attrition rates. While Eddington (2014) reported no significant findings in their study, Boudrenghien et al. (2012) had only a small effect size for the predictive power of goal disengagement, which provides limited support for the review question. Due to the large attrition rates, generalisability may be reduced due to the final sample not being representative. This lack of consistency between strength of the study and outcome made it difficult to identify a pattern or characteristic of the study to predict stronger findings and add to the understanding of goal disengagement and depressive symptoms.

Articles included in the review used heterogeneous samples which made comparisons between studies, drawing a conclusion and identifying patterns difficult; however, the sample range highlighted how goal disengagement may benefit different life stages and presentations. The three studies that used an older adult population all reported that goal disengagement was predictive of reduced depressive symptoms. These findings supported the theoretical work of Wrosch et al. (2003a) regarding the withdrawal of commitment to unattainable goals and reengaging with other goals. Taken together, these findings are consistent with previous research, which suggest that people are better able to adjust their goals or disengage as they advance in age (Wrosch & Heckhausen, 1999; Wrosch & Miller, 2009). Wrosch and Miller (2009) suggest that goal adjustment capacities develop in adolescence, as it is during this phase that individuals have many goals that later prove to be unrealistic. In these circumstances, individuals attempt to cope with goal failure and learn to adjust to the experience of unattainable goals. These cycles of adjustment may contribute to the development of more stable individual differences in people's goal adjustment capacities. This potential ease of relinquishing goals with age may be beneficial as there become fewer opportunities for goal attainment.

The review included studies with samples from students to older adults, as well as a range of clinical populations. Given the differences in life and developmental stages across these ages and clinical settings, it is likely that an interaction with other variables depending on life stage and transition may account for the variability of the findings here. This was indeed a theme that emerged across the studies, namely that goal disengagement may not work in isolation to influence depression. In the studies where goal disengagement was not predictive of depressive symptoms, analysis showed that an interaction

effect between goal disengagement and another variable changed the significance, i.e., moderators seem important in this relationship. Eddington (2014), for example, noted that goal disengagement was not sufficient in predicting changes in either current depressive symptoms or stress related depressive symptoms, however, the interaction of high socially prescribed perfectionism and low goal disengagement significantly increased stress-related depressive symptoms. Individuals with socially prescribed perfectionism had more difficulties letting go of high standards and were at risk of responding poorly to stress, which fits with the theory of how goal disengagement impacts wellbeing. This same interaction was not observed for self-oriented perfectionism, which may suggest that lack of disengagement becomes more problematic when reasons for goal pursuit are attributed externally.

Furthermore, Wrosch et al. (2011) noted that the main effect of baseline goal disengagement was not capable of predicting changes in depression, however, an interaction with high caregiver burden had predictive power in that individuals who were experiencing more care giver burden and had higher goal disengagement capacities at baseline experienced fewer symptoms of depression at follow up. This was likely due to reducing commitment and effort in blocked goals and thus reducing burden (Wrosch et al., 2003a)

Further to the observed interaction effects, some studies were noted for their control of additional and appropriate potential covariates (as well as baseline depression), in their analyses, which was important to rule out alternative explanations. Arends et al. (2016), Coffey et al. (2013) Dunne et al. (2011), Jobin and Wrosch (2016) and Wrosch et al. (2011), for example, used sociodemographic characteristics, such as age, sex and socioeconomic status as covariates as these have been associated with depressive symptoms in

previous research. However, although greater age has been found to be related to increased depression (e.g., Blazer, Burchett, Service, & George, 1991) the reduced opportunities for goal attainment with older age may mean it could be more appropriate to include this as a moderator rather than just controlling for it.

Although some covariates were accounted for, other personality factors were largely ignored across the studies and could have impacted the relationship between goal disengagement and depression. Neuroticism and dispositional optimism, for example, have been linked to depression (e.g. Hirschfeld et al., 1989; Conversano et al., 2010), and these factors could have modified or explained the effects of goal disengagement and it was really these variables that were driving the relationship with depression. Optimism can be related to adaptive management of personal goals through continued striving with a difficult goal as well as lower depression. Furthermore, optimism may predict engagement with new goals, thus making it easier to disengage from blocked goal (Wrosch & Scheier, 2003). Lam et al. (2016) did include optimism as a predictor, which was found to be significant in predicting fewer depressive symptoms whereas goal disengagement was not. However, the interaction between goal disengagement and optimism was not significant at predicting change in depression. Further investigations would be necessary as the hope for a positive outcome that optimists may experience could compensate for the failure to disengage from unattainable goals (Rasmussen et al., 2006). This highlights how other variables that are unaccounted for may be driving the relationship with depressive symptoms.

A related point is that due to the correlational nature of the regressions used, conclusions about causality are still not clear. Indeed, Boudrenghien et al. (2012) writes that the cross-sectional nature for two of their hypotheses and a

short longitudinal design did not allow for causal interpretation. This means that while high goal disengagement may lead to a reduction in depression, change in depression may alter the perception of one's ability to disengage from an unattainable goal, however, the majority of studies did not measure goal adjustment capacities more than once. This causal uncertainty and unclear temporal precedence are pertinent due to the finding that in many studies in the review, interactions with other variables modified the strength of the relationship.

A common limitation among many of the studies was high levels of attrition. Boudrenghien et al. (2012) recruited a large initial sample, however, only 40 participants who actually disengaged from their educational goal participated in the study, and even fewer were still present at time 2. This reduced the statistical power and generalisability of the study. Arends et al. (2016) reported that a fifth of their participants were not retained which hampered replication of the cluster solutions of over the three measurement points. Attrition can become a problem if the later waves of data are not generalisable to the original population sample and external validity is threatened (Miller & Wright, 1995). Attrition may present a significant problem when investigating goal disengagement due to the implication that withdrawing from a study may represent a form of goal disengagement. This could lead to a possible underrepresentation of participants high on goal disengagement and provided less variability and support for the research question. Additionally, attrition may reduce the number of participants with depressive symptoms as these individuals may have less motivation.

Studies with clinical samples had relatively low attrition rates, however, both Lam et al. (2016) and Thompson et al. (2013) reported no significant

findings for goal disengagement predicting change in depression. It may be that as both samples in the study consisted of women with an advanced form of breast cancer, this may have markedly increased stress and depression levels due to cancer being one of the most significant stressful life events that one can experience (Holmes & Rahe, 1967) and the impact on symptoms was not captured by goal disengagement alone.

Another common limitation across the studies was that assessment of goal disengagement was based on self-report measures. Relative to other methods of data collection, self-reported data is susceptible to social desirability and self-reporting bias (Althubaiti, 2016). Wallace et al. (2012) write that while self-perception of coping is important for wellbeing, self-reports may not fully capture day-to-day use of cognitive and behavioural strategies, the latter of which were lacking in the studies included in the review. This means that the findings of the studies in the review using self-report may not be the most reliable way to identify true goal adjustment capacities. Indeed, Nisbett and Wilson (1977) on self-report measures argues that people are often unable to account with accuracy the factors impacting on their responses.

Strengths and Limitations

All studies measured goal disengagement, controlled for baseline depression in analysis to measure change, employed a longitudinal design and nine studies used the GAS to measure goal adjustment, which helped to retain focus for the review. Furthermore, the review was carried out systematically to allow for replication and used a wide array of search terms to ensure maximum results. Although the initial search yielded a large volume of results, the ten studies included in the review highlight the limited research in the area of goal

adjustment with longitudinal designs where depressive symptoms are measured as an outcome variable.

A potential weakness of the review is that a grey literature search was not incorporated into the initial database search. This may have helped to widen the search; however, it is possible that this may have increased the number of null findings. While the inclusion of grey literature may increase the heterogeneity of the results, it was not within the means of the current review.

Clinical Implications

Goal adjustment is critical in the empirically-based therapeutic model of Acceptance and Commitment Therapy, which develops the idea of psychological flexibility and being aware of when to persist or change behaviour in the pursuit of goals (Hayes, Strosahl, & Wilson, 1999). Acceptance-based interventions could help with disengagement and difficult emotions that may accompany the process (Kanter, Baruch, & Gaynor, 2006). The observed association between higher goal disengagement and fewer depressive symptoms could be applied clinically to help individuals learn disengagement strategies and recognise when a goal is no longer attainable. For example, some of the reviewed studies highlight that goal adjustment appears to play an important role in adjusting to chronic health condition and rehabilitation (Arends et al., 2016; Coffey et al., 2014). Moreover, clinicians could explore with clients what their goals and values are and what might be interfering with their pursuit. This could help identify potential obstacles and guide goal disengagement where necessary.

Clinical application of goal adjustment could help to understand individual differences in goal disengagement and further develop disengagement

strategies to support adaptive disengagement through collaborative working and problem solving. Additionally, although beyond the scope of this review, the use of reengagement strategies to identify other meaningful goals taps into the work of behavioural activation, which supports patients to identify and engage with values-based goals and may further help restore a sense of purpose and achievement (Veale, 2008).

Future Directions for Research

Future research may benefit from the investigation of how specifically goal disengagement relates to depression as opposed to other mental health symptoms, such as rumination. Martin and Tesser (1996) described how rumination is a response to a blocked goal with a thought pattern consisting of repeated, intrusive thoughts associated with the inability to achieve the goal. Goal disengagement could be important for rumination, for example, Moberly and Watkins (2010) reported that ruminative self-focus was highest when individuals reported low levels of success on important goals. Due to the association between rumination and depression (Treyner, Gonzalez, & Nolen-Hoeksema, 2003), future research could investigate how the relationship between goal disengagement and depression is mediated by rumination.

Due to the possible interaction with other variables observed in the current review, future research could investigate how goal disengagement is moderated by other related variables to predict depressive symptoms. Specifically, this could include optimism being measured with goal adjustment where it might be expected that higher levels of optimism may buffer lower levels of goal disengagement (Rasmussen et al., 2006).

Conclusions

The current review examined the longitudinal association between goal adjustment and depressive symptoms and highlighted how higher goal disengagement may predict fewer depressive symptoms in different life circumstances and stages of life. However, this may also depend on interactions with other variables. Goal disengagement may contribute to adaptive self-regulation, and could be a vulnerability factor for depression. Therefore, these findings could further be applied clinically to help clients identify unattainable goal through collaborative work and developing attainable personal goals.

References

- Althubaiti, A. (2016). Information bias in health research: definition, pitfalls, and adjustment methods. *Journal of Multidisciplinary Healthcare, 9*, 211-217.
- Arends, R. Y., Bode, C., Taal, E., & Laar. (2016). The longitudinal relation between patterns of goal management and psychological health in people with arthritis: The need for adaptive flexibility. *British Journal of Health Psychology, 21*(2), 469-489.
- Austin, J. T., & Vancouver, J. B. (1996). Goal constructs in psychology: structure, process, and content. *Psychological Bulletin, 120*(3), 338-375.
- Beck, A. T., Steer, R. A., & Brown, G. K. (1996). *Manual for the Beck Depression Inventory-II*. San Antonio, TX: Psychological Corporation.
- Beck, A. T., Ward, C. H., Mendelson, M., Mock, J., & Erbaugh, J. (1961). An inventory for measuring depression. *Archives of General Psychiatry, 4*, 561-571.
- Blazer, D., Burchett, B., Service, C., & George, L. K. (1991). The association of age and depression among the elderly: An epidemiologic exploration. *Journal of Gerontology: Medical Sciences, 46*, M210-M215.
- Blenkiron, P. (1999). Who is suitable for cognitive behavioural therapy? *Journal of the Royal Society of Medicine, 92*, 222-229.

Boudrenghien, G., Frenay, M., & Bourgeois, É. (2012). Unattainable educational goals: Disengagement, reengagement with alternative goals, and consequences for subjective well-being. *European Review of Applied Psychology, 62*(3), 147-159.

Brandtstädter, J. (2000). Emotion, cognition, and control: Limits of intentionality. In W. J. Perrig & A. Grob (Eds.), *Control of human behavior, mental processes, and consciousness: Essays in honor of the 60th birthday of August Flammer* (pp. 3-16). Mahwah, NJ: Lawrence Erlbaum Associates Publishers.

Brandtstädter, J., & Renner, G. (1990). Tenacious goal pursuit and flexible goal adjustment: Explication and age-related analysis of assimilative and accommodative strategies of coping. *Psychology and Aging, 5*, 58–67.

Brandstätter, V., & Schüler J. (2012). Action crisis and cost-benefit thinking: A cognitive analysis of a goal disengagement phase. *Journal of Experimental Social Psychology, 49*(3), 543-553.

Brandstätter, V., Herrmann, M., & Schüler, J. (2013). The struggle of giving up personal goals: Affective, physiological and cognitive consequences of an action crisis. *Personality and Social Psychology Bulletin, 39*(12), 1668-1682.

Carver, C. S., & Scheier, M. F. (1998). *On the self-regulation of behaviour*. New York, NY: Cambridge University Press.

Centre for Reviews and Dissemination. (2009). *Systematic reviews. CRD's guidance for undertaking reviews in health care*. York, UK: Centre for Reviews and Dissemination.

Coffey, L., Gallagher, P., & Desmond, D. (2014). A prospective study of the importance of life goal characteristics and goal adjustment capacities in longer term psychosocial adjustment to lower limb amputation. *Clinical Rehabilitation, 28*(2), 196-205.

Conversano, C., Rotondo, A., Lensi, E., Della Vista, O., Arpone, F., & Reda, M. A. (2010). Optimism and its impact on mental and physical well-being. *Clinical Practice and Epidemiology in Mental Health, 6*, 25-9.

Dunne, E., Wrosch, C., & Miller, G. E. (2011). Goal disengagement, functional disability, and depressive symptoms in old age. *Health Psychology, 30*(6), 763-770.

Eddington, K. M. (2014). Perfectionism, goal adjustment, and self-regulation: A short-term follow-up study of distress and coping. *Self and Identity, 13*(2), 197-213.

Feinglass, J., Kaushik, S., Handel, D., Kosifas, A., Martin, G., & Pearce, W. (2000). Peripheral bypass surgery and amputation: Northern Illinois demographics, 1993 to 1997. *Archives of Surgery, 135*(1): 75-80.

First, M. B., Spitzer, R. L., Gibbon, M., & Williams, J. B. W. (1996). *Structured clinical interview for DSM-IV axis I disorders, clinician version (SCID-CV)*. Washington, DC: American Psychiatric Press.

Floridis, J., Abeyaratne, A., & Majoni, S. W. (2015). Prevalence and clinical impact of magnesium disorders in end-stage renal disease: a protocol for a systematic review. *Systematic Reviews, 4*, 76. doi.org/10.1186/s13643-015-0063-x

Galand, B. (2001). *Nature et déterminants des phénomènes de violence en milieu scolaire. [Nature and determinants of manifestations of violence at school]*. Unpublished doctoral thesis. Louvain-la-Neuve, Belgium: Université Catholique de Louvain.

Ghassemi, M., Bernecker, K., Herrmann, M., & Brandstätter, V. (2017). The process of disengagement from personal goals: reciprocal influences between the experience of action crisis and appraisals of goal desirability and attainability. *Personality and Social Psychology Bulletin, 43*(4), 524-537.

Hadley, A., & Macleod, A. K. (2010). Conditional goal-setting, personal goals and hopelessness about the future. *Cognition and Emotion, 24*(7), 1191-1198.

Hamilton, M. (1967). Development of a rating scale for primary depressive illness. *British Journal of Social and Clinical Psychology, 6*, 278-296.

- Handy, J. (2016, October 10). Never give up. Retrieved from <https://www.newyorker.com/magazine/2016/10/17/never-give-up>
- Hayes, S. C., Strosahl, K., & Wilson, K. G. (1999). *Acceptance and commitment therapy: An experimental approach to behavior change*. New York, NY: Guilford Press.
- Hirschfeld, R. M., Klerman, G. L., Lavori, P., Keller, M. B., Griffith, P., & Coryell, W. (1989). Premorbid personality assessments of first onset of major depression. *Archives of General Psychiatry*, *46*(4), 345-350.
- Holmes, T. H., & Rahe, R. H. (1967). The social readjustment rating scale. *Journal of Psychosomatic Research*, *11*, 213-218.
- Jobin, J., & Wrosch, C. (2016). Goal disengagement capacities and severity of disease across older adulthood: The sample case of the common cold. *International Journal of Behavioral Development*, *40*(2), 137-144.
- Kanter, J. W., Baruch, D. E., & Gaynor, S. T. (2006). Acceptance and commitment therapy and behavioral activation for the treatment of depression: description and comparison. *The Behavior analyst*, *29*(2), 161-185.
- Klinger, E. (1975). Consequences of commitment to and disengagement from incentives. *Psychological Review*, *82*, 1-25.

