LITERATURE REVIEW: The Role of Inter-goal Conflict in Depressive Symptomatology: A Systematic Review

EMPIRICAL PAPER: The Relationship Between Intrapersonal Goal-Value Conflict and Depressive Symptomatology

Submitted by Michael Iszard, to the University of Exeter as a thesis for the degree of Doctor of Clinical Psychology, July 7th, 2021.

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LITERATURE REVIEW: The Role of Inter-Goal Conflict in Depressive

Symptomatology: A Systematic Review

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THE ROLE OF INTER-GOAL CONFLICT IN DEPRESSIVE SYMPTOMATOLOGY: A SYSTEMATIC REVIEW

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THE ROLE OF INTER-GOAL CONFLICT IN DEPRESSIVE SYMPTOMATOLOGY: A SYSTEMATIC REVIEW

Abstract

Objective: Intra-psychic conflict underpins theories of motivation; however, its mechanisms and correlates remain poorly understood. Goals represent a broad category of motivational constructs which are conceptualised hierarchically, according to their specificity (level of abstraction), from low-level, action-oriented, goal-tasks to high-level, organising values. The goals literature has investigated the links between inter-goal conflict and a broad range of outcomes, including depression, well-being and psychopathology. This review set out to synthesise existing evidence for a relationships between inter-goal conflict and depressive symptoms.

Method: Studies exploring the relationship between inter-goal conflict and depression in adults were selected from multi-disciplinary and subject-specific databases, published prior to the 20th of March 2021. A systematic search yielded 122 records with 79 non-duplicated results. Screening of 28 full-text publications led to 10 eligible studies, from which data were synthesised in narrative form.

Results: The evidence reviewed indicates that inter-goal conflict is positively correlated with depressive symptoms in adults, although findings were mixed and longitudinal studies did not support a causal association. Effect sizes of eligible studies ranged from small to medium, with some controlling for covariates. Studies were predominantly cross-sectional; therefore, scope for casual inference was limited.

Conclusions: At present, evidence supporting the hypothesis that inter-goal conflict is associated with depressive symptoms in adults is modest. More longitudinal investigations are needed to determine the presence and direction of causality. Construct specificity, implicit motivation and rumination also require further investigation to understand their relationship to inter-goal conflict and depression.

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Keywords: goal, value, goal-conflict, motivation, depression, intrapersonal conflict, systematic review.

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1. Introduction

1.1. Background

Depression accounts for the largest burden associated with all mental and neurological disorders (World Health Organisation [WHO], 2015). Depression is thought to be on the increase (Office for National Statistics [ONS], 2015), with unipolar major depression predicted to be leading cause of the worldwide burden of disease by 2030 (WHO, 2015). The worldwide prevalence of depression is estimated to be 4.4% and prevalence in the UK is 4.5% (WHO, 2015).

Intrapsychic conflict is central to conceptions of motivation (Robbins, 1958), personality integration (Horowitz, 1989), psychological distress (Lauterbach, 1996) and goal-striving (Riediger, 2007); however, the relationship between inter-goal conflict and depression is poorly understood. Intrapersonal goal processes are fundamental to a wide range of psychotherapeutic models, including psychodynamic, cognitive-behavioural and existential (Frankl, 1986; Moskowitz & Grant, 2009; Rogers & Kelly, 1989)

Cognitive dysfunction in depression is associated with poorer clinical outcomes and impaired psychosocial functioning (Kaser et al., 2017). Treatment protocols for depression (Beck, 2002) and models of change process in therapy (Brewin, 1989) are premised on cognitive models; however, evidence suggests that these interventions demonstrate diminished efficacy over the long-term (Leahy, 2015). This could be explained by goal-directed modes of intervention (Matre et al., 2013), such as cognitive behavioural therapy (CBT), putting less emphasis on the motivational aspects of self and intra-psychic conflict (Smith, 2003). Thus, goal constructs remain widely yet poorly targeted mechanisms of change.

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1.2. Goal Constructs

A goal is a mental image, or end point representation, associated with affective and cognitive features, toward which action may be directed (Pervin, 1989). Goals are typically consciously expressed, personally important, objectives that individuals pursue in their daily lives, where goal-striving represents an active pursuit of a desired future state (Austin & Vancouver, 1996); thus, personal goals form an organisational network, which provides a sense of purpose, structure and identity to the individual (Elliot et al., 1997).

1.3. The Motivational Hierarchy of Goal Constructs

Goal constructs are organised in a hierarchical framework of motivations, from higher abstract (e.g. values) to lower concrete, action-oriented (e.g. goals) levels (Austin & Vancouver, 1996; Kelly et al., 2015) (Figure 1, Figure 2).

Figure 1

A Motivational Hierarchy

| Level of Abstraction		
Abstract ⬇	**High-level**	• Personal values (e.g. benevolence, achievement)
Specific	**Mid to low-level**	• Life tasks (Cantor & Kihlstrom, 1987); personal strivings (Emmons, 1986); current concerns (Klinger, 1977); and personal projects (Little, 1983). (e.g. try to be a supportive partner)

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'Level' refers to the degree of generality vs specificity of one's goal-strivings; central to this conception is Powers' (1973) control theory and its hierarchy of purposes. Here, higher order motivational constructs form the 'why' reference value for the 'how' at the level of lower order goals; lower order goals form the means by which higher order motivations may be realized. Mid to low-level goals represent what an individual is trying to do, or not do, in their everyday behaviour; for example, 'exercise five times a week'. This serves the high-level motivation of looking after one's physical health. Goal hierarchies are thought to serve as organisers of affect, cognition and behaviour (Austin & Vancouver, 1996; Little, 1993; Wiese, 2007), while playing a critical role in the activation and organisation of concrete action (Sheldon, 2004). Within this proposed system, it has been hypothesised that affect serves as a feedback mechanism indicating meaning, progress, and attainment of desired goals (Carver et al., 1999; Emmons & Diener, 1986); however, the mechanisms through which this feedback occurs is unclear. One postulated mechanism thought to be related to depressogenic affective feedback is inter-goal conflict (Gray et al., 2017; Haig et al., 2006; Kelly et al., 2011).