- Klinger, E. (1977). *Meaning & void: Inner experience and the incentives in people's lives*. Minneapolis, MN: University of Minnesota Press.
- Koster, E. H. W., De Lissnyder, E., Derakshan, N., & De Raedt, R. (2011). Understanding depressive rumination from a cognitive science perspective: The impaired disengagement hypothesis. *Clinical Psychology Review, 31*, 138-145.
- Kraaij, V., van der Veek, S. M., Garnefski, N., Schroevers, M., Witlox, R., & Maes, S. (2008). Coping, goal adjustment, and psychological well-being in HIV-infected men who have sex with men. *AIDS Patient Care and STDs, 22(5)*, 395-402.
- Kroenke, K., Spitzer, R.L., & Williams, J.B. (2001). The PHQ-9: validity of a brief depression severity measure. *Journal of General Internal Medicine, 16(9)*: 606-613.
- Lam, W. W. T., Yeo, W., Suen, J., Ho, W. M., Tsang, J. W. H., Soong, S. I., Yau, T. K., Wong, K. Y., Sze, W. K., & Ng, A. W. (2016). Goal adjustment influence on psychological well-being following advanced breast cancer diagnosis. *Psycho-Oncology, 25(1)*, 58-65.
- MacLeod, A. K., & Conway, C. (2007). Well-being and positive future thinking for the self versus others. *Cognition & Emotion, 21(5)*, 1114-1124.

Running Head: GOAL FLEXIBILITY AS A PREDICTOR OF DEPRESSION

Martin, L. L., & Tesser, A. (1996). Some ruminative thoughts. In R. S. Wyer (Ed.), *Advances in social cognition* (Vol. 9, pp. 1-47). Mahwah, NJ: Erlbaum.

Mens, M. G., Wrosch, C., & Scheier, M. F. (2017). Goal adjustment theory. In S. K. Whitbourne (Ed.), *The encyclopedia of adult development and aging* (pp. 571-576). London: Wiley-Blackwell.

Miller, R. B., & Wright, D. W. (1995). Detecting and correcting attrition bias in longitudinal family research. *Journal of Marriage and Family*, 57, 921-929.

Moberly, N. J., & Watkins, E. R. (2010). Negative affect and ruminative self-focus during everyday goal pursuit. *Cognition & Emotion*, 24(4), 729-739.

Moher, D., Shamseer, L., Clarke, M., Ghersi, D., Liberati, A., Petticrew, M., Shekelle, P., Stewart, L. A. (2015). Preferred reporting items for systematic review and meta-analysis protocols (PRISMA-P) 2015 statement. *Systematic Reviews*, 4(1), 1-9.

National Heart, Lung and Blood Institute (2014). Quality assessment tool for observational cohort and cross-sectional studies. Retrieved from <https://www.nhlbi.nih.gov/health-pro/guidelines/in-develop/cardiovascular-risk-reduction/tools/cohort>

Running Head: GOAL FLEXIBILITY AS A PREDICTOR OF DEPRESSION

Nisbett, R. E., & Wilson, T. D. (1977). Telling more than we can know: Verbal reports on mental processes. *Psychological Review*, *84*, 231-259.

Pyszczynski, T., & Greenberg, J. (1987). Self-regulatory and depressive self-focusing style: A self-awareness theory of reactive depression. *Psychological Bulletin*, *102*(1), 122-138.

Radloff, L. S. (1977). The CES-D Scale: A self-report depression scale for research in the general population. *Applied Psychological Measurement*, *1*, 385-401.

Rasmussen, H. N., Crosch, C., Scheier, M. F., & Carver, C. S., (2006). Self-regulation processes and health: The importance of optimism and goal adjustment. *Journal of Personality*, *74*(6), 1721-1748.

Ryff, C. D. (1989). Happiness is everything, or is it? Explorations on the meaning of psychological well-being. *Journal of Personality and Social Psychology*, *57*, 1069-1081.

Salkind, N. J. (2010). *Encyclopedia of research design*. Thousand Oaks, CA: Sage Publications.

Scheier, M. F., & Carver, C. S. (2001). Adapting to cancer. The importance of hope and purpose. In A. Baum & B. L. Andersen (Eds.), *Psychosocial interventions for cancer* (pp. 15-36). Washington, DC: American Psychological Association.

Schulz, R., & Heckhausen, J. (1998). *Health-specific Optimization in Primary and Secondary Control Scales*. Pittsburgh, PA: University of Pittsburgh.

Seligman, M. E. P. (1975). *Helplessness: on depression, development and death*. New York, NY: Freeman.

Sprangers, M. A. G., & Schwartz, C. E. (1999). Integrating response shift into health-related quality of life research: A theoretical model. *Social Science & Medicine*, 48(11), 1507-1515.

Strauman, T. J. (2002). Self-regulation and depression. *Self and Identity*, 1(2), 151-157.

Stroup, D. F., Berlin, J. A., Morton, S. C., Olkin, I., Williamson, G. D., Rennie, D., Moher, D., Becker, B. J., Sipe, T. A., Thacker, S. B. (2000). Meta-analysis of observational studies in epidemiology: a proposal for reporting. Meta-analysis of observational studies in epidemiology (MOOSE) group. *JAMA*, 283(15), 2008-2012.

Thompson, E., Stanton, A. L., & Bower, J. E. (2013). Situational and dispositional goal adjustment in the context of metastatic cancer. *Journal of Personality*, 81(5), 441-451.

- Thompson, E. H., Woodward, J. T., & Stanton, A. L. (2011). Moving forward during major goal blockage: situational goal adjustment in women facing infertility. *Journal of Behavioral Medicine, 34*(7), 275-287.
- Treynor, W., Gonzalez, R., & Nolen-Hoeksema, S. (2003). Rumination reconsidered: A psychometric analysis. *Cognitive Therapy and Research, 27*, 247-259.
- Veale, D. (2008). Behavioural activation for depression. *Advances in Psychiatric Treatment, 14*(1), 29-36.
- Wallace, M. L., Dombrovski, A. Y., Morse, J. Q., Houck, P. R., Frank, E., Alexopoulos, G. S., Reynolds, C. F., Schulz, R. (2012). Coping with health stresses and remission from late-life depression in primary care: a two-year prospective study. *International Journal of Geriatric Psychiatry, 27*(2), 178-186.
- Wrosch, C., & Heckhausen, J. (1999). Control processes before and after passing a developmental deadline: Activation and deactivation of intimate relationship goals. *Journal of Personality and Social Psychology, 77*(2), 415-427.
- Wrosch, C. & Miller, G. E. (2009). Depressive symptoms can be useful: Self-regulatory and emotional benefits of dysphoric mood in adolescence. *Journal of Personality and Social Psychology, 96*(6), 1181-1190.

- Wrosch, C., & Scheier, M. F. (2003). Personality and quality of life: The importance of optimism and goal adjustment. *Quality of Life Research: An International Journal of Quality of Life Aspects of Treatment, Care & Rehabilitation*, 12(Suppl. 1), 59-72.
- Wrosch, C., Amir, E., & Miller, G. E. (2011). Goal adjustment capacities, coping and subjective well-being: The sample case of caregiving for a family member with mental illness. *Journal of Personality and Social Psychology*, 100(5), 934-946.
- Wrosch, C., Miller, G. E., Scheier, M. F., & de Pontet, S. B. (2007). Giving up on unattainable goals: Benefits for health? *Personality and Social Bulletin*, 33(2), 251-265.
- Wrosch, C., Scheier, M. F., Carver, C. S., & Schulz, R. (2003a). The importance of goal disengagement in adaptive self-regulation: When giving up is beneficial. *Self and Identity*, 2(1), 1-20.
- Wrosch, C., Scheier, M. F., Miller, G. E., Schulz, R., Carver, C. S. (2003b). Adaptive self-regulation of unattainable goals: goal disengagement, goal reengagement, and subjective well-being. *Personality and Social Psychology Bulletin*, 29(12), 1494-1508.

Running Head: GOAL FLEXIBILITY AS A PREDICTOR OF DEPRESSION

Wrosh, C., Scheier, M., & Miller, G. E. (2013). Goal adjustment capacities, subjective well-being and physical health. *Social and Personality Psychology Compass*, 7(12), 847-860.

Zigmond, A. S, & Snaith, R. P. (1983). The Hospital Anxiety and Depression Scale. *Acta Psychiatrica Scandinavica*, 67(6), 361-370.

Zung, W. W. (1965). A self-rating depression scale. *Archives of General Psychiatry*, 12(1), 63-70.

Appendices

Appendix A - Quality Assessment Tool for Observational Cohort and Cross-Sectional Studies

12/11/2017

Quality Assessment Tool for Observational Cohort and Cross-Sectional Studies - NHLBI, NIH



Quality Assessment Tool for Observational Cohort and Cross-Sectional Studies

Criteria	Yes	No	Other (CD, NR, NA)*
1. Was the research question or objective in this paper clearly stated?			
2. Was the study population clearly specified and defined?			
3. Was the participation rate of eligible persons at least 50%?			
4. Were all the subjects selected or recruited from the same or similar populations (including the same time period)? Were inclusion and exclusion criteria for being in the study prespecified and applied uniformly to all participants?			
5. Was a sample size justification, power description, or variance and effect estimates provided?			
6. For the analyses in this paper, were the exposure(s) of interest measured prior to the outcome(s) being measured?			
7. Was the timeframe sufficient so that one could reasonably expect to see an association between exposure and outcome if it existed?			
8. For exposures that can vary in amount or level, did the study examine different levels of the exposure as related to the outcome (e.g., categories of exposure, or exposure measured as continuous variable)?			
9. Were the exposure measures (independent variables) clearly defined, valid, reliable, and implemented consistently across all study participants?			
10. Was the exposure(s) assessed more than once over time?			
11. Were the outcome measures (dependent variables) clearly defined, valid, reliable, and implemented consistently across all study participants?			
12. Were the outcome assessors blinded to the exposure status of participants?			
13. Was loss to follow-up after baseline 20% or less?			
14. Were key potential confounding variables measured and adjusted statistically for their impact on the relationship between exposure(s) and outcome(s)?			

Quality Rating (Good, Fair, or Poor) (see guidance)
Rater #1 initials:
Rater #2 initials:
Additional Comments (If POOR, please state why):

*CD, cannot determine; NA, not applicable; NR, not reported

Guidance for Assessing the Quality of Observational Cohort and Cross-Sectional Studies

The guidance document below is organized by question number from the tool for quality assessment of observational cohort and cross-sectional studies.

Question 1. Research question

Did the authors describe their goal in conducting this research? Is it easy to understand what they were looking to find? This issue is important for any scientific paper of any type. Higher quality scientific research explicitly defines a research question.

Questions 2 and 3. Study population

Did the authors describe the group of people from which the study participants were selected or recruited, using demographics, location, and time period? If you were to conduct this study again, would you know who to recruit, from where, and from what time period? Is the cohort population free of the outcomes of interest at the time they were recruited?

An example would be men over 40 years old with type 2 diabetes who began seeking medical care at Phoenix Good Samaritan Hospital between January 1, 1990 and December 31, 1994. In this example, the population is clearly described as: (1) who (men over 40 years old with type 2 diabetes); (2) where (Phoenix Good Samaritan Hospital); and (3) when (between January 1, 1990 and December 31, 1994). Another example is women ages 34 to 59 years of age in 1980 who were in the nursing profession and had no known coronary disease, stroke, cancer, hypercholesterolemia, or diabetes, and were recruited from the 11 most populous States, with contact information obtained from State nursing boards.

In cohort studies, it is crucial that the population at baseline is free of the outcome of interest. For example, the nurses' population above would be an appropriate group in which to study incident coronary disease. This information is usually found either in descriptions of population recruitment, definitions of variables, or inclusion/exclusion criteria.

You may need to look at prior papers on methods in order to make the assessment for this question. Those papers are usually in the reference list.

If fewer than 50% of eligible persons participated in the study, then there is concern that the study population does not adequately represent the target population. This increases the risk of bias.

Question 4. Groups recruited from the same population and uniform eligibility criteria

Were the inclusion and exclusion criteria developed prior to recruitment or selection of the study population? Were the same underlying criteria used for all of the subjects involved? This issue is related to the description of the study population, above, and you may find the information for both of these questions in the same section of the paper.

12/11/2017

Quality Assessment Tool for Observational Cohort and Cross-Sectional Studies - NHLBI, NIH

Most cohort studies begin with the selection of the cohort; participants in this cohort are then measured or evaluated to determine their exposure status. However, some cohort studies may recruit or select exposed participants in a different time or place than unexposed participants, especially retrospective cohort studies—which is when data are obtained from the past (retrospectively), but the analysis examines exposures prior to outcomes. For example, one research question could be whether diabetic men with clinical depression are at higher risk for cardiovascular disease than those without clinical depression. So, diabetic men with depression might be selected from a mental health clinic, while diabetic men without depression might be selected from an internal medicine or endocrinology clinic. This study recruits groups from different clinic populations, so this example would get a "no."

However, the women nurses described in the question above were selected based on the same inclusion/exclusion criteria, so that example would get a "yes."

Question 5. Sample size justification

Did the authors present their reasons for selecting or recruiting the number of people included or analyzed? Do they note or discuss the statistical power of the study? This question is about whether or not the study had enough participants to detect an association if one truly existed.

A paragraph in the methods section of the article may explain the sample size needed to detect a hypothesized difference in outcomes. You may also find a discussion of power in the discussion section (such as the study had 85 percent power to detect a 20 percent increase in the rate of an outcome of interest, with a 2-sided alpha of 0.05). Sometimes estimates of variance and/or estimates of effect size are given, instead of sample size calculations. In any of these cases, the answer would be "yes."

However, observational cohort studies often do not report anything about power or sample sizes because the analyses are exploratory in nature. In this case, the answer would be "no." This is not a "fatal flaw." It just may indicate that attention was not paid to whether the study was sufficiently sized to answer a prespecified question—i.e., it may have been an exploratory, hypothesis-generating study.

Question 6. Exposure assessed prior to outcome measurement

This question is important because, in order to determine whether an exposure causes an outcome, the exposure must come before the outcome.

For some prospective cohort studies, the investigator enrolls the cohort and then determines the exposure status of various members of the cohort (large epidemiological studies like Framingham used this approach). However, for other cohort studies, the cohort is selected based on its exposure status, as in the example above of depressed diabetic men (the exposure being depression). Other examples include a cohort identified by its exposure to fluoridated drinking water and then compared to a cohort living in an area without fluoridated water, or a cohort of military personnel exposed to combat in the Gulf War compared to a cohort of military personnel not deployed in a combat zone.

With either of these types of cohort studies, the cohort is followed forward in time (i.e., prospectively) to assess the outcomes that occurred in the exposed members compared to nonexposed members of the cohort. Therefore, you begin the study in the present by looking at groups that were exposed (or not) to some biological or behavioral factor, intervention, etc., and then you follow them forward in time to examine outcomes. If a cohort study is conducted properly, the answer to this question should be "yes," since the exposure status of members of the cohort was determined at the beginning of the study before the outcomes occurred.

For retrospective cohort studies, the same principal applies. The difference is that, rather than identifying a cohort in the present and following them forward in time, the investigators go back in time (i.e., retrospectively) and select a cohort based on their exposure status in the past and then follow them forward to assess the outcomes that occurred in the exposed and nonexposed cohort members. Because in retrospective cohort studies the exposure and outcomes may have already occurred (it depends on how long they follow the cohort), it is important to make sure that the exposure preceded the outcome.

Sometimes cross-sectional studies are conducted (or cross-sectional analyses of cohort-study data), where the exposures and outcomes are measured during the same timeframe. As a result, cross-sectional analyses provide weaker evidence than regular cohort studies regarding a potential causal relationship between exposures and outcomes. For cross-sectional analyses, the answer to Question 6 should be "no."

Question 7. Sufficient timeframe to see an effect

Did the study allow enough time for a sufficient number of outcomes to occur or be observed, or enough time for an exposure to have a biological effect on an outcome? In the examples given above, if clinical depression has a biological effect on increasing risk for CVD, such an effect may take years. In the other example, if higher dietary sodium increases BP, a short timeframe may be sufficient to assess its association with BP, but a longer timeframe would be needed to examine its association with heart attacks.

The issue of timeframe is important to enable meaningful analysis of the relationships between exposures and outcomes to be conducted. This often requires at least several years, especially when looking at health outcomes, but it depends on the research question and outcomes being examined.

Cross-sectional analyses allow no time to see an effect, since the exposures and outcomes are assessed at the same time, so those would get a "no" response.

Question 8. Different levels of the exposure of interest

If the exposure can be defined as a range (examples: drug dosage, amount of physical activity, amount of sodium consumed), were multiple categories of that exposure assessed? (for example, for drugs: not on the medication, on a low dose, medium dose, high dose; for dietary sodium, higher than average U.S. consumption, lower than recommended consumption, between the two). Sometimes discrete categories of exposure are not used, but instead exposures are measured as continuous variables (for example, mg/day of dietary sodium or BP values).