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Figure 2

A Goal Hierarchy Model of Personality (Cropanzano et al., 1993)
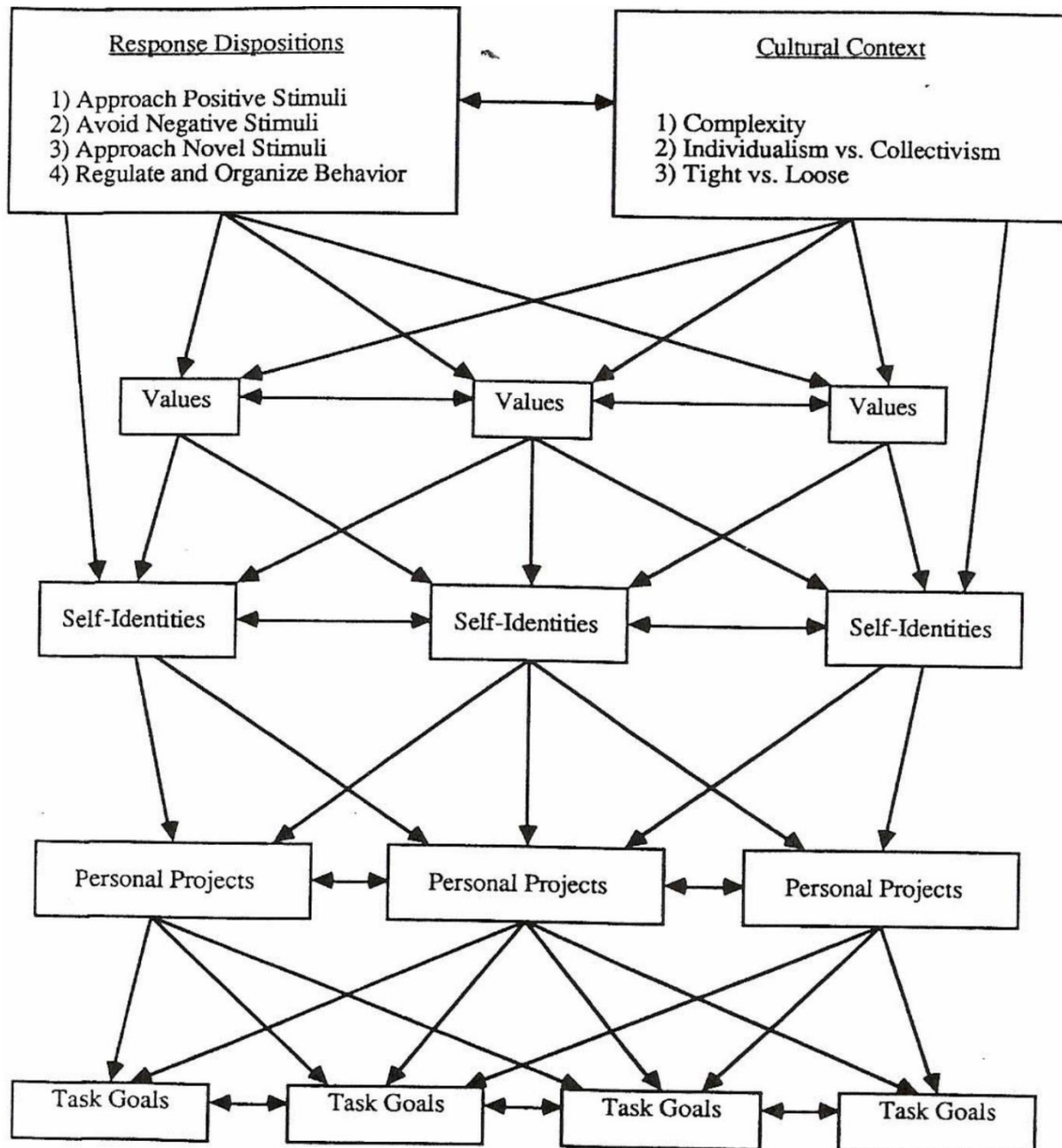
While personality theory tends to emphasize the stable aspects of human functioning,

e.g., values have been conceptualised as stable traits using Kelly's personal construct theory

(Horley, 1991; Kelly, 1955), motivation theory, in contrast, tends to use goal constructs

which focus on more dynamic processes underpinning behaviour (Austin & Vancouver,

1996). Cropanzano (1993) and others have attempted to bridge this gap by providing a

unifying framework; however, in this case, evidence validating this organisation was not

gathered. Furthermore, hierarchical integrations have led to significant conceptual confusion.

The hierarchical structure of nested, latent, concepts, used to represent various levels of

abstraction have not been adequately supported by evidence, either in this model or other

examples (Kelly et al., 2015). It is unclear, at present, whether evidence supports the

hierarchical organisation of constructs proposed in this model, or the extent to which the

constructs (e.g., goals, identities, values) are separate entities rather than interchangeable.

Furthermore, there is evidence to suggest that values change and develop over the lifespan

(Hanel & Vione, 2016), according to cultural context (Schwartz & Sagiv, 1995) and resource

limitations (Segerstrom & Nes, 2006). Such confounders may point to expressed values

reflecting more dynamic 'coping styles', distinct from more stable personality structures. As

such, the complexity of operationalising, evidencing and validating constructs at more

abstract (and latent) levels, as well as quantifying their influence on constructs postulated at

more concrete levels, presents a significant challenge.

1.4. Intrapersonal Goal Conflict and Affect

Conflict occurs when two goals compete for the same resource, be it social,

psychological or material (e.g. time, money), or because they are fundamentally

incompatible; for example, trying to become more independent while simultaneously seeking

support could be inherently conflicting (Segerstrom & Nes, 2006). It is theorised that

intrapersonal (self)conflicts involve the interaction of cognition, motivation and affect

(Calvin & Holtzman, 1953). Indeed, evidence suggests that inter-goal conflict plays an

important role in negative psychological states (Festinger, 1957; MacDonald, 1965),

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depression and rumination (King et al., 1992) and psychopathological status (Michalak et al., 2004).

Riediger (2007) posits 'interference', 'facilitation', and 'independence' as three possible between-goal relationships. In a facilitative relationship, the pursuit of one goal increases the likelihood of attaining another goal, creating synergy (Salmela-Aro, 2009). Conversely, an interfering relationship is dysergetic because pursuit of one goal interferes with the attainment of other goals (Klappheck et al., 2012), also termed goal conflict (Austin & Vancouver, 1996). Synergy and dysergy are postulated as mechanisms through which affective states arise (Cooper, 2018). A corollary is that psychological distress in the form of rumination and affect signals that one's goals are incompatible and in need of modification to create greater synergy (Boudreaux & Ozer, 2013; King et al., 1992; Powers, 1973). Sheldon et al. (Sheldon et al., 2004; Sheldon & Houser-Marko, 2001; Sheldon & Kasser, 2001) have argued that this drive towards self-coherence is fundamental to personality integration and adaptive functioning.

Evidence suggests that inter-goal conflict is indeed associated with distress and depression (Kelly et al., 2015). Depression is found to be positively associated with motivational conflicts throughout the hierarchy, including mid to low-level goal conflict (Emmons & King, 1988) and mid to high-level conflict between more transcendent self-representations (e.g. ideal/actual self) and values (Lauterbach, 1996; Schwartz, 1974). High conflict is correlated with higher scores on measures of depression and negative affect, and lower scores on adaptive functioning (Gray et al., 2017; Kelly et al., 2015).

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1.5. Rationale for The Review

Theory and evidence are converging to show that motivational conflict is linked to clinical conditions, such as depression. Inter-goal conflict (IGC) may represent a functional link between motivation, cognition and affect. This review represents the first attempt to collate research findings which investigate the link between IGC, providing a theoretical and empirical foundation for working with goal processes therapeutically to address depressive symptoms. This review set out to answer the question: 'is inter-goal conflict related to depressive symptoms?'. The focus of this review will be studies which use measures that capture IGC at the level of consciously articulated representations of desired future states (Austin & Vancouver, 1996; King et al., 1992). IGC is identified where the pursuit of one goal is perceived to undermine or preclude the successful pursuit of another (Emmons & King, 1988).