In any case, studying different levels of exposure (where possible) enables investigators to assess trends or dose-response relationships between exposures and outcomes—e.g., the higher the exposure, the greater the rate of the health outcome. The presence of trends or dose-response relationships lends credibility to the hypothesis of causality between exposure and outcome.

For some exposures, however, this question may not be applicable (e.g., the exposure may be a dichotomous variable like living in a rural setting versus an urban setting, or vaccinated/not vaccinated with a one-time vaccine). If there are only two possible exposures (yes/no), then this question should be given an "NA," and it should not count negatively towards the quality rating.

Question 9. Exposure measures and assessment

Were the exposure measures defined in detail? Were the tools or methods used to measure exposure accurate and reliable—for example, have they been validated or are they objective? This issue is important as it influences confidence in the reported exposures. When exposures are measured with less accuracy or validity, it is

Running Head: GOAL FLEXIBILITY AS A PREDICTOR OF DEPRESSION

12/11/2017

Quality Assessment Tool for Observational Cohort and Cross-Sectional Studies - NHLBI, NIH

harder to see an association between exposure and outcome even if one exists. Also as important is whether the exposures were assessed in the same manner within groups and between groups; if not, bias may result.

For example, retrospective self-report of dietary salt intake is not as valid and reliable as prospectively using a standardized dietary log plus testing participants' urine for sodium content. Another example is measurement of BP, where there may be quite a difference between usual care, where clinicians measure BP however it is done in their practice setting (which can vary considerably), and use of trained BP assessors using standardized equipment (e.g., the same BP device which has been tested and calibrated) and a standardized protocol (e.g., patient is seated for 5 minutes with feet flat on the floor, BP is taken twice in each arm, and all four measurements are averaged). In each of these cases, the former would get a "no" and the latter a "yes."

Here is a final example that illustrates the point about why it is important to assess exposures consistently across all groups: If people with higher BP (exposed cohort) are seen by their providers more frequently than those without elevated BP (nonexposed group), it also increases the chances of detecting and documenting changes in health outcomes, including CVD-related events. Therefore, it may lead to the conclusion that higher BP leads to more CVD events. This may be true, but it could also be due to the fact that the subjects with higher BP were seen more often; thus, more CVD-related events were detected and documented simply because they had more encounters with the health care system. Thus, it could bias the results and lead to an erroneous conclusion.

Question 10. Repeated exposure assessment

Was the exposure for each person measured more than once during the course of the study period? Multiple measurements with the same result increase our confidence that the exposure status was correctly classified. Also, multiple measurements enable investigators to look at changes in exposure over time, for example, people who ate high dietary sodium throughout the followup period, compared to those who started out high then reduced their intake, compared to those who ate low sodium throughout. Once again, this may not be applicable in all cases. In many older studies, exposure was measured only at baseline. However, multiple exposure measurements do result in a stronger study design.

Question 11. Outcome measures

Were the outcomes defined in detail? Were the tools or methods for measuring outcomes accurate and reliable—for example, have they been validated or are they objective? This issue is important because it influences confidence in the validity of study results. Also important is whether the outcomes were assessed in the same manner within groups and between groups.

An example of an outcome measure that is objective, accurate, and reliable is death—the outcome measured with more accuracy than any other. But even with a measure as objective as death, there can be differences in the accuracy and reliability of how death was assessed by the investigators. Did they base it on an autopsy report, death certificate, death registry, or report from a family member? Another example is a study of whether dietary fat intake is related to blood cholesterol level (cholesterol level being the outcome), and the cholesterol level is measured from fasting blood samples that are all sent to the same laboratory. These examples would get a "yes." An example of a "no" would be self-report by subjects that they had a heart attack, or self-report of how much they weigh (if body weight is the outcome of interest).

Similar to the example in Question 9, results may be biased if one group (e.g., people with high BP) is seen more frequently than another group (people with normal BP) because more frequent encounters with the health care system increases the chances of outcomes being detected and documented.

Question 12. Blinding of outcome assessors

Blinding means that outcome assessors did not know whether the participant was exposed or unexposed. It is also sometimes called "masking." The objective is to look for evidence in the article that the person(s) assessing the outcome(s) for the study (for example, examining medical records to determine the outcomes that occurred in the exposed and comparison groups) is masked to the exposure status of the participant. Sometimes the person measuring the exposure is the same person conducting the outcome assessment. In this case, the outcome assessor would most likely not be blinded to exposure status because they also took measurements of exposures. If so, make a note of that in the comments section.

As you assess this criterion, think about whether it is likely that the person(s) doing the outcome assessment would know (or be able to figure out) the exposure status of the study participants. If the answer is no, then blinding is adequate. An example of adequate blinding of the outcome assessors is to create a separate committee, whose members were not involved in the care of the patient and had no information about the study participants' exposure status. The committee would then be provided with copies of participants' medical records, which had been stripped of any potential exposure information or personally identifiable information. The committee would then review the records for prespecified outcomes according to the study protocol. If blinding was not possible, which is sometimes the case, mark "NA" and explain the potential for bias.

Question 13. Followup rate

Higher overall followup rates are always better than lower followup rates, even though higher rates are expected in shorter studies, whereas lower overall followup rates are often seen in studies of longer duration. Usually, an acceptable overall followup rate is considered 80 percent or more of participants whose exposures were measured at baseline. However, this is just a general guideline. For example, a 6-month cohort study examining the relationship between dietary sodium intake and BP level may have over 90 percent followup, but a 20-year cohort study examining effects of sodium intake on stroke may have only a 65 percent followup rate.

Question 14. Statistical analyses

Were key potential confounding variables measured and adjusted for, such as by statistical adjustment for baseline differences? Logistic regression or other regression methods are often used to account for the influence of variables not of interest.

This is a key issue in cohort studies, because statistical analyses need to control for potential confounders, in contrast to an RCT, where the randomization process controls for potential confounders. All key factors that may be associated both with the exposure of interest and the outcome—that are not of interest to the research question—should be controlled for in the analyses.

For example, in a study of the relationship between cardiorespiratory fitness and CVD events (heart attacks and strokes), the study should control for age, BP, blood cholesterol, and body weight, because all of these factors are associated both with low fitness and with CVD events. Well-done cohort studies control for multiple potential confounders.

Some general guidance for determining the overall quality rating of observational cohort and cross-sectional studies

The questions on the form are designed to help you focus on the key concepts for evaluating the internal validity of a study. They are not intended to create a list that you simply tally up to arrive at a summary judgment of quality.

12/11/2017

Quality Assessment Tool for Observational Cohort and Cross-Sectional Studies - NHLBI, NIH

Internal validity for cohort studies is the extent to which the results reported in the study can truly be attributed to the exposure being evaluated and not to flaws in the design or conduct of the study—in other words, the ability of the study to draw associative conclusions about the effects of the exposures being studied on outcomes. Any such flaws can increase the risk of bias.

Critical appraisal involves considering the risk of potential for selection bias, information bias, measurement bias, or confounding (the mixture of exposures that one cannot tease out from each other). Examples of confounding include co-interventions, differences at baseline in patient characteristics, and other issues throughout the questions above. High risk of bias translates to a rating of poor quality. Low risk of bias translates to a rating of good quality. (Thus, the greater the risk of bias, the lower the quality rating of the study.)

In addition, the more attention in the study design to issues that can help determine whether there is a causal relationship between the exposure and outcome, the higher quality the study. These include exposures occurring prior to outcomes, evaluation of a dose-response gradient, accuracy of measurement of both exposure and outcome, sufficient timeframe to see an effect, and appropriate control for confounding—all concepts reflected in the tool.

Generally, when you evaluate a study, you will not see a "fatal flaw," but you will find some risk of bias. By focusing on the concepts underlying the questions in the quality assessment tool, you should ask yourself about the potential for bias in the study you are critically appraising. For any box where you check "no" you should ask, "What is the potential risk of bias resulting from this flaw in study design or execution?" That is, does this factor cause you to doubt the results that are reported in the study or doubt the ability of the study to accurately assess an association between exposure and outcome?

The best approach is to think about the questions in the tool and how each one tells you something about the potential for bias in a study. The more you familiarize yourself with the key concepts, the more comfortable you will be with critical appraisal. Examples of studies rated good, fair, and poor are useful, but each study must be assessed on its own based on the details that are reported and consideration of the concepts for minimizing bias.

Last Updated March 2014

Appendix B - Preparation and Submission Requirements for Personality and Social Psychology Review

Scope of the Journal

Personality and Social Psychology Review (PSPR) publishes original theoretical papers and conceptual review articles in personality and social psychology. As an official publication of SPSP, the Society for Personality and Social Psychology, PSPR (a) supports the society's objectives of the scientific advancement of personality and social psychology and the advancement of human welfare, (b) provides an outlet for important conceptual and empirical developments and emerging trends in the fields of personality and social psychology worldwide, and (c) presents a versatile outlet for substantive work that does not readily fit the existing publication molds. Our readership includes social, personality, and organizational psychologists and sociologists.

Manuscript Preparation

Use a word processor to prepare manuscript. Files in Word or rich text format are preferred. All components of the manuscript should be double-spaced and should conform to the formatting and style conventions of the *Publication Manual of the American Psychological Association* (6th edition).

Title Page. On page 1, include (a) the article title no longer than 50 words, (b) the names, affiliations, and contact information for all authors, and (c) a running head containing no more than 45 characters and spaces.

Abstract. On page 2, type an abstract no more than 150 words long. Longer abstracts will be rejected by the manuscript submission website.

Tables. Refer to APA *Publication Manual* for table format; double spaced. Provide each table with an explanatory title that is intelligible without reference to the text. Provide an appropriate heading for each column in the table. Clearly indicate any units of measurement in the table. If the table is reprinted or adapted from another source, include a credit line in the table caption. Consecutively number all tables.

Figures and Figure Captions. Figure captions should appear at the end of the manuscript and should be consecutively numbered with Arabic numerals; make captions intelligible without reference to the text. If a figure is reprinted or adapted from another source, include a credit line in the caption. Each figure should be prepared and saved in a separate, clearly identified file, which will be uploaded to the manuscript submission website at the same time as the main body of the manuscript. Figures should be prepared in high-resolution format such with a minimal resolution of 300 dots per inch for grayscale images.

Methodology reporting (for empirical papers). In addition to the text, authors are required to submit in a separate file any relevant stimulus materials or coding materials, including the verbatim wording (translated if necessary) of all independent and dependent measures. If the article is published, this appendix will be made available on-line.

Results reporting (for empirical papers). Data-based submissions must report effect sizes and 95% confidence intervals for primary findings in each study, and address issues of sample size and consequent issues of power in each study or, in the case of multiple-study articles, in the context of evaluating the overall case for the reliability of the primary findings. Meta-analyses should follow the Meta-Analysis Reporting Standards (MARS) recommended by the APA.

Masked review. The standard review process is to mask manuscript authorship and reviewer identities. Therefore, author names, institutions, and other identifying information should be removed from the title page and elsewhere in the manuscript.

Ethical Practices verification. Corresponding authors of submitted papers must verify that:

- the same or substantially similar manuscript has not been simultaneously submitted for consideration by another journal
- the same or substantially similar manuscript has not already been published in whole or part

For empirical papers:

- data collection complied with current APA Ethical Principles of Psychologists and Code of Conduct
- the raw data and related coding information underlying all findings of empirically-based publications will be shared consistent with SPSP's (2013) Data Sharing Policy

Cover Letter and Permissions. Only original manuscripts will be considered for publication. Authors are responsible for all statements made in their work and for obtaining permission to reprint or adapt a copyrighted work. Authors should write to the original author(s) and original publisher to request nonexclusive world rights in all languages to use the material in the article and in future editions. Include copies of all permissions and credit lines with the manuscript (see the *APA Publication Manual* for sample credit lines).



SCHOOL OF PSYCHOLOGY
DOCTORATE IN CLINICAL PSYCHOLOGY

EMPIRICAL PAPER

**Goal Flexibility as a Predictor of Depression, Rumination and
Homesickness in Students**

Trainee Name: **Mandeep Bachu**

Primary Research Supervisor: **Dr Nick Moberly**

Senior Lecturer, Mood Disorders Centre

Secondary Research Supervisor: **Dr Pia Pechtel**

Wellcome Trust Research Fellow, Mood
Disorders Centre

Target Journal: **Personality and Social Psychology Bulletin**

Word Count: **8,410 words (excluding abstract, references,
footnotes, appendices)**

**Submitted in partial fulfilment of requirements for the Doctorate Degree in
Clinical Psychology, University of Exeter**

Abstract

Objective: Theoretical and empirical evidence in the field of self-regulation and goal adjustment posits that being able to disengage from goals that are no longer attainable and reengage with new ones is related to improved wellbeing. Transition to university involves being able to successfully disengage from previous goals that have become unattainable and identify and engage in meaningful new goals, however research in this area is sparse. The current study therefore predicted that greater difficulties with goal disengagement in students would be associated with increased depressive symptoms, rumination and homesickness at the beginning of term. Difficulties with goal adjustment was further predicted to be associated with increased depressive symptoms at the end of term and this would partly be mediated by increased homesickness from the beginning to middle of term.

Methods: New undergraduates completed self-report assessments on goal adjustment capacities, depressive symptoms, rumination and homesickness at baseline ($N = 221$) and a four-month follow up ($N = 198$). Data was analysed using hierarchical multiple regression and mediation analysis.

Results: Goal disengagement was not significant in predicting depressive symptoms, rumination or homesickness at baseline in students. Goal reengagement was also not significant in predicting rumination or homesickness at baseline; however, it was significant in predicting depressive symptoms at baseline. Only goal reengagement was found to significantly predict fewer reported symptoms of depression at time 3. Further analysis revealed that residualised change in homesickness from baseline to time 2 did not mediate goal adjustment and depressive symptoms at the end of term.

Conclusion: Despite the lack of support for goal disengagement, findings indicate that identifying and engaging in meaningful and attainable goals may be beneficial for depressive symptoms among university students during the first term.

Keywords: *Goal adjustment, goal disengagement, goal reengagement, self-regulation, depression, rumination, homesickness*

Introduction

Having goals and striving towards these has been seen as important to human wellbeing as they can provide meaning and structure to our lives (Frisch, 1998; Ingrid, Majda, & Dubravka, 2009). A goal can be defined as an “aim that one is committed to that serves as a guide for future behaviour” (Elliot & Murayama, 2008, p. 614). While commitment and determination towards a goal are often regarded as admirable qualities, withdrawing effort and abandoning goals, otherwise referred to as disengagement, may be just as necessary for personal development (Carver & Scheier, 1998; Wrosch & Heckhausen, 1999). The current research will therefore explore how difficulties with disengaging from unattainable goals may predict symptoms of depression, rumination and feelings of homesickness in new university undergraduates.

Self-Regulation Theory

Defining self-regulation can be difficult as it has often been used flexibly in psychology when discussing personality and social cognition theories (Siegert, McPherson, & Taylor, 2004). While some of the definitions of self-regulation are broad, the main approaches appear to share central tenets related to goals. These include: (1) human behaviour can largely be understood as goal-directed, (2) individuals often strive towards multiple goals, (3) goal progress and failure can impact emotions and affect, (4) success at achieving personal goals will be affected by how one regulates their own cognitions, emotions and behaviour (Siegert et al., 2004). Carver and Scheier (1998) further described self-regulation as involving feedback loops that govern behaviour where there is a drive to reduce a discrepancy between an individual's current perception of their situation and the desired end state (goal).

Positive feedback loops are associated with avoidance patterns of goal pursuit where regulation involves distancing oneself from something undesired.

Negative feedback loops, however, involve regulation to obtain desirable approach goal outcomes.

Goal Adjustment Theory

Goal adjustment theory states that when confronted with a blocked goal the most adaptive response is to both disengage from the unattainable goal and reengage in alternative goals (Wrosch, Scheier, Carver, & Schulz, 2003a). Goal adjustment theory postulates that goal disengagement and goal reengagement processes are shaped by personality characteristics that are referred to as a person's goal adjustment capacity (Wrosch, Scheier, Miller, Schulz, & Carver, 2003b). It is not clear when goal adjustment capacities develop, however, adolescence appears to be a critical period where individuals have many goals that are relatively easy to abandon without severe consequences. These experiences of early goal adjustment may contribute to more stable individual differences in goal adjustment across adulthood (Wrosch & Miller, 2009).

To conceptualise goal adjustment and the motivational processes involved, Wrosch and colleagues (2003a) distinguished between withdrawing behavioural effort towards a goal and withdrawing psychological commitment to a goal. Staying mentally committed to a goal while reducing effort can produce feelings of distress and rumination where a person becomes trapped in a bind of not trying to achieve the goal while also being unable to abandon the goal (Martin & Tesser, 1996). If, however, a person is no longer committed to a goal, it may reduce distress and increase acceptance that the goal is unattainable. This distinction makes disengagement different from learned helplessness

Running Head: GOAL FLEXIBILITY AS A PREDICTOR OF DEPRESSION

where the goal is actually attainable (Seligman, 1975). Moreover, continuing to put misguided effort into unattainable goals can actually result in feelings of perceived loss of control and depression (Seligman, 1975; Wortman & Brehm, 1975). In relation to self-regulation, goal disengagement may help an individual recognise their goals as no longer necessary for life satisfaction and accommodate to the reality of not achieving the goal (Brandtstädter & Renner, 1990).