2. Method

A systematic review of the literature is vital step in generating evidence-based understandings of psychological phenomena (National Institute for Health and Care Excellence, 2012). Explicit, pre-defined criteria were used to identify and evaluate the outcomes of multiple studies to increase the reliability and accuracy of the conclusions (CRC Guidance, 2009). Preferred Reporting Items for Systematic Review and Meta-analysis Protocol (PRISMA-P) were used to identify, screen and determine eligibility of studies (Moher, Liberati, Tetzlaff, Altman, & PRISMA Group, 2009; Moher et al., 2015).

2.1. Review Method and Eligibility Criteria

Study characteristics are summarised according to PECOS (Population, Exposure, Comparator, Outcome, Study Design) criteria in Table 1. Studies eligible for inclusion have

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(a) examined the association between goal conflict and depressive symptoms and (b) were published in English (to avoid translation requirements for feasibility reasons). Depression was operationalized through validated measures of symptom severity or diagnostic status. Limitations were placed on type of publication, sample and study design, according to inclusion and exclusion criteria using a PECOS framework (Table 1). Goals are defined as internal representations of desired future states, where states are broadly construed as concrete outcomes, events, or processes (Austin & Vancouver, 1996). This definition excludes related motivational constructs, such as values or personality characteristics. Goals needed to be explicitly articulated or endorsed by participants to meet the inclusion criteria. IGC is generally measured using self-report matrix methods (e.g., Strivings Instrumentality Matrix; Emmons & King, 1988). A matrix quantifies conflict between participant-generated goals and the effects of each goal on each other goal are recorded. Between-goal relationships are typically rated on a unipolar (conflict) or bipolar (conflict/facilitation) scale. In a bipolar scale, scores in the positive range indicate level of goal facilitation whilst negative scores indicate conflict. Studies using either type of scale were included.

Other measures of conflict will be eligible for inclusion if they explicitly operationalize goal-goal conflict; for example, the Computerized Intrapersonal Conflict Assessment (CICA; Lauterbach, 1996) can operationalize mid to low-level goal constructs. CICA is a non-matrix tool which measures perceived inconsistency among psychological concepts. For the purpose of this review, eligible CICA studies included goal statements (Lauterbach & Newman, 1999). The CICA gives participants sets of psychological goal concepts (e.g., 'success at work', 'leisure time'). Participants then rate the degree to which the concepts are important. Perceived conflict is calculated by asking participants to rate the extent to which pairs of concepts positively or negatively impact on one another.

Methods which do not explicitly operationalize conflict will not be included. Furthermore, methods which use measures capturing high-level trait/self-states, which are not explicitly goals, will also be excluded; for example, self-state comparison of discrepancies between perceived actual and ideal representations of self (Self-Discrepancy Questionnaire SDQ: Carver (Carver et al., 1999), the repertory grid interview technique (RGT) (Caine & Smail, 1967), the practical method based on Kelly's personal construct theory (Kelly, 1955) and Schwartz' Value Survey (Schwartz, 1974).

2.2. Publication Inclusion and Exclusion Criteria (PICOS)

PECOS criteria for inclusion and exclusion of studies are outlined in Table 1.

Table 1

PECOS model of inclusion and exclusion criteria

Criteria	Inclusion	Exclusion
Population	• Adults (18 and over) • Clinical and non-clinical samples	-
Exposure	• Goal: desired future states (self-generated or endorsed from a selection generated by the researcher) broadly construed as concrete outcomes, events, or processes (Austin & Vancouver, 1996).	• Measures: goal-goal conflict not explicitly measured OR measures of motivational factors which are not explicitly goal constructs; e.g. Schwartz's Value

	• Conflict: explicit bipolar or unipolar ratings (by self or other) of goal-goal conflict and/or facilitation; for example, Personal Strivings Matrix (Emmons & King, 1988) OR Non-matrix measures, such as the Computerized Intrapersonal Conflict Assessment (CICA; Lauterbach, 1996)	Survey; Self Discrepancies Questionnaire (SDQ) (Higgins , Klein, & Strauman, 1985); Repertory Grid Technique (RGT) (Caine & Smail, 1967) which rate transcendent abstract, or trait self-representations; Implicit, reaction time/attention measures of goal conflict.
Comparator	Studies comparing depressive symptoms on a continuous scale (no control group) as well as studies comparing a depressed with any non-depressed group.	
Outcome Measures	• Validated depression symptom measures (self-report, observer-rated)	• Depression-conflict association not reported.

	• Interview methods of ascertaining depression diagnosis (e.g. SCID).	
Study Design	• Correlational, longitudinal and experimental studies that assess or manipulate depression and examine goal conflict as outcome, or vice versa.	• Qualitative studies.
		• Articles published as abstracts or conference proceedings only.
	• Published full-text research articles.	• Reviews, commentaries, and editorial articles.
	• Articles published in English or translated into English by journal	

2.3. Information sources

The following electronic databases were searched: Embase, Web of Science and PsycINFO. A manual search of the reference sections of all cited studies followed. Citations were stored in the electronic bibliographic database EndNote (Thomson Reuters, San Francisco, CA) and duplicate publications were deleted. Databases were searched from the beginning point of each database through to 22nd March 2021.

2.4. Search Strategy

In line with the Cochrane Library guidance (Higgins & Green, 2011), an initial scoping review was used to generate search terms that could be used in combination (Table

2). Keywords of seminal publications (Emmons, 1986) and critical reviews (Gray et al., 2017; Kelly et al., 2015) were also checked for additional search terms. Table 2 shows the search terms that were used for each construct relevant to the research question. Truncations were used to identify all possible endings of the stem of a word (e.g. "depress*" would retrieve "depression", "depressed", "depressive", "depressogenic", and "depressant") and wildcards were used to identify variations in the spelling of a word, if necessary. The search terms were further combined using Boolean operator "OR" to combine terms within each section and Boolean operator "AND" to combined search terms across each section. The record identification, screening, eligibility and inclusion procedure is presented in Figure 2.

Table 2

Literature review search terms

Construct	Search terms
Goals	"goal*"
	"personal project*"
	"life task*"
	"current concern*"
Depression	"depress*"
	"dysphor*"
Conflict	"conflict*"
	"inconsist*"
	"interfere*"
	"discrep*"
	"coheren*"

2.5. Data Extraction

Record titles and abstracts generated by the search were screened using PECOS (Higgins & Green, 2011). In line with Centre for Reviews and Dissemination (CRD Guidance, 2009), eligible records were then reviewed in full to confirm suitability. As recommended by NICE (2012) guidelines for compiling systematic reviews, the reference lists of all included publications were screened for further relevant records that may have been missed initially. After deletion of duplicates, title and abstracts were screened for inclusion. Full-text records were assessed for eligibility based on specified inclusion and exclusion criteria (Table 1); three records were checked by an independent rater (100% inter-rater reliability). For records which met the eligibility criteria, data quality were evaluated using the National Heart, Blood and Lung Institute (NIH) quality assessment tool (QAT) for observational, cohort and cross-sectional studies (National Heart Lung and Blood Institute, 2019). Reference lists of all full-text papers were reviewed for relevant records; 3 additional publications were identified. Finally, PECOS criteria and study results on the variables (IGC, Depression) and their interrelationship were extracted, as reported in the Results section.

2.6. Quality Evaluation

Compiling studies of insufficient quality can lead to a biased estimation of the concluded effects (CRC Guidance, 2009). Studies were evaluated using the NIH QAT, a standardized and validated measure (National Heart Lung and Blood Institute, 2019). The QAT allows evaluation of studies in relation to selection, study design, confounders, blinding, data collection method and analysis. The author rated all eligible papers using QAT and an independent researcher rated two studies using the NIH quality evaluation criteria (appendix A). Some disagreement emerged on component ratings; however, global QAT quality ratings determining inclusion achieved (100% inter-rater reliability).

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Figure 3

PRISMA Flow Diagram
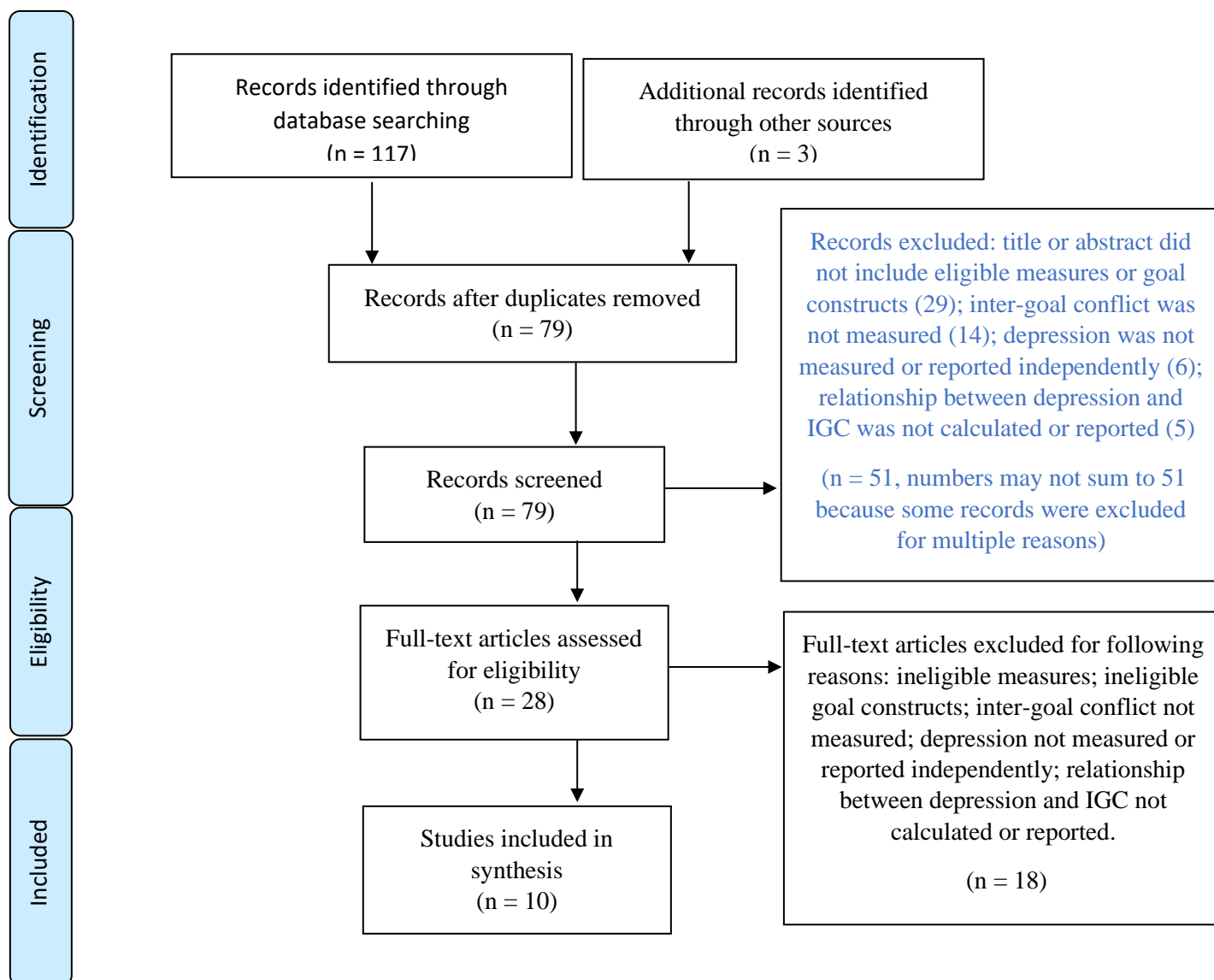
*Results of literature search strategy and eligibility screening. Flowchart is based on PRISMA
protocol (adapted from Moher et al., 2009)*

3. Results

The literature search returned a total of 122 independent records. A total of 10 ($N = 1437$) independent studies were found that examined the relationship between IGC and depression. Table 3 shows the characteristics of each study included in the review, including authors, design, measures, effect sizes and significance for each study included in the analysis. Table 4 shows the strengths, weaknesses and quality rating score for each study.

Table 3

Study Characteristics

Authors	Sample/Design	*n*	Conflict measure(s) and Goal Construct	Depression Measure(s)	Result (effect size) and Significance
1. Emmons & King (1988) (US)	Sample; students; Design: cross-sectional Age: No data Gender balance: M= 12, F=28	40	Construct: personal strivings Measure: Striving Instrumentality Matrix (SIM); bipolar scale.	Hopkins Symptom Checklist (HSC) – depression subscale	Study 1 (cross sectional): positive association between personal strivings conflict and depression ($r = .34$, $p <.01$).
Emmons & King (1988) (US)	Sample; students; Design: prospective (1 year follow up) Age: No data Gender balance: M=13, F=38 HSC administered at 1 week and one year. A baseline measure of depressive symptoms was not included. SIM measured at baseline only.	51	Construct: personal strivings Measure: Striving Instrumentality Matrix (SIM); bipolar scale.	Hopkins Symptom Checklist (HSC) – depression subscale	Study 3 (longitudinal): No association ($r = .19$).
2. Perring et al. (1988) (UK)	Sample: college and university students, adult non-students; Design: cross-sectional Age: No data Gender balance: Incomplete data	224	Construct: self-generated goals Measure: Interview schedule/questionnaire measuring perceived conflict in daily activities with self-generated goals (conflict between internal representations of concrete	General Health Questionnaire – depression subscale (GHQ)	Goals conflict was positively associated with depression ($r = .18$, $p <.05$)

			outcomes, events, or processes); matrix, unipolar five-point conflict scale		
3.	Karoly & Ruehlman (1996) (US)	227	Construct: personal goals Measure: conflict between work and non-work goals with index of perceived work–nonwork conflict; matrix, unipolar five-point scale	Center for Epidemiological Studies—Depression scale (CES-D)	Goal conflict positively associated with depression ($r = .21$; $p < .01$)
	Sample: adults recruited from a larger national sample taking part in a separate survey. Design: cross-sectional Age: M=40; (range = 20 to 68 years) Gender balance: M=127, F=100 84% White					
4.	King et al. (1998) (US)	80	Construct: personal strivings Measure: SIM 10×10 conflict matrix; bipolar scale.	Beck Depression Inventory (BDI)	Personal strivings conflict was not associated with depression ($r = .10$)
	Sample: Adult students Design: cross-sectional Age: M=21.09, SD=2.28 Gender balance: M=18, F=62 Anglo-American descent (85%); Hispanic (10%); African-American (5%)					
5.	Renner & Leibetseder (2000) (Austria)	139	Construct: personally relevant concepts (relating to representations of concrete outcomes, events, or processes) selected by participants from a list. Measure: Computerized Intrapersonal Conflict Assessment (CICA)	Symptom Checklist (SCL-90-R)	Positive association between overall conflict and depression ($r = .28$, $p < .01$)
	Sample: psychotherapy patients and controls. Design: cross-sectional Age: M=39.4; SD=11					