An equally important part of goal adjustment is goal reengagement, which is the identification of new or alternative goals when faced with unattainable goals (Wrosch et al., 2003b). Goal disengagement and goal reengagement have been described as independent processes (Carver & Scheier, 1998). Reengagement consists of three processes: identifying, committing to, and putting effort towards achieving alternatives goals. Reengagement can therefore help maintain purpose in life and promote positive affect and wellbeing, especially if these goals are in line with individuals' values (Mens, Wrosch, & Scheier, 2017).

Evidence for goal adjustment being adaptive for wellbeing derives from Wrosch et al. (2003b), who investigated goal adjustment in parents of children with cancer and parents of medically healthy children in a cross-sectional study. The authors found that parents of children with cancer who reported difficulties disengaging from goals and reengaging with other meaningful goals reported the highest levels of depression. Moreover, high levels of goal disengagement and goal reengagement in the same group were associated with lower levels of depression.

Longitudinal support comes from Wrosch, Miller, Scheier, & de Pontet, (2007) who looked at goal adjustment and indicators of physical and mental

health wellbeing in college students. The authors reported that goal disengagement, measured at baseline, predicted lower levels of physical health problems and was significantly associated with lower levels of depressive symptoms at two-months follow up. When looking at interactions between goal disengagement and goal reengagement, Wrosch and colleagues noted that although goal reengagement did not predict physical health or depression by itself, it could buffer some of the adverse consequences of poor goal disengagement on overall health.

Rumination

In situations where goal attainment is difficult, abandoning the goal is often not the first response. Consideration may be given to the problem to measure the likelihood of success (Carver & Scheier, 1981). In instances where this assessment suggests that continued pursuit is likely to lead to attainment, then behavioural persistence is more adaptive than goal disengagement. In other situations, it may be assessed that continued goal pursuit is not productive and a person may then respond by disengaging from the goal, or engage in a prolonged continued reflection, i.e., rumination, even when a successful outcome is impossible (van Randenborgh, Hüffmeier, LeMoult, & Joormann, 2010). Ruminative thinking can cause an individual distress by concentrating the focus of attention on poor rates of progress on personal goals and can further impede performance and effort on other tasks and goals (Watkins, 2008). Additionally, rumination will continue until goal progress is resumed or the person successfully disengages from the goal (Martin & Tesser, 1996). Given that rumination often involves thoughts of past losses, failures and

mistakes, rumination can be thought of as failure to disengage from unattained goals (Di Paula & Campbell, 2002; van Randenborgh et al., 2010).

Van Randenborgh et al. (2010) looked at the relationship between goal disengagement and rumination. They investigated whether self-focused rumination affected behaviour (disengagement) when confronted with an unattainable goal. The authors measured whether or not participants skipped unsolvable anagrams to work on solvable anagrams that were easier. A positive correlation between trait rumination and failure to disengage from unsolvable anagrams was identified. Van Randenborgh et al. (2010) commented however, that a different causal relationship may account for the findings in that difficulties with disengaging may precipitate a repetitive and self-focused style of thinking and that further research was necessary. While van Randenborgh and colleagues offered some insight into the relationship between rumination and goal disengagement, the study lacked ecological validity and it did not look at how people's goal disengagement capacities influence rumination. The current study aims to continue work on this relationship and develop it by exploring how rumination is correlated with homesickness, as rumination is a salient component of homesickness (Archer, Ireland, Amos, Broad, & Currid, 1998; Stroebe, Vliet, Hewstone, & Willies, 2002).

Homesickness

While being accepted and going to university is often seen as a significant goal attainment, transition to university will often require some form of personal goal adjustment. This may include distancing oneself from existing social support networks and needing to develop new social support (Millar, Tesser, & Millar, 1988). Additionally, students may need to become more

Running Head: GOAL FLEXIBILITY AS A PREDICTOR OF DEPRESSION

independent and adjust to the contrast in the style of teaching delivery (i.e., from classroom to lecture hall), as well as relocating to a different area, if the choice of university is far from home (Thurber & Walton, 2012). Current estimates of homesickness vary (English, Davis, Wei & Gross, 2017), however, in a recent mental health and wellbeing at university survey, The Student Housing Company (2017) reported that 73% of students suffered from homesickness at university and further reported that university can be seen as a life-changing event. Failing to do so may be associated with homesickness as the person does not adapt to the new environment (Chow & Healey, 2008). Individuals suffering with homesickness frequently report depressive and anxious symptoms as well as withdrawal behaviours (Thurber & Walton, 2012). Homesickness is distinct from nostalgia and is described as a “complex cognitive-motivational-emotional state concerned with grieving for, yearning for and being preoccupied with thoughts of home” (Fisher & Hood, 1987, p. 426). Although not listed in the Diagnostic and Statistical Manual of Mental Disorders (DSM-5; American Psychiatric Association, 2013), homesickness shares some symptoms similar to those of an adjustment disorder, including development of emotional or behavioural symptoms in response to a stressor, depression, hopelessness and anxiety (DSM-5; American Psychiatric Association, 2013).

A link between homesickness, goal flexibility and rumination was made by Millar, Tesser, and Millar (1988) who investigated the adjustment of first-time college students. The authors reported that the more activities a student was no longer able to engage in then the greater the threat to their personal goals and higher levels of rumination were reported. While personal goals were inferred here, these outcomes could suggest that difficulties with disengaging from

unobtainable goals associated with home life can lead to feelings of distress at college.

Engaging in new activities has been linked to protecting against feelings of homesickness. In a study not directly looking at homesickness, Holmbeck and Wandrei (1993) investigated how students adapted when leaving home to go to college. Measures were taken only at the beginning of term for new students where high levels of adaptability to change were associated with positive adjustment whereas depression was associated with low levels of adaptability. While this study did not directly explore goal adjustment, it could be inferred that failure to disengage with previous goals and commitments that are no longer possible due to transition to university may contribute to homesickness.

The current study hopes to build on the work of Holmbeck and Wandrei (1993) and Wrosch et al. (2003a, 2003b) by exploring the relationship between goal adjustment, homesickness, rumination and depressive symptoms longitudinally over the first term for students.

Aims and Hypotheses

The current study aims to contribute to the literature of goal adjustment theory in the context of moving to university where homesickness may be encountered and flexibility of goals may be adaptable. While previous research has shown that an ability to disengage from unattainable goals is related to wellbeing, no studies have investigated if goal adjustment at the beginning of term is linked to change in homesickness and if this change then mediates change in depressive symptoms from beginning to end of term.

While the primary focus is homesickness acting as a mediator, as this is more relevant to students, rumination is also being investigated as this has been identified as a mechanism that may prevent successful goal adjustment (van Randenborgh et al., 2010). Furthermore, sustained goal-related thinking in response to unattainable goals closely resembles rumination and rumination has been cited as a key component of homesickness (Di Paula and Campbell 2002; Stroebe, et al., 2002; Verschuur, Eurelings-Bontekoe, Spinhoven, 2001). Therefore, rumination is being included in the current study to see whether this construct correlated with homesickness.

Rumination was also measured during the term to investigate how it was related to goal disengagement and homesickness. Depression is being used as an outcome variable as difficulties with goal disengagement can increase feelings of depression over the term, partly through homesickness. Furthermore, clinical implications will be discussed and how these findings can support new university students.

It is hypothesised that:

1. People with weaker tendencies to disengage from unattainable goals and (independently) weaker tendencies to reengage with alternative goals will experience greater depressive symptoms (H1a), and rumination (H1b) at baseline, and will experience greater homesickness at the beginning and middle of term (H1c, H1d).
2. Difficulties with goal disengagement and goal reengagement (independently) will predict change in depressive symptoms from the beginning to end of term (H2a). These relationships will be partly

mediated by change in homesickness measured from beginning to the middle of term (H2b).

Method

Participants

Two hundred and twenty-one participants were recruited at baseline using online opportunity sampling. Participants were undergraduate students from the University of Exeter and were recruited using the University of Exeter's psychology research participation system (SONA) and posters on campus. Participants were incentivised by offering £15 or two course credits for completing three surveys. Additionally, participants who completed all surveys were entered into a prize draw with twenty opportunities to win £20. Inclusion criteria required that participants be aged 18 or above and entering the first term of their first academic year of study. The study was approved by the University of Exeter Ethics Review Board (see Appendix A).

Power Analysis

The statistical package G*Power 3.1 (Faul, Erdfelder, Lang, & Buchner, 2007) was used to calculate the sample size required. To calculate relationships between the predictor and outcome variables at baseline for the first hypothesis, G*Power calculated that with a medium effect size, a two-tailed alpha level of .05 and power of .80, a minimum of 84 participants would be required to detect a medium sized correlation. To calculate whether goal adjustment predicts change in depressive symptoms, G*Power calculated that for a medium effect size ($f^2 = .15$) with an alpha level of .05 and power of .80, a minimum of 94 participants would be required to detect a medium sized association. For the second hypothesis, to gauge the sample size required for homesickness to mediate the relationship between goal disengagement and symptoms of depression with a medium effect size with power of .80, Fritz and Mackinnon

(2007) report that a bias-corrected bootstrap test of mediation requires 116 participants. Thus, the target number of participants to recruit was a minimum of 116.

Design

A prospective design was used in which participants completed three online surveys with a gap of four weeks between each survey. The study took place between September and December 2018, which was the duration of the first academic term.

The predictor variables were goal disengagement and goal reengagement. The outcome variables were depressive symptoms, rumination and homesickness.

Measures

Measures used in the study can be seen in Appendix B.

The Goal Adjustment Scale (GAS)

The GAS (Wrosch et al., 2003b) is a 10-item self-report scale that measures trait tendency to disengage from unattainable goals and reengage with alternative goals. Goal disengagement is measured with four items and goal reengagement is measured with six items. Participants rate the extent to which they agree or disagree with each item using a five-point Likert-type scale from 1 (*strongly disagree*) to 5 (*strongly agree*). Higher scores indicate greater ability to disengage from unattainable goals and to reengage in alternative goals. The GAS has shown good reliability and validity (Miller & Wrosch, 2007)

Running Head: GOAL FLEXIBILITY AS A PREDICTOR OF DEPRESSION

and in the current study, internal consistency for goal disengagement was $\alpha = .82$ and goal reengagement was $\alpha = .83$.

The Patient Health Questionnaire 8 (PHQ-8)

The PHQ-8 (Kroenke et al., 2009) is an eight-item self-report questionnaire for measuring severity of depressive symptoms focusing on the last two weeks. The PHQ-8 item scores range from 0 (not at all) to 3 (nearly every day) with a maximum score of 24. A threshold score of 10 or higher is used to indicate symptoms of mild depression, a score of 15 indicates moderate symptoms of depression, and a score of 20 or higher indicates severe symptoms of depression. In the PHQ-8, compared with the PHQ-9, the ninth item measuring “thoughts that you would be better off dead or of hurting yourself in some way” is omitted due to ethical reasons. Furthermore, previous validation studies of the PHQ show that the inclusion of the suicidal ideation item makes no difference to the cut-off threshold (Kroenke, Spitzer, Williams, & Löwe, 2010). The PHQ-8 has previously shown good internal consistency (Pressler et al., 2011). In the current study, baseline measurement internal consistency was identified as $\alpha = .82$, time 2 measurement as $\alpha = .82$ and time 3 measurement as $\alpha = .83$.

Perseverative Thinking Questionnaire (PTQ)

The PTQ (Ehring et al., 2011) is a time limited self-report measure of repetitive thinking that is designed to be independent of symptom content, such as depression and anxiety. The PTQ was selected as the most appropriate measure as it captures the quality of the process of rumination (i.e., repetitive negative thinking) and is not contaminated with any mood or anxiety disorder.

Running Head: GOAL FLEXIBILITY AS A PREDICTOR OF DEPRESSION

For example, the Response Style Questionnaire (RSQ; Nolen-Hoeksema & Morrow, 1991), often seen as the standard measure of depressive rumination, focuses on depression-related repetitive thoughts (Ehring et al., 2011).

The PTQ asks individuals to rate 15 items using a 5-point Likert scale ranging from '0' (*never*) to '4' (*almost always*). The PTQ assesses dysfunctional forms of repetitive thinking using three core characteristics: repetitiveness, intrusiveness, and uncontrollability. Good psychometric properties for the questionnaire have been reported (Ehring et al., 2011). At baseline, internal consistency was identified as $\alpha = .93$, at time 2 measurement as $\alpha = .95$ and time 3 measurement as $\alpha = .96$.

Homesickness Questionnaire (HQ)

The Homesickness Questionnaire (Archer, et al., 1998) was adapted from Fisher and Hood's (1987) original version for the circumstance of separation from home. The HQ has 33 self-report items that are assessed using a 5-point Likert scale ranging from '1' (*strongly disagree*) to '5' (*strongly agree*). The HQ assesses cognitions, emotions and behaviours typically associated with grief. This includes intrusive thoughts and wishes to return home, anger and blame, grief reactions and behaviours aimed at maintaining connections with home. A systematic review of homesickness questionnaires found the HQ was a robust measure and the most appropriate for use with a university population as factor analysis highlighted two factors: disliking the university, and attachment to the home (Stroebe, Schut, & Nauta, 2015). In the current study internal consistency was found to be $\alpha = .93$ at baseline, $\alpha = .92$ at time 2 and $\alpha = .92$ at time 3.

Procedure

A three-week recruitment window began on the first day of the new academic term during which first year undergraduate students were eligible to sign up to the study online and complete the first survey. At this point, participants were provided with a study information sheet, completed a consent form (see Appendix C and D) and were screened out if the inclusion criteria were not met. Additional demographic information, including age, gender and ethnicity were recorded. A three-week time frame was determined to capture the experience of new students who may not have settled at university and thus symptoms of homesickness or changes in affect may not have developed. This would allow for change to be measured over the first term. Participants were able to access the study through SONA or could be emailed a direct link to the online survey after contacting the researcher. The second and third time points were activated four weeks after a participant had completed the first and second survey respectively. No new participants were eligible to join the study during the second and third phase. Each survey took approximately 20-30 min to complete. Following the completion of all three surveys, participants were provided with a debriefing information sheet (see Appendix E).

Analytic Strategy

Preliminary analyses were first conducted to generate descriptive statistics for demographics, predictor and outcome variables. Subsequent bivariate correlations were calculated to explore relationships between the goal adjustment subscales and determinants of psychological wellbeing (depression, rumination and homesickness). As previous research has identified possible interactions between goal disengagement and goal reengagement, exploratory

analysis was carried out to investigate interaction effects between the two dimensions in the current study.

Longitudinal changes in wellbeing symptoms were examined using repeated-measures analysis of variance (ANOVAs). For the main analysis (Hypothesis 1), multiple linear regression was carried out, predicting changes in depression, rumination and homesickness as a function of levels of goal disengagement. Mediation analysis was used to examine whether change in homesickness between time 1 and time 2 would mediate the association between levels of goal adjustment and symptoms of depression at the end of term (Hypothesis 2). Analysis focused on residualised change in levels of homesickness rather than just homesickness levels at time 2 to investigate how goal adjustment predicts change in homesickness in the middle of term, and how this change in homesickness predicts depression at time 3, controlling for depression at baseline.

Results

Sample Characteristics

Characteristics of all participants can be seen in Table 1. At time 1, 221 participants completed the first set of questionnaires. At time 2, 208 participants completed the set of questionnaires. At time 3, 198 participants had completed all three stages of the study and these completing participants made the sample for analysis.

Seven of the 198 participants in the data set were excluded from analysis due to abnormally short completion times of the questionnaires (less than five minutes) and/or the same response entered for items within multiple questionnaires, which indicated non-conscientious responding. A further three participants were excluded due to reporting scores ± 3 standard deviations from the mean on two or more outcome measures due to the likelihood that these people would have a disproportionate impact on the results, reducing generalisability. Three participants were excluded as they had recorded their age as 17 and were therefore ineligible.

Table 1

Characteristics of Participants Who Dropped Out or Were Excluded (N = 36) and of Final Sample (N = 185)

	Excluded N = 36	Included N = 185
Gender		
Female	27	149
Male	9	36
Ethnicity		
Asian/Asian British	4	18
Chinese	10	19
Mixed/Multiple ethnic groups	0	5
White	22	139
Other ethnic group	0	4

Final analysis was carried out using the data of 185 participants who had completed all three stages of the study. Participants were 149 females and 36 males aged between 18 and 36 ($M = 18.74$, $SD = 1.77$). An independent samples t -test and Chi-square was conducted to compare demographics of individuals who took part in the study and those that were excluded. There was no significant difference between participants that were included and excluded for age $t(219) = -0.05$, $p = .96$, gender, $\chi^2(1, N = 221) = .57$, $p = .45$ or ethnicity, $\chi^2(1, N = 221) = 2.00$, $p = .08$, meaning that the final participants were not likely to be unrepresentative of the sample.