			Gender balance: M=52, F=87		
6.	Stangier et al. (2007) (Germany)	Sample: patients with a diagnosis of depression compared to controls Design: cross-sectional Age: Depression group M=41.3; SD= 11.3 Control group M=42.3; SD=14.3 Gender balance: M=38%, F=62%	77	Construct: personally relevant concepts (relating to representations of concrete outcomes, events, processes or projects) selected by participants from a list. Measure: CICA	BDI	Moderate-strong positive association between depression and global conflict score for total sample ($r = .43$, $p < .01$)
7.	Karoly et al. (2008) (US)	Sample: subgroup, selected for moderate to severe pain intensity, of a national sample ($N = 2,407$) of respondents with a chronic pain Design: cross-sectional Age: M=no data; SD=no data Gender balance: M=44%, F=56% Caucasian (80%), African-Americans (15%), Hispanics (2%), mixed/other (3%)	100	Construct: personal goals Measure: three most important goals ranked and rated for conflict with each other goal; matrix, unipolar scale.	CES-D	Conflict was associated with pain induced fear (r = .24), which in turn predicted depression and pain. No direct correlation between conflict and depression reported.

8. Kelly et al. (2011) (UK)	Sample: adult students Design: cross-sectional Age: M=19.84; SD=2.93 Gender balance: M=120, F=98	120	Construct: personal strivings Measure: SIM; bipolar	Depression, Anxiety and Stress Scale (DASS-21)	Strivings conflict was positively associated with depression symptoms. Ambivalence stress and anxiety entered as covariate (β = .20, p <.05)
9. Boudreaux & Ozer (2012) (US)	Sample: adult students Design: Longitudinal Age: M=19; SD=1.5 48 % Asian/ Pacific Islander, 29.5 % Latino/Latina, 7 % White, 4 % African American, 7 % Middle Eastern/Indian, 4.5 % mixed/other Gender balance: M=48, F=131, Other=1	180	Construct: personal goals Measure: matrix, unipolar conflict scale.	Brief Symptom Inventory (BSI)	Goal conflict at baseline was a significant predictor of future levels of depressive symptoms when initial depression, anxiety, and somatization were included in the model (β =.15, p =.05)
10. Moberly & Dickson (2018) (UK)	Sample: adult students Design: longitudinal Age: M=20; SD=2.5 Gender balance: M=41, F=169	210	Construct: personal goals Measure: 10×10 matrix to rate inter-goal conflict; bipolar	BDI–II	Inter-goal conflict was significantly positively correlated with depression at time 1 (β = 0.20, p = 0.007) with ambivalence and facilitation entered as covariates; however, inter-goal conflict did not predict changes in depressive symptoms from time 1 to time 2 (inter-goal conflict, β = −0.05, p = 0.38)

Table 4

Study Strengths, weaknesses and quality assessment

Authors	Strengths	Weaknesses	Quality Rating
1. Emmons and King: Study 1 (1988)	Variables clearly operationalised; matrix method for IGC	No power calculation	Fair
1. Emmons and King: Study 2 (1988)	Longitudinal comparison	Depression not measured at baseline	Fair
2. Perring et al. (1988)	Valid outcome measures and matrix method of IGC assessment.	Multiple sub-samples; no power calculation; correlational	Fair
3. Karoly and Ruehlman (1996)	Large sample	No power calculation; correlational	Fair
4. King et al. (1998)	Variables clearly operationalised; matrix method for IGC	No power calculation; correlational	Fair
5. Renner and Leibetseder (2000)	Clinical sample	No power calculation	Fair
6. Stangier et al. (2007)	Clinical and control comparison groups	No power calculation; could not determine rationale for construct selection; small sample	Fair
7. Karoly et al. (2008)	Variables clearly operationalised; matrix method for IGC	No power calculation; No direct correlation between depression and conflict reported.	Fair
8. Kelly et al. (2011)	Covariates controlled for.	No power calculation; correlational	Fair

9. Boudreaux and Ozer (2012)	Covariates controlled for; longitudinal, large sample	No power calculation;	Good
10. Moberly and Dickson (2018)	Power calculation; longitudinal; covariates controlled for; large sample; facilitation unpicked from conflict.	Student sample	Good

3.1. Summary of Study Characteristics

3.1.1   Sample

Of the ten studies included in the final analysis, six derived their samples from student populations (1, 2, 4, 8, 9, 10) two from clinical populations (5, 6) and two recruited from larger national surveys of adults (3, 7). Five studies were conducted in the United States (1, 3, 4, 7, 9) three in the United Kingdom (2, 8, 10), one in Germany (4) and one in Austria (5). Most studies reported complete data for characteristics of their samples, while three reported data on ethnicity (4, 7, 9).

3.1.2   Study Design

Eight studies used cross-sectional designs (1, 2, 3, 4, 5, 6, 7, 8) and three (1, 9, 10) longitudinal studies looked at changes in the relationship between IGC and depression at two or more time-points.

3.1.3   Goal Measures

In total, eight studies used matrix methods (1, 2, 3, 4, 7, 8, 9, 10) to assess goal conflict; of these, four used bipolar scales (with facilitation at the opposite pole) and four used unipolar scales. Three studies used the personal strivings construct (1, 4, 8) (Emmons & King, 1988) to operationalise goals. A matrix assessed inter-goal conflict/harmony between pairs of goals, on a self-rated scale, and scores were aggregated to create global conflict score for each participant. A further five (2, 3, 7, 9, 10) studies used matrix methods to measure short-to-medium term, personally important goals, that individuals pursued in their daily lives with slightly differing instructions; for example, "current, medium range goals toward which

you will be working for a minimum of several weeks up to a maximum of a year" (Karoly et al., 2008).

Finally, two studies used the CICA (5, 6) method for participants to select concepts from sets of activities (as expressions of personally relevant goals and desired future states). In both of these studies, participants rated the degree to which concepts were personally important. To calculate conflict, participants then rated the extent to which pairs of concepts positively or negatively impacted on one another.

3.1.4   Depression Measures

All ten studies used validated, self-report, measures of depressive symptomatology. Five screening tools, designed for a broad range of psychological problems and symptoms of psychopathology, were used, all with depression subscales (HSC; GHQ-28; SCL-90-R; BSI; DASS-21). Three studies used a form of the Beck Depression Inventory (BDI) (4, 6 10), a tool specifically design to screen for depression; although not typically used for a diagnostic purpose, clinical cut-offs are sometimes used to determine 'caseness'. The CES-D was used by two studies (3, 7), another tool specifically designed to screen for depression. Clinical cut-offs were used by Perring et al. to determine caseness (1988), where a probability of caseness was set at between 4 and 5 on the GHQ-28. Stangier et al. (2007) used a clinically derived sample, with a depression diagnosis, in combination with the BDI to measure self-report depressive symptomatology for both control and case groups.