Preliminary Analyses

Means, standard deviations and ranges for all variables are reported in Table 2. A one-way repeated measures ANOVA was conducted to examine the change in depressive symptoms, rumination and homesickness measures over time. Change in depressive symptoms over the first term indicated a significant time effect, $F(2, 183) = 6.77$, $p = .001$, $\eta^2 = .69$. Post hoc tests using the

Bonferroni correction revealed a modest significant difference between each pairwise difference, $p < .05$, indicating that students' depressive symptoms increased from Time 1 to Time 2 to Time 3, however, most still remained in the non-clinical range. With respect to rumination, a significant time effect indicated that participants' levels of rumination decreased over time, $F(2, 183) = 57.39$, $p < .001$, $\eta^2 = .39$. Follow up comparisons indicated that each pairwise difference was significant, $p < .01$. Repeated-measures ANOVAs showed no significant effect of time for participants' feelings of homesickness, $F(2, 183) = 1.86$, $p = .16$, $\eta^2 = .20$, indicating that levels of homesickness remained relatively stable in the entire sample over the course of the term.

Table 2

Means and Standard Deviations of All Study Variables

	Range	Mean	Std. Deviation
Goal Disengagement (Time 1)	4-18	10.54	3.30
Goal Reengagement (Time 1)	7-29	20.57	3.72
Depression (Time 1)	0-21	6.72	4.28
Depression (Time 2)	0-23	6.85	4.52
Depression (Time 3)	0-22	7.69	4.60
Rumination (Time 1)	4-58	32.36	10.52
Rumination (Time 2)	0-57	26.34	11.55
Rumination (Time 3)	0-58	24.08	13.10
Homesickness (Time 1)	38-144	74.82	19.44
Homesickness (Time 2)	35-131	73.25	18.91
Homesickness (Time 3)	34-142	73.76	19.19

Bivariate correlations were carried out between scores on the goal adjustment subscales, depression, rumination and homesickness at each timepoint, which are presented in Table 3. Correlations show that goal disengagement was not significantly correlated with depressive symptoms, rumination or homesickness at any timepoint. Goal reengagement was significantly associated with lower symptoms of depression at each timepoint. Goal reengagement was not significantly correlated with levels of rumination at any timepoint and only a negative significant correlation was seen with homesickness at time 3. High correlations were observed within the same measures, indicating rank order stability between individuals across the time points.

Running Head: GOAL FLEXIBILITY AS A PREDICTOR OF DEPRESSION

Table 3

Correlations between Goal Disengagement, Goal Reengagement, Depressive Symptoms, Rumination and Homesickness at each Time Point

	1	2	3	4	5	6	7	8	9	10	11
1 Goal Disengagement	-										
2 Goal Reengagement	.15*	-									
3 PHQ 8 Total (Time 1)	.03	-.18*	-								
4 PHQ 8 Total (Time 2)	-.07	-.19**	.65***	-							
5 PHQ 8 Total (Time 3)	.03	-.24**	.57**	.71***	-						
6 PTQ Total (Time 1)	-.04	-.04	.45**	.48**	.35**	-					
7 PTQ Total (Time 2)	-.03	-.12	.43**	.66***	.47**	.62***	-				
8 PTQ Total (Time 3)	-.06	-.07	.47**	.62***	.64***	.59**	.71***	-			
9 HQ Total (Time 1)	-.00	-.07	.30**	.26**	.16*	.18*	.21**	.22**	-		
10 HQ Total (Time 2)	-.04	-.09	.26**	.38**	.23**	.15*	.34**	.33**	.83***	-	
11 HQ Total (Time 3)	-.00	-.15*	.27**	.34**	.40**	.12	.28**	.41**	.68***	.81***	-

Note. * $p < .05$, ** $p < .01$, *** $p < .001$

Hypothesis 1: People with weaker tendencies to disengage from unattainable goals and (independently) weaker tendencies to reengage with alternative goals will experience greater depressive symptoms (H1a), and rumination (H1b) at baseline, and will experience greater homesickness at the beginning and middle of term (H1c, H1d).

Hypothesis 1a

A hierarchical regression was performed to assess whether (mean-centred) baseline levels of goal disengagement and/or reengagement independently predicted baseline depressive symptoms with results displayed in Table 4.

Goal disengagement and goal reengagement were entered in the first step of the model to control for these variables and the interaction between goal disengagement and goal reengagement was entered in the second step for exploratory analysis. The hierarchical multiple regression revealed that at step one goal disengagement did not significantly contribute to the model, however, goal reengagement was a significant predictor, $F(2, 182) = 3.37, p = .04$. These variables together accounted for 3.6% for the variance in baseline depressive symptoms. Introducing the interaction at step 2 did not explain significant additional variance, $F(1, 181) = 0.09, p = .76$. This indicated that goal disengagement at baseline was not predictive of depressive symptoms at baseline; however, higher goal reengagement scores were significant at predicting lower depressive scores which provided partial support for hypothesis 1a. Exploratory analysis identified no significant interactions between goal disengagement and goal reengagement predicting baseline depressive symptoms.

Table 4

Hierarchical Regression Predicting Depressive Symptoms at Time 1

	Depression (time 1)				
	<i>b</i>	<i>SE B</i>	β	<i>t</i>	<i>p</i>
Step 1					
Goal Disengagement	0.07	0.10	0.05	0.74	.46
Goal Reengagement	-0.21	0.08	-0.19	-2.57	.01
Step 2					
Goal Disengagement	0.07	0.10	0.58	0.77	.44
Goal Reengagement	-0.21	0.08	-0.19	-2.54	.02
Goal Disengagement x Goal Reengagement	0.01	0.24	0.02	0.31	.76

Hypothesis 1b

The hierarchical regression at step 1 revealed that goal disengagement and goal reengagement did not significantly predict baseline levels of rumination when entered together, $F(2, 182) = 0.27, p = .76$, with neither of these variables being significant as seen in Table 5. These variables accounted for 0.3% of the variance. Introducing the interaction between goal disengagement and goal reengagement at the second step explained a further 1.2% of the variance, $F(1, 181) = 2.13, p = .15$. The results of the regression indicated that neither goal disengagement nor goal reengagement (nor their interaction) were significant predictors of rumination at baseline, failing to support Hypothesis 1b.

Table 5

Hierarchical Regression Predicting Rumination at Time 1

	Rumination (time 1)				
	<i>b</i>	<i>SE B</i>	β	<i>t</i>	<i>p</i>
Step 1					
Goal Disengagement	-0.12	0.23	-0.04	-0.50	.62
Goal Reengagement	-0.10	0.21	-0.03	-0.46	.65
Step 2					
Goal Disengagement	-0.07	0.24	-0.02	-0.29	.77
Goal Reengagement	-0.08	0.21	-0.03	-0.36	.72
Goal Disengagement x Goal Reengagement	0.09	0.06	0.11	1.46	.15

Hypothesis 1c

The hierarchical regression at step 1 revealed that goal disengagement and goal reengagement did not significantly predict baseline levels of homesickness when entered together, $F(2, 182) = .048$, $p = .62$, with neither of these variables being significant. These variables accounted for 0.5% of the variance, as seen in Table 6. Introducing the interaction between goal disengagement and goal reengagement explained a significant additional 4.5% of the variance, $F(1, 181) = 8.55$, $p = .004$. The analysis showed that neither goal disengagement or goal reengagement were independent predictors of levels of homesickness at time 1 and failed to provide support for hypothesis 1c.

Table 6

Hierarchical Regression Predicting Homesickness at Time 1

	Homesickness (time 1)				
	b	SE B	β	t	p
Step 1					
Goal Disengagement	0.06	0.44	0.01	0.14	.89
Goal Reengagement	-0.38	0.39	-0.07	-0.98	.33
Step 2					
Goal Disengagement	0.24	0.43	0.04	0.55	.58
Goal Reengagement	-0.30	0.38	-0.06	-0.80	.43
Goal Disengagement x Goal Reengagement	0.31	0.11	0.22	2.92	.00

Simple slopes analysis, as seen in Figure 1, were used to interpret the significant interaction. These revealed that when goal reengagement was one standard deviation below the mean, then goal disengagement did not significantly predict homesickness, ($t = -1.63$, $p = .11$). When goal reengagement was 1 standard deviation above the mean, however, then goal disengagement significantly predicted greater homesickness ($t = 2.16$, $p = .03$).

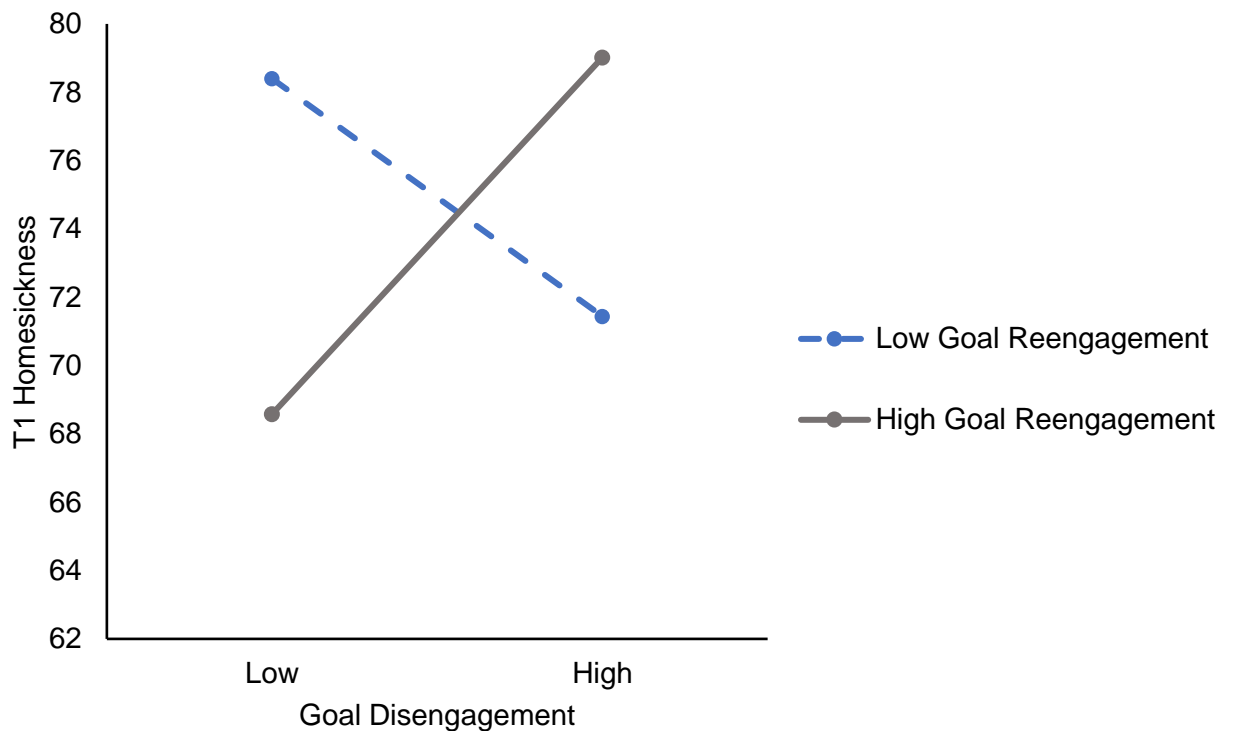


Figure 1. Association between baseline levels of goal disengagement and baseline levels of homesickness, separately for participants with low versus high baseline levels of goal reengagement capacities.

Hypothesis 1d

The hierarchical regression at step 1 revealed that goal disengagement and goal reengagement did not significantly predict levels of homesickness in the middle of term when entered together, $F(2, 182) = 0.84, p = .43$, with neither of these variables being significant. These variables accounted for 0.9% of the variance, as seen in Table 7. Entering the interaction between goal disengagement and goal reengagement at step 2 explained a significant additional 6% of the variance, $F(1, 181) = 11.69, p = .001$. Independently neither variable was predictive of homesickness at time 2, which failed to provide evidence for hypothesis 1d. However, a significant interaction effect between goal disengagement and goal reengagement was observed.

Table 7

Hierarchical Regression Predicting Homesickness at Time 2

	Homesickness (time 2)				
	<i>b</i>	<i>SE B</i>	β	<i>t</i>	<i>p</i>
Step 1					
Goal Disengagement	-0.13	0.43	-0.02	-0.31	.76
Goal Reengagement	-0.45	0.38	-0.09	-1.20	.23
Step 2					
Goal Disengagement	0.07	0.42	0.01	0.17	.87
Goal Reengagement	-0.37	0.37	-0.07	-1.00	.32
Goal Disengagement x Goal Reengagement	0.35	0.10	0.25	3.42	.001

Simple slopes analysis, as seen in Figure 2, were used to interpret the significant interaction. These revealed that when goal reengagement was one standard deviation below the mean, then goal disengagement predicted significantly lower levels of homesickness, ($t = -2.29$, $p = .02$). When goal reengagement was one standard deviation above the mean, however, then goal disengagement predicted significantly greater homesickness ($t = -2.19$, $p = .03$).

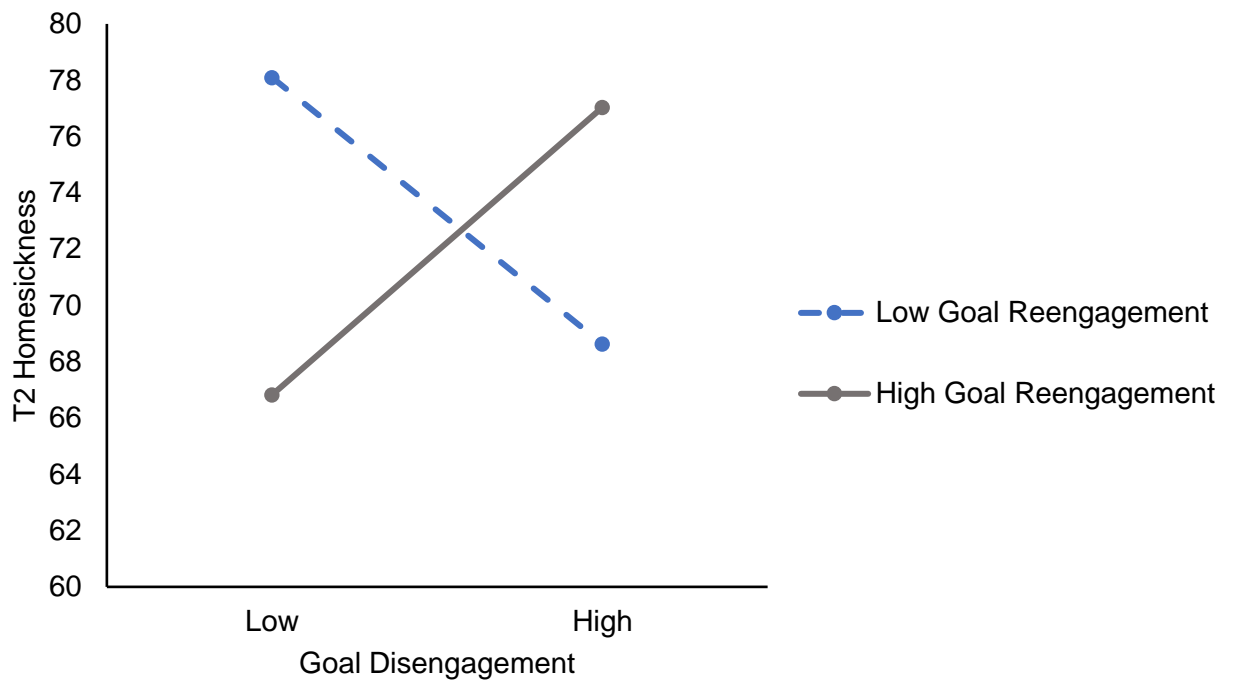


Figure 2. Interaction between baseline levels of goal disengagement and time 2 homesickness, separately for participants with low versus high baseline levels of goal reengagement capacities.

Hypothesis 2: Difficulties with goal disengagement and goal reengagement (independently) will predict change in depressive symptoms from the beginning to end of term (H2a). These relationships will be partly mediated by change in homesickness measured from beginning to the middle of term (H2b).

Hypothesis 2a

When investigating the relationship between goal adjustment and change in depressive symptoms at time 3, the hierarchical multiple regression revealed that at step 1, goal reengagement significantly predicted lower levels of depressive symptoms. However, goal disengagement did not and these variables (including depressive symptoms at baseline) accounted for 34% of the

variance in depressive symptoms at time 3, $F(3, 181) = 31.12, p < .01$, (see Table 8). Adding the interaction between goal disengagement and goal reengagement at step 2 explained an additional 1.1% of variance, which was not significant, $F(1, 180) = 2.94, p = .88$. When controlling for baseline depressive symptoms, goal disengagement showed no predictive ability for change in depressive symptoms at time 3. However, goal reengagement was significant in predicting relatively reduced time 3 depressive symptoms, which provided partial support for hypothesis 2a.

Table 8

Hierarchical Regression Examining Goal Reengagement and Goal Disengagement to Predict Depressive symptoms at Time 3 with Interactions

	Depression (time 3)				
	<i>b</i>	<i>SE B</i>	β	<i>t</i>	<i>p</i>
Step 1					
Goal Disengagement	0.05	0.09	0.04	0.58	.56
Goal Reengagement	-0.18	0.08	-0.15	-2.35	.02
Depression (time 1)	0.58	0.07	0.54	8.76	.00
Step 2					
Goal Disengagement	0.07	0.09	0.05	0.82	.41
Goal Reengagement	-0.17	0.08	-0.14	-2.25	.03
Depression (time 1)	0.58	0.07	0.54	8.76	.00
Goal Disengagement x Goal Reengagement	0.04	0.02	0.11	1.72	.09

The analytic strategy for hypothesis 2b was dependent on significant associations between goal disengagement, goal reengagement and change in depressive symptoms being identified at time 3. As no significant relationships or correlations were reported between goal disengagement and depressive

symptoms at time 3, mediation between goal disengagement, change in homesickness and depressive symptoms at time 3 was unlikely. Goal reengagement, however, was found to be a significant predictor of depressive symptoms at time 3. Therefore, it was deemed appropriate to conduct mediation analysis to investigate whether the relationship between goal reengagement and change in depressive symptoms from Time 1 to Time 3 was mediated by change in homesickness from Time 1 to Time 2.

Hypothesis 2b

Mediation analysis explores how a relationship between a predictor variable and an outcome variable can be explained by their relationship to a third variable (Field, 2018). The first phase of the mediation analysis was conducted using the method described by Baron and Kenny (1986) and involved testing four conditions: (1) the predictor needs to significantly predict the outcome variable ('c' path); (2) the predictor must predict the mediator ('a' path); (3) the mediator needs to significantly predict the outcome variable when controlling for the predictor ('b' path); and (4) the predictor variable predicts the outcome variable less strongly when the mediator is in the model ('c'' path). Bootstrapping (Hayes, 2013) was then used to test the indirect path with the predictor and mediator included in the model.

As goal reengagement emerged as the only predictor for change in depressive symptoms at time 3, mediation analysis involved entering goal reengagement as the predictor variable, depressive symptoms at time 3 as the outcome variable and the change in homesickness between time 1 and time 2 as the mediator (Figure 3). Depressive symptoms at time 1 and goal disengagement were entered as covariates. Residual change in homesickness

from baseline to time 2 was calculated by carrying out a linear regression between homesickness at time 1 and time 2 and saving the unstandardized residuals, which represent variance in homesickness at time 2 that is unexplained by homesickness at baseline.

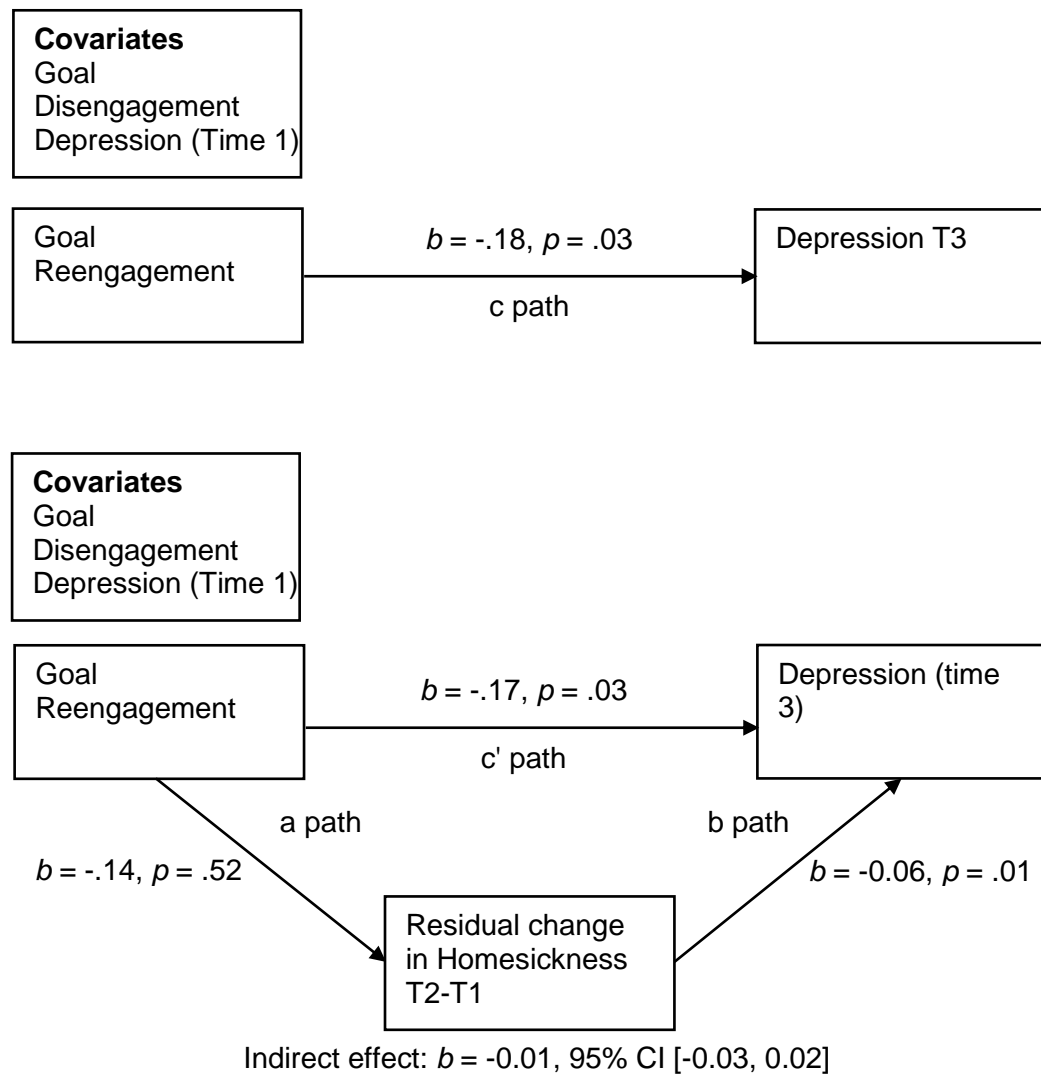


Figure 3. Mediation model testing indirect effects of change in homesickness on the association between goal reengagement and depressive symptoms at time 3.

When change in homesickness was not included in the model, goal reengagement predicted depressive symptoms at time 3 when controlling for goal disengagement and depressive symptoms at time 1 (path c; see top of Figure 3). As demonstrated earlier, higher scores for goal reengagement were predictive of fewer symptoms of depression at the end of term.

When controlling for baseline depressive symptoms and goal disengagement, goal reengagement did not predict residualised change in homesickness from Time 1 to Time 2 (path a) suggesting that criterion (2) for mediation was not met.

When controlling for baseline levels of depressive symptoms, goal disengagement and goal reengagement, change in homesickness was significant in predicting depressive symptoms at time 3, (path b; see bottom of Figure 3). Individuals who experienced a greater increase in homesickness from beginning to middle of term had decreases in symptoms of depression from beginning to the end of term.

Goal reengagement, however, was still a significant predictor of depressive symptoms at time 3 with change in homesickness included in the model (path c') indicating that full mediation had not occurred. When looking at the indirect relationship of goal reengagement on change in depressive symptoms scores from Time 1 to Time 3 via residualised change in homesickness from Time 1 to Time 2, there was no significant indirect relationship between goal reengagement and depressive symptoms, $b = -0.01$, 95% CI [-0.03, 0.02]. This is because goal reengagement did not predict residual change in homesickness at time 2. Thus, no support was found for hypothesis 2b.

Discussion

The current study set out to contribute to goal theory literature by investigating how goal adjustment in new undergraduate students is associated with rumination at the start of term and change in depressive symptoms and homesickness over the academic term. It further investigated whether homesickness partly mediates the relationship between goal adjustment and change in depressive symptoms.

Results of the current study showed that goal disengagement was unrelated to depressive symptoms, rumination and homesickness at baseline, failing to provide evidence for part of hypothesis 1. Furthermore, goal disengagement did not predict changes in depressive symptoms at time 3, which failed to support part of hypothesis 2.

Findings also highlighted that goal reengagement was unrelated to homesickness and rumination at baseline. Goal reengagement, however, was negatively correlated with depressive symptoms across all three timepoints, which provided partial support for hypothesis 1. Furthermore, goal reengagement was associated with reduced depressive symptoms at time 3 when controlling for baseline depression, however, this relationship was not mediated by change in homesickness. Taken together, this provided partial support for goal reengagement and aspects of hypothesis 2.

Goal disengagement and depression, rumination and homesickness

Given the extensive literature in the area of goal adjustment that has shown adaptive goal disengagement to be associated with reduced symptoms of depression and higher levels of wellbeing, it was unexpected that this was not observed when testing hypothesis 1, failing to support previous research by

Wrosch et al. (2003b, 2007). While there was a small increase in depressive symptoms in students over the first term, the non-significant relationship with goal disengagement may reflect how these capacities may not be necessary for adjusting to university in the first term. During this period there may be more focus on new opportunities, i.e., adopting new goals and less consideration of abandoning goals. Moreover, it may not be necessary to consider relinquishing goals during this period as they do not pose a problem, therefore, goal disengagement would not predict depressive symptoms or rumination.

It is also possible that students have more opportunities to maintain previous goals and relationships, for example, through social media and opportunities at university to continue with existing goals and interest. This would further reduce the need to consider relinquishing goals and provide opportunities for positive affect. These explanations would have been clearer had the current study assessed or controlled for personal goals of participants and if these needed to be abandoned or had become blocked since starting university.

The lack of findings between goal disengagement and any outcome measure may reflect that goal disengagement capacities are still developing within the person. Mens et al. (2017) write that it is unclear when goal adjustment capacities are most readily developed; however, research indicates a sharp rise in goal adjustment capacities during adolescence and that this may develop further into older age (Wrosch et al., 2013). The findings of the current study may therefore be reflecting a period in students' lives where they have some goals that may be unattainable, which they will eventually learn to abandon. This experience of abandoning goals will result in the development of goal adjustment capacities. Furthermore, Mens et al. (2007) writes that the on-

time experience of life developmental events and transitions may present opportunities to develop adaptive goal adjustment strategies. Critically, starting university may present a significant transition where goal adjustment capacities will develop through experience.

Goal disengagement and goal reengagement were not predictive of change in homesickness, which was unexpected given the previous work by Millar and colleagues (1988) and Holmbeck and Wandrei (1993). While the null findings for goal disengagement make inferences challenging, the decrease in ruminative scores over term and the relative stability of low homesickness could indicate that students generally made an adaptive adjustment to university with few threats to goals. Furthermore, the significant relationship between goal reengagement and depressive symptoms at time 3, together with the significant negative correlation between goal reengagement and homesickness at time 3 could suggest that goal reengagement may have buffered against potential homesickness. The adaptive function of goal reengagement will be discussed below.

Goal reengagement and depression, rumination and homesickness

Hypothesis 1 stated that lower goal reengagement would be associated with greater depressive symptoms, rumination and homesickness at baseline. Analysis showed that higher goal reengagement was significant for predicting reduced depressive symptoms at baseline and no other outcome variables, which provided partial support for hypothesis 1. Additionally, when controlling for baseline levels of depressive symptoms, higher goal reengagement scores were associated with reduced depressive symptoms at time 3. However, this

relationship was not mediated by change in homesickness from time 1 to time 2 failing to provide any support for hypothesis 2b.

The partial support for hypothesis 1 and 2 adds to the previous work of Wrosch et al. (2003b) who found that parents of children with cancer who were able to reengage with other meaningful goals reported reduced depressive symptoms. The current study was able to contribute to these cross-sectional findings, by demonstrating how goal reengagement was associated with less of an increase in depressive symptoms longitudinally. Additionally, these findings lend support to the theoretical framework of goal adjustment which states that goal reengagement tendencies are important for wellbeing (Wrosch et al., 2003b).

Although goal reengagement measures the tendency to reengage after unattainable goals, a possible explanation of the current findings could be that goal reengagement activates the reward pathway associated with behavioural activation and therefore might protect against depressive symptoms (Thompson, Stanton & Bower, 2013). This idea is consistent with Gray's (1987) behavioural activation system (BAS), which is a theoretical brain system that is sensitive to cues of reward and central in activating goal directed behaviour. While the mechanism for the BAS is unknown, it is hypothesised to control goal directed behaviour in response to cues of reward via dopaminergic activity in the mesolimbic system (Depue & Collins, 1999; Gray, 1994). Individuals with greater activation of the BAS experience higher levels of positive affect in response to environmental cues consistent with reward as well as goal achievement (Serrano-Ibáñez, 2018). This could explain the association between goal reengagement and relatively lower symptoms of depression at the beginning and end of term, meaning that students with higher goal

reengagement capacities had created and experienced more opportunities for positive affect, including having started university.

Wrosch, Amir, and Miller (2011) note that while goal reengagement is adaptive for self-regulation, if individuals adopt too many goals, they may risk exhausting personal resources and need to rely on maladaptive coping strategies that could jeopardise their wellbeing. While this appeared not to be the case in the current study, it is possible that younger adults and students may have more internal resources, opportunities and support to pursue many goals without needing to abandon existing goals (Wrosch & Miller, 2009). This could also help to explain the lack of meaningful findings for goal disengagement. Alternatively, there is the possibility that the students in the selected sample had not encountered many unattainable goals, particularly having attained the requirements to attend a high-ranking university.

No significant relationships were found between goal disengagement or goal reengagement and rumination at any timepoint. Martin and Tesser (1996) describe how lack of progress towards a goal can lead to rumination and distress and that ways to reduce rumination is to disengage from the goal or to achieve the goal. This suggests that students may have generally been making nonproblematic progress and thus experiencing little ruminative thoughts or distress. However, these are difficult inferences to make in the absence of specific data on students' personal goals.

Although the general trend for homesickness over term showed no significant change, it may be noteworthy to state that the increase in homesickness identified between baseline and time 2 was associated with a decrease in depressive symptoms at the end of term. While unexpected, these findings could reflect that students who were experiencing homesickness

experienced reduced depressive symptoms at the end of term because of the prospect of going back home.

Limitations

Despite the significant findings for goal reengagement, it is worth commenting that goal reengagement could be acting as a proxy for unmeasured personality traits such as extraversion or optimism. Goal adjustment capacities and optimism have been found to be positively correlated (Esteve et al., 2018; Hannsen et al., 2015) and optimists are likely to demonstrate more tenacity when confronted with difficult life situations than pessimists (Wrosch & Scheier, 2003). Studies have also noted the negative association between optimism and depression (Carver & Gaines, 1987) and have started to look at the interaction with goal disengagement which has shown some evidence for how the two might interact to reduce depression (Lam et al., 2016).

While the current study was novel in looking at homesickness, no questions assessed the current living situation of participants. This may have been a particular oversight as students may have continued with existing living arrangements, such as living with their parents. Alternatively, they may have moved and were visiting home each weekend, which may have buffered against feelings of homesickness. Future research would address this in the inclusion criteria so that only undergraduates who have moved would be eligible to take part.

Another limitation of the current study is that participants' individual goals were not examined and it is unclear whether coming to university actually resulted in unattainability of previous goals. Thompson, Stanton, and Bower

(2013) comment that fewer studies have examined ability to adjust goals in specific situational contexts. While the GAS measures general responses to blocked goals, assessing specific goals may further overcome some of the limitations associated with self-report scales.

Clinical Implications

The increase in depressive symptoms observed over the first term could be beneficial to know for health workers and university counsellors in order to offer tailored student support to prevent escalation of symptoms. Furthermore, student wellbeing services and counsellors could be made aware through training about the benefits of goal reengagement. It is possible that the relationship observed between higher goal reengagement and lower depressive symptoms could help students with the transition to university by encouraging them to behaviourally approach meaningful goals. Direct work with students could involve discussions about adjusting to university, recognising unattainable goals and developing meaningful new goals. Support with goal adjustment could be monitored by wellbeing measures and symptoms of depression, as was used in the current study, to monitor long term change.