3.1.5   Covariates

Three studies included covariates in their analyses (8, 9, 10) (e.g. ambivalence, anxiety, goal-facilitation) These are summarised in Table 3.

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4. Summary of Study Findings

4.1. Cross sectional Studies

4.1.1. *Matrix methods*

Inter-goal conflict, or disharmony, was associated with significantly more depressive symptomatology in two of the three studies using the SIM. Emmons and King (1988) and Kelly et al. (with ambivalence stress and anxiety entered as covariates) (2011) both found a positive association between personal strivings conflict and depression, reporting medium effect sizes. Both studies were rated 'fair' using the QAT due to lack of distinction between conflict and facilitation and absent power calculations in both studies, Kelly (2001) being correlational, and covariates not included in Emmons and King (1988). IGC predicted more rumination, more symptoms of depression, more somatic symptoms, less goal directed activity, and more physician visits in the subsequent year (Emmons & King, 1988). King et al. (1998), however, did not find a significant association between IGC and depression using SIM. This study was rated as 'fair' using the QAT and, again, lacked a power calculation and had a relatively small sample compared to other studies.

The remaining five studies using matrix methods evidenced significant small-to-medium effect sizes for the positive relationship between IGC and depression. In a large sample ($N = 100$), Karoly et al. (2008) found that conflict was associated with pain-induced fear ($r = .24$), which in turn predicted depression and pain; however, there was no power calculation reported. Perring, Oatley, and Smith (1988) found a significant positive association between IGC and depression, but only in younger and mature students (particularly female) sub-samples, and no power calculation was reported. All matrix methods found a significant positive effect sizes regardless of scale used (unipolar/bipolar); however, the cross-sectional nature of these studies, along with lack of conceptual clarity,

unclear construct operationalisation, small samples and their predominantly correlational

nature limited causal inferences.

4.1.2. CICA

One study using the CICA found that IGC had a small but significant association with

symptom measures of depression in two subgroups of psychotherapy clients and participants

of a psychological training course in the workplace (Renner & Leibetseder, 2000). A strength

of this study was the clinical sample; however, it did not include a power calculation.

Stangier et al. (2007) found that higher levels of depression in a clinical sub-group were

significantly associated with higher conflict scores. Depressed patients scored significantly

higher on global conflict ($f = 1.17$, $p < 0.01$) compared with controls. A strength of this study

was the use of a control group; however, construct operationalisation and power calculations

were not clearly reported. Matrix measures of conflict have not yet been used in clinically

depressed samples.

4.2. Longitudinal Studies

Three studies had longitudinal components and used matrix methods, two with bipolar

scales. Using a bipolar scale, Moberly and Dickson (2018) found that inter-goal conflict was

significantly positively correlated with depression at baseline, with ambivalence and

facilitation entered as covariates, with a small effect size, but inter-goal conflict did not

predict changes in depressive symptoms over one month. This study was well powered and of

good overall quality; however, it relied on a student sample, limiting inferences to

community and clinical populations. Similarly, Emmons and King (1998) found a medium-

sized correlation at time 1, but no significant correlation between strivings conflict and

depression at one year follow-up, using SIM and a unipolar scale; however, no baseline

measure of depression was taken to determine whether conflict predicted change in

depression. Boudreaux and Ozer (2013) found that goal conflict at baseline was a significant

predictor of future levels of depressive symptoms when initial depression, anxiety, and

somatization were included in the model. This study was rated as 'good' using the QAT due

to the large sample, longitudinal design and control of covariates.

5. Discussion

The present review highlights the limited nature of evidence for a positive relationship

between IGC and depressive symptomatology. Eight of ten studies included in this review

found small to medium positive associations between IGC and depression using a range of

outcome measures; however, some studies (1, 4 and 6 in particular) suffered from small

samples and for this reason were underpowered. Two studies (Karoly et al., 2008; King et

al., 1998) found no association between depression and IGC using cross-sectional designs

and none of the studies with a longitudinal follow-up found an association that could support

a causal link between IGC and depression. A clinically depressed sample produced a

medium effect, with a depressed group scoring significantly higher for IGC than a control

group (Stangier, 2007). This study controlled for possible confounding effects of

comorbidity and found a moderate correlation between severity of depression and IGC. In

contrast, low goal conflict (undifferentiated from goal facilitation) was related to subjective

well-being and less depressive symptoms. The current correlational evidence highlights a

possible link between depression and higher levels of IGC, with more depressive

symptomatology in participants with greater conflict between their expressed goals; however,

the current evidence is limited and methodological flaws (e.g., distinguishing between

depression related perceptions of conflict as opposed objective measures conflict; poorly

operationalised and validated constructs; correlational study designs) further limit inferences.

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Kelly et al. (2011) found a significant small positive effect for the relationship between IGC and depression; however, goal conflict did not independently correlate with depression. Lower levels of conflict predicted more depression symptoms specifically when ambivalence was moderate or high; however, Moberly & Dickson (2018) failed to replicate this in a larger sample. Ambivalence (Bleuler, 1911) refers to contradictory feelings directed toward the same target, conceptualised as approach-avoidance conflict (Sincoff, 1990), or within-striving conflict (Emmons & King, 1988); therefore, ambivalence is most distressing when individuals' goals do not make conflicting demands on resources, as this ambivalence may result from deeper-rooted, less conscious motivational conflict. Furthermore, depression is associated with lower levels of approach motivation (Dickson & MacLeod, 2004); therefore, conflict between goals represents goal striving, and may indicate pursuit of valued goals, which, the authors suggest, potentially protects against depression.

IGC, assessed by the CICA, was related to depression and poor subjective well-being (Renner & Leibetseder, 2000; Stangier et al., 2007). Renner and Leibetseder (2000) replicated previous findings by demonstrating associations between IGC and depression, and significantly higher conflict values in a psychotherapy group compared to a non-clinical group. Low degree of general conflict was found to be related to low symptom severity; however, contrary to expectations, high conflict, compared to low, did not predict the degree of clinical symptoms. This finding suggests a non-linear relationship between conflict and depression and it is proposed that tolerance of ambiguity moderates the correlation between personal conflict and symptom severity (Cezanne, 1987; Lauterbach, 1991; Zinke & Lauterbach, 1988). This concords with the psychodynamic view that symptom severity is dependent upon an individual's capacity and resources to successfully manage conflicts when they arise. This interpretation is further supported by the diathesis-stress model of

vulnerability (Zubin & Spring, 1977) and Grawe's (1998) hypothesis that acute cognitive inconsistency triggers clinical symptoms in predisposed individuals. It may also suggest that reflection on conflict may be adaptive; for example, awareness of conflict creates negative, emotionally laden psychological states, which prompt action to create synergy.