Although these findings are inconclusive about causal relationships, goal reengagement could support students to reorient to new goals through acceptance and commitment therapy or cognitive behavioural therapy, specifically behavioural activation in developing treatment goals that are consistent with one's values (Veale, 2008). The current findings could further contribute to emerging literature on developing interventions based on goal setting and planning which have demonstrated a positive impact on affect (MacLeod, Coates, & Hetherington, 2008).

It is important to state that while these findings do not demonstrate causation, the implications may be particularly noteworthy considering the rise in the number of UK students seeking mental health support (Spitzer-Wong, 2018).

Despite homesickness not being significantly associated with goal adjustment, its high correlation with depression, together with the report from The Student Housing Company (2017) that 73% of students stated feelings of homesickness, suggests that homesickness is an area that deserves further attention. Not only can homesickness impact upon an individual's mood and wellbeing, but it may also affect academic performance and retention (Sun, Hagedorn, & Zhang, 2016). Moreover, as homesickness is something that many students experience, additional research would go some way to help understand it better and improve the student experience as well as prevent the possible development of more serious psychopathology.

Future Direction

Although significant results were obtained between goal reengagement and symptoms of depression, the possibility that goal reengagement may be confounded with other variables means that further research is necessary. Previous research has noted positive correlations between goal reengagement and optimism therefore future research could investigate if goal reengagement predicts depressive symptoms when controlling for optimism and how the two constructs interact.

Future research may benefit from investigating situational goal adjustment by asking students to identify specific goals that may have been disrupted since attending university. Assessing both general goal adjustment

tendencies and situational goal adjustment may help to address some of the limitations of self-report questionnaires which may not capture how individuals actually respond when faced with a blocked goal (Wallace et al., 2012).

Conclusion

The current study investigated goal adjustment theory in the context of transitioning to university where it was predicted that lower levels of goal disengagement and goal reengagement in students would be associated with poorer outcomes of depressive symptoms, rumination and homesickness. Goal disengagement was unrelated to any outcome measure, which was unexpected; however, higher capacities of goal reengagement were found to be associated with a decrease in depressive symptoms over term. Although there was a lack of evidence for goal disengagement, the findings for goal reengagement contributed to the literature of goal adjustment by recognising how reengaging in goals perceived to be attainable can protect against depressive symptoms. Finally, identification of goals consistent with one's values could support tailoring clinical interventions to individuals experiencing mood disorders.

Reference

- American Psychiatric Association. (2013). *Diagnostic and statistical manual of mental disorders (5th ed.)*. Washington, DC: Author.
- Archer, J., Ireland, J., Amos, S. L., Broad, H., & Currid, L. (1998). Derivation of a homesickness scale. *British Journal of Psychology*, *89*, 205–221.
- Baron, R. M., & Kenny, D. A. (1986). The moderator–mediator variable distinction in social psychological research – conceptual, strategic, and statistical considerations. *Journal of Personality and Social Psychology*, *51*(6), 1173–1182.
- Brandtstädter, J., & Renner, G. (1990). Tenacious goal pursuit and flexible goal adjustment: Explication and age-related analysis of assimilative and accommodative strategies of coping. *Psychology and Aging*, *5*, 58-67.
- Carver, C. S., & Gaines, J. G. (1987). Optimism, pessimism, and postpartum depression. *Cognitive Therapy and Research*, *11*(4), 449-462.
- Carver, C. S., & Scheier, M. F. (1981). *Attention and self-regulation: A control theory approach to human behavior*. New York, NY: Springer.
- Carver, C. S., & Scheier, M. F. (1998). *On the self-regulation of behaviour*. New York, NY: Cambridge University Press.

Chow, K., & Healey, M. (2008). Place attachment and place identity: First-year undergraduates making the transition from home to university. *Journal of Environmental Psychology, 28*(4), 362-372.

Depue, R. A., & Collins, P. F. (1999). Neurobiology of the structure of personality: Dopamine, facilitation of incentive motivation, and extraversion. *Behavioral and Brain Sciences, 22*(3), 491-569.

Di Paula, A., & Campbell, J. D. (2002). Self-esteem and persistence in the face of failure. *Journal of Personality and Social Psychology, 83*(3), 711-724.

Ehring, T., Zetsche, U., Weidacker, K., Wahl, K., Schönfeld, S., & Ehlers, A. (2011). The perseverative thinking questionnaire (PTQ): Validation of a content-independent measure of repetitive negative thinking. *Journal of behavior therapy and experimental psychiatry, 42*(2), 225–232.

Elliot, A. J., & Murayama, K. (2008). On the measurement of achievement goals: Critique, illustration, and application. *Journal of Educational Psychology, 100*, 613–628.

English, T., Davis, J., Wei, M., & Gross, J. J. (2017). Homesickness and adjustment across the first year of college: A longitudinal study. *Emotion, 17*(1), 1-5.

Esteve, R., López-Martínez, A. E., Peters, M. L., Serrano-Ibáñez, E. R., Ruiz-Párraga, G. T., & Ramírez-Maestre, C. (2018). Optimism, positive and

negative affect, and goal adjustment strategies: Their relationship to activity patterns in patients with chronic musculoskeletal pain. *Pain Research and Management*, 2018, 6291719. doi:10.1155/2018/6291719

Faul, F., Erdfelder, E., Lang, A. G., & Buchner, A. (2007). G*Power 3: A flexible statistical power analysis program for the social, behavioral, and biomedical sciences. *Behavior Research Methods*, 39(3), 175-191.

Field, A. (2018). *Discovering Statistics Using IBM SPSS Statistics* (5th ed.). London: Sage.

Fisher, S., & Hood, B. (1987). The stress of the transition to university: A longitudinal study of psychological disturbance and vulnerability to homesickness. *British Journal of Psychology*, 78, 425-441.

Frisch, M. B. (1998). Quality of life therapy and assessment in health care. *Clinical Psychology: Science and Practice*, 5, 19-40.

Fritz, M. S., & Mackinnon, D. P. (2007). Required sample size to detect the mediated effect. *Psychological Science*, 18(3), 233-9.

Gray, J. A. (1987). The neuropsychology of emotion and personality. In: S. M Stahl, S. D. Iversen, & E. C. Goodman (Eds.), *Cognitive neurochemistry*, (pp. 171-190). New York, NY: Oxford University Press.

- Gray, J. A. (1994). Three fundamental emotion systems. In P. Ekman & R. J. Davidson (Eds.), *The nature of emotion: Fundamental questions*. (pp. 243-247). New York, NY: Oxford University Press.
- Hanssen, M. M., Vancleef, L. M. G., Vlaeyen, J. W. S., Hayes, A. F., Schouten, E. G. W., & Peters, M. L. (2015). Optimism, motivational coping and well-being: Evidence supporting the importance of flexible goal adjustment. *Journal of Happiness Studies: An Interdisciplinary Forum on Subjective Well-Being*, 16(6), 1525-1537.
- Hayes, A. F. (2013). *Introduction to mediation, moderation, and conditional process analysis: A regression based approach*. London: Guildford Press.
- Holmbeck, G. N., & Wandrei, M. L. (1993). Individual and relational predictors of adjustment in first-year college students. *Journal of Counseling Psychology*, 40(1), 73-78.
- Ingrid, B., Majda, R., & Dubravka, M. (2009). Life goals and well-being: Are extrinsic aspirations always detrimental to well-being? *Psychological Topics*, 18(2), 317-334.
- Kroenke, K., Spitzer, R. L., Williams, J. B. W., & Löwe, B. (2010). The patient health questionnaire somatic, anxiety and depressive symptoms scales: A systematic review. *General Hospital Psychiatry*, (32)4, 345-359.

- Kroenke, K., Strine, T. W., Spritzer, R. L., Williams, J. B., Berry, J. T., & Mokdad, A. H. (2009). The PHQ-8 as a measure of current depression in the general population. *Journal of Affective Disorders, 114*(1-3), 163-73.
- Lam, W. W. T., Yeo, W., Suen, J., Ho, W. M., Tsang, J. W. H., Soong, S. I., Yau, T. K., Wong, K. Y., Sze, W. K., & Ng, A. W. (2016). Goal adjustment influence on psychological well-being following advanced breast cancer diagnosis. *Psycho-Oncology, 25*(1), 58-65.
- MacLeod, A. K., Coates, E., & Hetherington, J. (2008). Increasing well-being through teaching goal-setting and planning skills: Results of a brief intervention. *Journal of Happiness Studies: An Interdisciplinary Forum on Subjective Well-Being, 9*(2), 185-196.
- Martin, L. L., & Tesser, A. (1996). Some ruminative thoughts. In R. S. Wyer (Ed.), *Advances in social cognition* (Vol. 9, pp. 1-47). Mahwah, NJ: Erlbaum.
- Martin, L. L., & Tesser, A. (1989). Toward a motivational and structural theory of ruminative thought. In J. S. Uleman & J. A. Bargh (Eds.), *Unintended thought* (pp. 306-326). New York, NY: Guilford Press.
- Medalie, J. (1981). The college years as a mini-life cycle: Developmental tasks and adaptive options. *Journal of the American College Health Association, 30*(10), 75-79.

Mens, M. G., Wrosch, C., & Scheier, M. F. (2017). Goal adjustment theory. In S. K. Whitbourne (Eds.), *The Wiley-Blackwell encyclopaedia of adult development and aging*. London: Wiley-Blackwell.

Millar, K. U., Tesser, A., & Millar, M. G. (1988). The effects of a threatening life event on behavior sequences and intrusive thought: A self-disruption explanation. *Cognitive Therapy and Research*, *12*(5), 441-457.

Miller, G. E., & Wrosch, C. (2007). You've gotta know when to fold 'em: Goal disengagement and systemic inflammation in adolescence. *Psychological Science*, *18*(9), 773-777.

Moberly, N. J., & Watkins, E. R. (2010). Negative affect and ruminative self-focus during everyday goal pursuit. *Cognition & Emotion*, *24*(4), 729-739.

Nolen-Hoeksema, S., & Morrow, J. (1991). A prospective study of depression and posttraumatic stress symptoms after a natural disaster: the 1989 Loma Prieta earthquake. *Journal of Personality and Social Psychology*, *61*, 115-121.

Pressler, S. J., Subramanian, U., Perkins, S.M., Gradus-Pizlo, I., Kareken, D., Kim, J., Ding, Y., Sauvé, M. J., & Sloan, R. (2011). Measuring depressive symptoms in heart failure: Validity and reliability of the patient health questionnaire-8. *American Journal of Critical Care*, *20*(2), 146-152.

- Seligman, M. E. P. (1975). *Helplessness: On depression, development and death*. New York, NY: Freeman.
- Serrano-Ibáñez, E. R., Ramírez-Maestre, C., López-Martínez, A. E., Esteve, R., Ruiz-Párraga, G. T., & Jensen, M. P. (2018). Behavioral inhibition and activation systems, and emotional regulation in individuals with chronic musculoskeletal pain. *Frontiers in psychiatry, 9*, 394.
doi:10.3389/fpsy.2018.00394
- Siegert, R. J., McPherson, K. M., & Taylor, W. (2004). Toward a cognitive-affective model of goal setting in rehabilitation: Is self-regulation theory a key step? *Disability and Rehabilitation, 26*(20), 1175-1183.
- Spitzer-Wong, G. (2018, October 29). *More students seek mental health support, analysis shows*. Retrieved from <https://www.bbc.co.uk/news/uk-england-45824598>
- Stroebe, M., Schut, H., & Nauta, M. (2015). Homesickness: A systematic review of the scientific literature. *Review of General Psychology, 19*(2), 157-171.
- Stroebe, M., Vliet, T. V., Hewstone, M., & Willis, H. (2002). Homesickness among students in two cultures: antecedents and consequences. *British Journal of Psychology, 93*, 147-168.
- The Student Housing Company (2017, February). How to cope with homesickness at university. Retrieved from

<https://thestudenthousingcompany.com/blog/how-to-deal-with-feeling-homesick-at-uni>

Sun, J. & Hagedorn, L. S. & Zhang, Y. (2016). Homesickness at College: Its Impact on Academic Performance and Retention. *Journal of College Student Development* 57(8), 943-957.

Thompson, E., Stanton, A. L., & Bower, J. E. (2013). Situational and dispositional goal adjustment in the context of metastatic cancer. *Journal of Personality*, 81(5), 441-451.

Thurber, C. A., & Walton, E. A. (2012). Homesickness and adjustment in university students. *Journal of American College Health*, 60(5), 415-419.

van Randenborgh, A., Hüffmeier, J., LeMoult, J., & Joormann, J. (2010). Letting go of unmet goals: Does self-focused rumination impair goal disengagement? *Motivation and Emotion*, 34(4), 325-332.

Veale, D. (2008). Behavioural activation for depression. *Advances in Psychiatric Treatment*, 14(1), 29-36.

Verschuur, M. J., Eurelings-Bontekoe, E. H. M., & Spinhoven, P. (2001). Construction and validation of the Homesickness Vulnerability Questionnaire. *Personality and Individual Differences*, 30(1), 11-19.

Wallace, M. L., Dombrovski, A. Y., Morse, J. Q., Houck, P. R., Frank, E., Alexopoulos, G. S., Reynolds, C. F., Schulz, R. (2012). Coping with

health stresses and remission from late-life depression in primary care: A two-year prospective study. *International Journal of Geriatric Psychiatry*, 27(2), 178-186.

Watkins, E. R. (2008). Constructive and unconstructive repetitive thought. *Psychological Bulletin*, 134(2), 163-206.

Wortman, C. B., & Brehm, J. W. (1975). Responses to uncontrollable outcomes: An integration of reactance theory and the learned helplessness model. In L. Berkowitz (Ed.), *Advances in Experimental Social Psychology* (Vol. 8, pp. 277- 336). New York, NY: Academic Press.

Wrosch, C., Amir, E., & Miller, G. E. (2011). Goal adjustment capacities, coping, and subjective well-being: The sample case of caregiving for a family member with mental illness. *Journal of Personality and Social Psychology*, 100(5), 934-946.

Wrosch, C., & Heckhausen, J. (1999). Control processes before and after passing a developmental deadline: Activation and deactivation of intimate relationship goals. *Journal of Personality and Social Psychology*, 77(2), 415-427.

Wrosch, C., & Miller, G. E. (2009). Depressive symptoms can be useful: Self-regulatory and emotional benefits of dysphoric mood in adolescence. *Journal of Personality and Social Psychology*, 96(6), 1181-1190.

Wrosch, C., Miller, G. E., Scheier, M. F., & de Pontet, S. B. (2007). Giving up on unattainable goals: Benefits for health? *Personality and Social Psychology Bulletin*, 33(2), 251-265.

Wrosch, C., & Scheier, M. F. (2003). Personality and quality of life: The importance of optimism and goal adjustment. *Quality of Life Research: An International Journal of Quality of Life Aspects of Treatment, Care & Rehabilitation*, 12(Suppl1), 59-72.

Wrosch, C., Scheier, M. F., Carver, C. S., & Schulz, R. (2003a). The importance of goal disengagement in adaptive self-regulation: When giving up is beneficial. *Self and Identity*, 2, 1-20.

Wrosch, C., Scheier, M. F., Miller, G. E., Schulz, R., & Carver, C.S. (2003b). Adaptive self-regulation of unattainable goals: Goal disengagement, goal reengagement, and subjective well-being. *Personality and Social Psychology Bulletin*, 29, 1494-1508.

Appendices

Appendix A - University of Exeter Ethical Approval



CLES – Psychology
Psychology
College of Life and Environmental
Sciences
University of Exeter
Washington Singer Building
Perry Road
Exeter
EX4 4QG
Web: www.exeter.ac.uk

CLES – Psychology Ethics Committee

Dear Mandeep Bachu

Ethics application - eCLESPsy000654

Goal flexibility, self-compassion as predictors of homesickness and wellbeing

Your project has been reviewed by the CLES – Psychology Ethics Committee and has received a Favourable opinion.

The Committee has made the following comments about your application:

Heather: the trainees would like to add a measure of anxious symptoms (GAD-7) that is administered at the same times as the PHQ-8. If you see any issues with this, please add to your comments.

- Please view your application at <https://eethics.exeter.ac.uk/CLESPsy/> to see comments in full. If you have received a Favourable with conditions, Provisional or unfavourable outcome you are required to re-submit for full review and/or confirm that committee comments have been addressed before you begin your research.

If you have any further queries, please contact your Ethics Officer.

Yours sincerely

Date: 04/04/2019

CLES – Psychology Ethics Committee

Mandeep Bachu e-Ethics Application outcome decided (eCLESPsy000654 v2.1)

ethics@exeter.ac.uk

Tue 18/09/2018 15:53

To: Bachu, Mandeep <mb765@exeter.ac.uk>

Cc: Moberly, Nick <N.J.Moberly@exeter.ac.uk>

Dear Mandeep Bachu,

Application ID: **eCLESPsy000654 v2.1**Title: **Goal flexibility, self compassion as predictors of homesickness and wellbeing**

Your e-Ethics application has been reviewed by the CLES Psychology Ethics Committee.