Further to this, it has been proposed that goal conflict can actually have positive effects (Brim & Kagan, 1980); for example, awareness of conflicts can lead to a process of clarification and re-evaluation (Cropanzano, Citera, & Howes, 1995) and a diversification or differentiated set of pursuits. Whether individuals with more conflict experience greater motivational inhibition, which in turn inhibits attainment of the goals in question, is unclear because many studies are cross-sectional and infer goal-level phenomenon from person-level data (i.e., ratings averaged across goals). Emmons & King (1988) examined the inhibition model more directly to determine whether individuals tend to inhibit action on conflictful or ambivalent strivings. In support of Pennebaker's (1985) model of inhibition, conflict was found to correlate with inhibition of behaviour and increased rumination.

5.1. Interpretation of Study Results

Boudreaux and Ozer (2012) argue that conflicting goals may not be inherently less attainable than non-conflicting goals. They distinguish between goal and person-level factors, proposing that this is essential for understanding goal striving. They posit that the inhibitory effects associated with IGC arise not from the demands of the goals themselves, but from the lack of resources of the person holding those goals (Segerstrom & Nes, 2006). Emmons and King (1988) found that individuals with more conflict between their goals spent more time thinking about conflicts and less time acting on their strivings, inhibiting attainment. Supporting this hypothesis, King et al. (1998) found a moderate negative correlation between

goal conflict and goal attainment at the person-level ($r = -.27$), but a very small effect at the goal-level ($r = -.05$). The tendency to experience conflict may, therefore, associate with trait-like, motivational aspects, or resource limitations not intrinsic to expressed goals. Alternatively, this could illustrate a self-report bias of person-level factors influencing conflict ratings, with little relationship at the goal level. The lack of longitudinal findings, and lack of more sophisticated explorations of goal conflict and related variables in this area precludes firm conclusions regarding the nature of this relationship.

The longitudinal findings in this review suggest that self-reported goal conflict did not predict symptom change over time. None of the longitudinal studies provided evidence for relationships. Depressive symptoms, then, may not be causally related to the severity of goal conflict. One explanation of cross-sectional findings, therefore, is that goal processes could be mood congruent; for example, depressed individuals may be more likely to report negative judgements about their goals, including judgement of conflict. This highlights a limitation of cross-sectional designs and self-report measures in this respect; furthermore, it is not clear how stable goals and goal conflict are; although Emmons (1986) did find high stability of personal strivings there is not much evidence at present. If goals are highly stable then it is unlikely that they would predict change in depressive symptoms over time. Further longitudinal investigation of the goal and symptom change over time needed to establish their relation.

Moberly and Dickson (2018) found that inter-goal conflict (but not facilitation) and ambivalence were both uniquely positively associated with depressive symptoms concurrently. In contrast to other findings, the authors hypothesised that the relationship between inter-goal conflict and symptoms of depression is unlikely to be due to a general tendency for distressed people to make more pessimistic goal ratings, because no negative

correlation emerged between inter-goal facilitation and depressive symptoms. Inter-goal facilitation may, therefore, be more relevant to psychological well-being than to distress symptoms (Riediger & Freund, 2004). The mixed results in this area, and the inability to tease apart facilitation from conflict, highlights an area in need of further research. It is plausible that a tension exists between having similar (but undiversified) and, therefore, mutually facilitatory goals on the one hand and having diversified but potentially less facilitatory goals on the other. Boudreaux and Ozer (2012) found that people who experienced goal facilitation reported greater levels of positive affect, life satisfaction, and successful goal attainment.   Riediger and Freund (2004) found that conflict and facilitation are empirically and conceptually independent and demonstrate divergent associations with measures of well-being and goal pursuit. This research suggests that mutual facilitation among goals is positively associated with involvement in goal pursuit, which may be protective against depression. Boudreaux and Ozer (2012) found that negative affective states may direct attention to potential problems, whereas positive affect might indicate that goal progress is moving along favourably, which allows individuals to focus on other goals. Some conflict could be protective in terms of allowing people to have many eggs in one basket, so they are psychologically 'diversified' in terms of their investments. If an individual relies on one narrow class of goals, they may be particularly vulnerable to setbacks.

In summary, the evidence base is not sufficiently robust to definitively answer the review question. At present, the research reviewed provides modest evidence to support theoretical literature, which hypothesised that inter-goal conflict was associated with negative affective states and psychopathology. Findings around covariates and confounders remain unclear and the nature of conflict (actual as opposed to perceived) requires further

investigation. Finally, longitudinal evidence does not support a causal relationship where greater IGC results in more symptom severity.

5.2. Implications for clinical practice

Goals theory provides a framework for drawing together a variety of therapeutic practices, with implications for clinical practice. Many therapeutic approaches are premised increasing awareness of motivations and their links to affective states. The findings of this review suggest that focus on intra-goal conflict facilitate change, through creating more synergetic, facilitative, inter-goal relationships at a conscious, concrete level, thereby reducing concomitant negative affect and increasing subjective well-being. Reflection supports insight into how problems have evolved, as well as problem solving of solutions (Mansell, 2005; Robbins, 1958). Though a first step, awareness might not necessarily help people to reprioritise goals, and additional strategies may be required to support behavioural change; for example scaffolding and behavioural activation for depressed individuals (Oud et al., 2019).

Alternatively, targeting higher-level goals may help to resolve conflicts at lower levels, supporting goal actualization. Hierarchical conceptions are consistent with a wide range of psychotherapeutic models (Cooper, 2012), which aim to support people to find ways of actualizing their highest order goals (Matre et al., 2013). Supporting conscious clarification and scaffolding skills to resolve conflicts can, therefore, help individuals actualise common higher order goals. This may take the form of written goal-based measures or be achieved through processes such as personal projects analysis (Little, 1983, 1993), where clients are encouraged to reflect on, and reconsider, their goals. Tools can help clients to consider the levels of conflict and synergy between goals (e.g. the Striving Instrumentality Matrix, Emmons & King, 1988). Asking clients to record their goals may support attainment

through conscious reflection and formulation. It can clarify for clients what their important goals are, and it can provide feedback on progress; however, focusing on goals that individuals are pessimistic about attaining may generate rumination and negative affect (Dickson et al., 2011). This means clarifying conflicts, prioritising goals, and then setting subgoals, before scaffolding to support attainment, are likely key. Examining whether perceived conflicts are actually 'genuine', related to resource limitations or inherent incompatibility may also be fruitful; this is still not clear from the literature.

Critical reflection, articulation, clarification of unconscious goals may help clients feel more in control, and more understanding and accepting of themselves; moreover, by becoming more conscious of their goals, individuals can explore alternative, and potentially more effective, means of attaining them, or look at ways of overcoming goal conflict and arbitrary control of unconscious motivational processes (Mansell, 2005). Control theory (Mansell, 2005) is based on the principle that goal-directed activity arises from a hierarchy of negative feedback loops, where psychological distress arises from the unresolved conflict. Hence, conscious elicitation and exploration allows clients to direct their attention to their overall goals hierarchy, and to reconfigure their ways of doing things to optimize actualization of highest order goals.