The outcome of the decision is: **Favourable****Potential Outcomes**

<i>Favourable:</i>	The application has been granted ethical approval by the Committee. The application will be flagged as Closed in the system. To view it again, please select the tick box: View completed
<i>Favourable, with conditions:</i>	The application has been granted ethical approval by the Committee under the provision of certain conditions. These conditions are detailed below.
<i>Provisional:</i>	You have not been granted ethical approval. The application needs to be amended in light of the Committee's comments and re-submitted for Ethical review.
<i>Unfavourable:</i>	You have not been granted ethical approval. The application has been rejected by the Committee. The application needs to be amended in light of the Committee's comments and resubmitted / or you need to complete a new application.

Please view your application [here](#) and respond to comments as required. You can download your outcome letter by clicking on the 'PDF' button on your eEthics Dashboard.

If you have any queries please contact the CLES Psychology Ethics Chair:

Lisa Leaver L.A.Leaver@exeter.ac.uk

Kind regards,
CLES Psychology Ethics Committee

Appendix B - Study Questionnaires**Goal Adjustment Scale**

During their lives people cannot always attain what they want and are sometimes forced to stop pursuing the goals they have set. We are interested in understanding how you usually react when this happens to you. Please indicate the extent to which you agree or disagree with each of the following statements, as it usually applies to you.

If I have to stop pursuing an important goal in my life...	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
	1	2	3	4	5
1. It's easy for me to reduce my effort towards the goal.					
2. I convince myself that I have other meaningful goals to pursue.					
3. I stay committed to the goal for a long time; I can't let it go.					
4. I start working on other new goals.					
5. I think about other new goals to pursue.					
6. I find it difficult to stop trying to achieve the goal.					
7. I seek other meaningful goals.					
8. It's easy for me to stop thinking about the goal and let it go.					
9. I tell myself that I have a number of other new goals to draw upon.					
10. I put effort toward other meaningful goals.					

Scoring:

Strongly Disagree = 1

Disagree = 2

Neutral = 3

Agree = 4

Strongly Agree = 5

Computation:

Goal Disengagement Scale:

Compute mean of items #1, #3, #6, and #8 (Item #3 and #6 need to be reversed coded prior to scale computation, i.e., change 1 to 5, 2 to 4, 4 to 2, and 5 to 1).

Goal Reengagement Scale:

Compute mean of items #2, #4, #5, #7, #9, and #10

Patient Health Questionnaire 8

Over the last 2 weeks, how often have you been bothered by any of the following problems?	Not at all	Several Days	More than half the days	Nearly Every day
1. Little interest or pleasure in doing things	0	1	2	3
2. Feeling down, depressed, or hopeless	0	1	2	3
3. Trouble falling asleep or sleeping too much	0	1	2	3
4. Feeling tired or having little energy	0	1	2	3
5. Poor appetite or overeating	0	1	2	3
6. Feeling bad about yourself- or that you are a failure or have let yourself or family down	0	1	2	3
7. Trouble concentrating on things, such as reading the newspaper or watching television	0	1	2	3
8. Moving or speaking so slowly that other people could have noticed. Or the opposite-being so fidgety or restless that you have been moving around a lot more than usual	0	1	2	3

Total:

Perseverative Thinking Questionnaire

Instruction: In this questionnaire, you will be asked to describe how you *typically* think about negative experiences or problems. Please read the following statements and rate the extent to which they apply to you when you think about negative experiences or problems.

	Never	Rarely	Sometimes	Often	Almost always
1. The same thoughts keep going through my mind again and again.	0	1	2	3	4
2. Thoughts intrude into my mind.	0	1	2	3	4
3. I can't stop dwelling on them.	0	1	2	3	4
4. I think about many problems without solving any of them.	0	1	2	3	4
5. I can't do anything else while thinking about my problems.	0	1	2	3	4
6. My thoughts repeat themselves.	0	1	2	3	4
7. Thoughts come to my mind without me wanting them to.	0	1	2	3	4
8. I get stuck on certain issues and can't move on.	0	1	2	3	4
9. I keep asking myself questions without finding an answer.	0	1	2	3	4
10. My thoughts prevent me from focusing on other things.	0	1	2	3	4
11. I keep thinking about the same issue all the time.	0	1	2	3	4
12. Thoughts just pop into my mind.	0	1	2	3	4
13. I feel driven to continue dwelling on the same issue.	0	1	2	3	4
14. My thoughts are not much help to me.	0	1	2	3	4
15. My thoughts take up all my attention.	0	1	2	3	4

Homesickness Questionnaire

	Score				
1. I can't help thinking about my home	1	2	3	4	5
2. I can't concentrate on my work because I'm always thinking about home	1	2	3	4	5
3. When I'm thinking about nothing in particular my thoughts always come back to home	1	2	3	4	5
4. I hardly ever think about my home	1	2	3	4	5
5. There is so much going on here that I hardly ever think about home	1	2	3	4	5
6. I visit home as often as I can	1	2	3	4	5
7. I communicate with my family every week	1	2	3	4	5
8. Thinking about home makes me cry	1	2	3	4	5
9. I dream about my friends at home	1	2	3	4	5
10. I've settled in really well at the university	1	2	3	4	5
11. If I ever went home for the weekend I wouldn't want to come back	1	2	3	4	5
12. I try to make my room like that at home	1	2	3	4	5
13. I rarely communicate with home	1	2	3	4	5
14. I hate this place	1	2	3	4	5
15. I hardly ever visit home during the semester	1	2	3	4	5
16. I am drawn towards people who come from my hometown	1	2	3	4	5

17. I get really upset when I think about home	1	2	3	4	5
18. I am really happy to be here at the university	1	2	3	4	5
19. It upsets me if I am unable to phone home each week	1	2	3	4	5
20. I can't concentrate on my work	1	2	3	4	5
21. I feel empty inside	1	2	3	4	5
22. I avoid going home because it would be too upsetting	1	2	3	4	5
23. I wish I had never come to the university	1	2	3	4	5
24. I dream about my home	1	2	3	4	5
25. I try to shut off thinking about my home	1	2	3	4	5
26. The people here annoy me	1	2	3	4	5
27. I can't seem to settle here at the university	1	2	3	4	5
28. I often dream about my family back home	1	2	3	4	5
29. My parents pushed me into coming to the university	1	2	3	4	5
30. I feel as if I've left part of me at home	1	2	3	4	5
31. I blame myself for having come to this university	1	2	3	4	5
32. I feel restless here	1	2	3	4	5
33. If I go home for the weekend, I feel excited at the prospect of coming back to the university	1	2	3	4	5

Appendix C - Participant Information sheet**PARTICIPANT INFORMATION PAGE - PLEASE READ BEFORE PROCEEDING****Researcher: Mandeep Bachu**

Thank you for considering taking part in the following research study. Please read the following information carefully before deciding whether or not you wish to continue with participation. You can contact the researcher with any questions you may have. Contact details can be found below.

Invitation and brief summary: The aim of this study is to explore the relationships between trait self-compassion, goal motives, goal progress and wellbeing. Additionally, the current project will investigate how goal pursuit may predict homesickness and wellbeing in first year students moving into higher education.

Purpose of the research: The study is interested in exploring how trait self-compassion may help students adapt to starting university. Self-compassionate individuals may set certain goals that lead to progress, which in turn translates into benefits for wellbeing.

Why have I been approached: Due to the nature and focus of the study, first year undergraduate students who have joined the university are being asked to participate. Exeter University's Psychology Research Participation Scheme has facilitated promotion of the study and recruitment of participants. It is hoped that approximately 150 students will participate in the study.

What would taking part involve? This study is an online survey and will ask you some questions regarding a number of different areas. These include: some background information (e.g., age, sex) and some personality and mood questionnaires. You will also be asked to identify 4 goals that you will pursue over the next few weeks. You will be provided with clear instructions for doing this and you can contact the researcher with any difficulties. This survey takes approximately 30-40 minutes. Your progress will be saved automatically.

You will then be asked to carry out a follow up survey four weeks later. This will take approximately 15 minutes to complete. It will ask about progress on your goals, emotions and homesickness.

You will finally be asked to complete a follow up survey in approximately 2 months time from the start date. This will take approximately 15 minutes. Again, it will ask about progress on your goals, emotions and homesickness. For the follow up surveys, you will be contacted by email containing a link to fill in the survey. Total participation should take around 1 hour.

What are the possible benefits of taking part? While the study is unable to make promises regarding specific and direct benefits, your support and contribution may offer wider benefits to society in the form of new knowledge

about adjustment to university and some indirect benefits might be foreseeable for participants.

What are the possible disadvantages and risks of taking part? While the study carries low risk, the questionnaires on depression and anxiety may identify unpleasant feelings. To this end, support information will be provided to all participants through the 'Contact Details of Support Organisations' information sheet. Additionally, the researcher recognises the potential burdensome requirement of having to complete questionnaires on three separate occasions during the first semester, although the second and third phases are relatively short. Furthermore, in the event that certain questions trigger distress, you are encouraged to seek support from your personal tutor, university counselling or GP.

What will happen if I don't want to carry on with the study? Participation in the study is entirely optional. You can stop taking part in the study at any time without having to provide a reason and have the data that you have provided destroyed.

How will my information be kept confidential? The University of Exeter processes personal data for the purposes of carrying out research in the public interest. The University will endeavour to be transparent about its processing of your personal data and this information sheet should provide a clear explanation of this. If you do have any queries about the University's processing of your personal data that cannot be resolved by the research team, further information may be obtained from the University's Data Protection Officer by emailing dataprotection@exeter.ac.uk or at www.exeter.ac.uk/dataprotection.

All data will be kept confidential. Your email address will be retained to send emails for the follow up surveys and for you to be entered into the prize draw; they will be deleted following contact with the winners. The anonymised raw data will be retained securely for a period of 7 years. All personal data will be stored separately from the raw data collected and will only be linked by a code number to which only the researchers have access. Confidentiality would only be broken under circumstances where you or someone else is believed to be at immediate risk.

Will I receive any payment for taking part? To thank you for participating in this study, those taking part through the Psychology Research Participation Scheme will receive 2 course credits for completing the study. One course credit will be given for completing the first section, 0.5 credits will be given for each of the follow-ups. Non-psychology student participants will receive £10 for their participation. All participants will also be entered into a prize draw (ten x £20 up for grabs!). You will be entered once for completing each part of the study and will therefore be entered three times for completing the entire study.

What will happen to the results of this study? The results of the study will be written up as part of a clinical psychology doctoral thesis and will be published via Open Research Exeter (ORE). The results from this study aim to be published in a peer reviewed journal and/or shared at relevant conferences. No personal information about participants will be included. If you would like further information on the main results of the study, please contact the lead researcher.

Who is organising and funding this study?

Mandeep Bachu - Trainee Clinical Psychologist - mb765@exeter.ac.uk

Dr Nick Moberly - Senior Lecturer and project supervisor -

N.Moberly@exeter.ac.uk

Dr Pia Pechtel - Programme Tutor and project supervisor -

P.Pechtel@exeter.ac.uk

Who has reviewed this study?

This project has been reviewed by the Research Ethics Committee at the University of Exeter.

Further information and contact details

For further information regarding the study, please feel free to contact the lead researchers. If there are any aspects of the study with which you are unhappy about please contact the project supervisor or Gail Seymour, Research Ethics and Governance Manager g.m.seymour@exeter.ac.uk, 01392 726621.

Appendix D - Consent Form

Please complete the below questions to confirm that you give your consent to complete the following study.

I confirm that I have read and understood the participant information page.
Yes
No

I understand that my information and the data I provide will be kept confidential, but that relevant sections of the data collected during the study may be looked at by members of the research team and individuals from the University of Exeter, where it is relevant to my taking part in this research. I give permission for these individuals to have access to my responses.
Yes
No

I understand that my information and the data I provide will be kept confidential, but that relevant sections of the data collected during the study may be looked at by members of the research team and individuals from the University of Exeter, where it is relevant to my taking part in this research. I give permission for these individuals to have access to my responses.

Yes
No

I understand that data will be stored as anonymised questionnaire responses on password-protected computer servers and that these will be stored separately from contact details (which will be deleted at the end of the study).
Yes
No

I understand that my anonymised questionnaire responses will be stored in an archive for 7 years before being deleted.
Yes
No

I understand that my participation is voluntary and that I am free to withdraw at any time without giving any reason and without my legal rights being affected.
Yes
No

I consent to taking part in this study
--

Yes
No

Appendix E - Debrief Form

Thank you very much for taking part in this research. Your time and effort are most appreciated!

The purpose of this study was to examine the role of self-compassion, goal motives, goal progress and wellbeing.

Self-compassion involves being kind and understanding towards ourselves and not judging ourselves when we experience misfortune or personal failings. A self-compassionate attitude includes a balanced view of oneself as well as one's (negative) emotional experiences.

It is expected that people who are more self-compassionate will report higher levels of wellbeing (measured by life satisfaction and positive and negative affect). It is predicted that people who pursue goals because of the 'fun and enjoyment' or if they value the goal as 'important' (autonomous motives), compared to those that pursue goals due to 'shame or anxiety' or 'to please others' (controlled motives) will have higher self-compassion. It is predicted that less progress will be reported for goals that are pursued for controlled reasons compared to autonomous reasons. It is further predicted that attitudes towards goals will be associated with depressive symptoms, homesickness and rumination.

It is important to investigate these relationships, as having a better theoretical understanding of these mechanisms could help explain why people lacking self-compassion might have difficulties in goal pursuit. It could also further our understanding of the construct of self-compassion and improve applied efforts to implement self-compassionate interventions.

If you have any further questions about this study then please contact Mandeep Bachu or Dr Nick Moberly on the contact details below.

Mandeep Bachu, Trainee Clinical Psychologist, Email mb765@exeter.ac.uk
Dr. Nick Moberly, Senior Lecturer, Email: N.J.Moberly@exeter.ac.uk, Tel:
01392 724656

If participation in this study has caused concern about your health or wellbeing then please contact your GP in the usual way. Contact details of support organisations have also been provided on the next page.

Appendix F - Dissemination Statement

Findings of the study will be disseminated in different stages. First, the thesis will be submitted as part of the requirements of the doctorate in clinical psychology programme at the University of Exeter. Second a presentation is scheduled for June 2019 where key findings of the systematic literature review and empirical paper will be presented to colleagues and other professionals. Thirdly, following necessary amendments, the manuscript of the literature review will be submitted for publication to Personality and Social Psychology Review and the manuscript of the empirical paper will be submitted to Personality and Social Psychology Bulletin for publication.

Appendix G - Preparation and Submission Requirements for Personality and Social Psychology Bulletin

Scope of the Journal

The Personality and Social Psychology Bulletin (PSPB) is an official publication of the Society of Personality and Social Psychology (SPSP), Inc. PSPB is an international outlet for the rapid dissemination of original contributions based on empirical data in all areas of personality and social psychology.

Manuscript Preparation

Compliance with these policies is verified upon submission of manuscripts. Failure to comply with the policies will prevent submission and review of manuscripts.

Style: All manuscripts should follow the style guidelines set forth in the *Publication Manual of the American Psychological Association, Sixth Edition, 2009*.

Length: Manuscripts must not exceed 10,000 words in length, including the abstract, references, and notes. The word count must appear on the title page. Rare exceptions to this policy can be requested as part of the submission process (justified by the nature, number, or complexity of studies or methods reported, for example). Even in such cases, authors should strive to come as close as possible to 10,000 words.

Abstract and keywords: The page following the title page must include an abstract of no more than 150 words, and below the abstract, 4-5 keywords.

Methods reporting: In addition to the manuscript text, authors are required to submit in a separate file stimulus materials, including the verbatim wording of all independent and dependent variable instructions, manipulations, and measures. [If the research was conducted in a language other than English, the stimulus file can use the original language, as long as the manuscript itself provides sufficient detail for reviewers and readers to evaluate the presented research.] If the article is published, this appendix will be made available on-line.

Result reporting: Data-based submissions must:

- report effect sizes and 95% confidence intervals for primary findings in each study
- address issues of sample size and consequent issues of power in each study or, in the case of multiple-study articles, in the context of evaluating the overall case for the reliability of the primary findings.

Double-blind review: *PSPB* now conforms to a double-blind peer review process.

Ethical Practices verification: Corresponding authors of submitted papers must verify that:

- the same or substantially similar manuscript has not been simultaneously submitted for consideration by another journal
- the same or substantially similar manuscript has not already been published in whole or part
- data collection complied with current APA Ethical Principles of Psychologists and Code of Conduct
- the raw data and related coding information underlying all findings of empirically-based publications will be shared consistent with SPSP's (2013) Data Sharing Policy

Additional instructions: In the process of creating a manuscript for the double-blind peer review process, self-citations should be removed when they can be used to identify any of the authors. Authors may substitute "Citation Blinded" in place of these identifying citations.