A number of empirically supported therapeutic approaches explicitly address goal conflict; for example, Motivational Interviewing (Lussier & Richard, 2007) targets ambivalence, which may be an indicator of goal conflict and Method of Levels (Carey, 2006) therapy addresses conflict and considers higher-level goals. This is a cognitive approach to psychotherapy where the therapist aims to help the patient shift awareness to higher levels of perception in order to resolve conflicts and allow reorganization to take place.

Cognitive Behavioural Therapy often involves focusing on conflicts and maladaptive goals; in particular '3rd wave' approaches, such as Compassion Focussed Therapy (Gilbert, 2009), which encourage clients to accept conflict and discrepancies between goals and perceptions of reality and subsequently pursue goals that are consistent with values. While there appears to be consensus that conflict is detrimental, and should be addressed in therapy, empirical research is required to establish more robust links.

5.3. Limitations of the Literature Reviewed

First, a large proportion of the studies reviewed were conducted using student populations although some did recruit clinical and non-student populations. Students tend to be young and as such may arguably have less well-developed motivational concepts and generally have fewer burdens of responsibility (Baumeister & Bushman, 2007). Thus, the content of their goals may differ from that of non-student populations, potentially reducing the potential for conflict and concomitant negative affect. However, there is no research to suggest that the conflicts reported by students are less significant and distressing than conflicts experienced by other groups. Personality integration is suggested to happen over many decades (Ryan & Deci, 2000), so may be less of an issue in later life.

Most studies were cross-sectional and correlational and therefore do not imply causality. None of the longitudinal studies included in the review suggested a causal link between IGC and depressive symptoms. For example, Moberly and Dickson (2018) found that IGC did not predict change in depression from time one to time two. At present, there are not many appropriately designed studies to elucidate this causal relationship; moreover, it may be more of an issue when people go through goal transitions, where new conflicts are likely to emerge along with affective feedback. Conducting experimental studies while

maintaining ecologically validity is a challenge; therefore, longitudinal studies that include suitable covariates are very important in illuminating possible causal relationships and, therefore, for determining the importance of IGC.

Mediation and moderation of the conflict-depression relationships remains unclear; for example Emmons and King (1988) found that rumination was associated with IGC and depression, which might point to a mechanism of mediation. This is important to elucidate in future research, as it may point to a causal mechanism through which affective states and cognitive processes associated with depression arise (Klappheck et al., 2012), although Control Theory (Mansell, 2005) would suggest that there would remain a direct relationship simply due to lack of progress on conflicting goals. Understanding of moderating variables requires significant development; for example, access to resources and cultural background are likely play a significant role. Treatment implications are, therefore, unclear.

Surveys/questionnaires about certain aspects of people's lives may not always result in accurate reporting and there is usually not a mechanism for verifying this information. For the present review, social desirability effects may have influenced self-report measures, where respondents may have felt embarrassed to share their attitudes or behaviours, or are simply unaware of implicit motivational forces. This could lead to conflict and depressive symptoms being under-reported. A general limitation due to self-report is whether people report more conflict simply because they are depressed (and tend to view things negatively), although not this is not entirely consistent with evidence (e.g., on goal facilitation).

The diverse methods used in goal conflict research have presented a challenge to assessing outcomes (Kelly, Mansell, & Wood, 2015), with methods differing in the way they assess goals. In matrix approaches, goals are assessed by asking participants to list their important goals. In contrast, the CICA and the Repertory Grid Technique (RGT) use goal

constructs specified by the researcher. One cause for concern is the low correlation of $r = .07$

(Kelly et al., 2015) between the matrix assessment of conflict and the CICA, suggesting that

these two forms of measurement may be assessing different constructs and cannot be used

interchangeably (Michalak et al., 2011). For this reason, the method of assessment has been

proposed as a moderator of the relationship between goal conflict and depression; while

matrix methods might be better for determining personally important goals they are less

likely to capture implicit motivations (Gray et al., 2017).

5.4. Limitations of the Review

A number of limitations of the review should be acknowledged. First, the search

strategy did not include grey literature, due to the limited resources of the project. This

means that null results, or more recent and unpublished studies may have been missed.

Second, three studies were located searching the references of previously published studies.

This may point to a weakness of the search strategy; for example, search terms may not have

been extensive enough or appropriately targeted, or the database selection may not have been

comprehensive enough. One factor which might preclude comprehensive search terms is this

diverse range of terms used in the literature. There is a range of conceptually similar

constructs used in the literature, which are overlapping, but, nevertheless, use different

terminology; however, thorough additional reference searching was used to uncover missing

studies to make this review comprehensive.

Reporting quality criteria and methodological quality criteria can be difficult to

differentiate using QAT because study authors may omit relevant details; this may be because

those aspects did not meet methodological quality standards, in which case study quality may

genuinely be compromised. For example, some studies did not report power calculations

(reporting quality), preventing an assessment of the quality of this calculation according to consistently applied criteria (methodological quality). Secondly, the QAT tool used did not provide separate quality rating criteria for reporting and methodological quality. Finally, the QAT does not allow the reviewer to judge whether the target effect size was appropriate in the context of the research area, which can vary significantly. This meant that the studies included in the review only received an overall rating based on the rater's personal judgement.

5.5. Future research

Research is required to account for the ways in which intrapersonal conflicts are related to depression, as well as other psychological processes. Primarily, we know little about how people 'choose' goals and what makes them more susceptible to conflict. Depressed people might be less able to introspect on their goals, thus 'missing' conflict; therefore, they strive for goals that they perceive as socially desirable, further engendering conflict (Tan & Hall, 2005). It remains unclear if IGC is central to negative consequences. As Kelly et al. (2015) stated, it is necessary to ascertain which variables are most detrimental, how they interact and whether they correspond to similar or different motivational mechanisms.

Further research is required to determine whether depression is determined by: the severity and pervasiveness of conflict (Emmons & King, 1988); ability tolerate or accept the conflict (e.g. Mansell , 2005); the extent to which conflict interferes with adaptive behaviour (e.g., Carey, 2008); or by the extent to which conflict is subconscious/implicit and unavailable to reflection and resolution (Ferguson et al., 2008; Schultheiss et al., 2008); the extent to which social and resource limitations impinge on decision making (Cialdini &

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Goldstein, 2004; Cooper, 2018; Smail, 1995); or inherent incompatibility or shared resource limitation (Segerstrom & Nes, 2006). The available evidence tends to indicate that resource limitation may have a significant role to play in terms of availability of social, cognitive and material resources.

6. Conclusion

Current evidence for a relationship between inter-goal conflict and depressive symptoms in adults is limited. More longitudinal investigations are needed to establish the relationship and determine direction of causality. The roles of construct specificity, implicit motivation and rumination also require further investigation to understand their roles in inter-goal conflict and depression. Clinically, it may be important for therapists to probe clients' goals for conflict, so that facilitative relationships can be established. Goals are social as well as personality constructs; therefore, factors of culture, environment, resource access and social desirability are likely relevant factors to investigate.

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Running Head: **THE ROLE OF INTER-GOAL CONFLICT IN DEPRESSIVE SYMPTOMATOLOGY: A SYSTEMATIC REVIEW**

Appendix A

1. **Emmons and King (1988)**

Criteria	1	2	Other (CD, NR, NA)*
1. Was the research question or objective in this paper clearly stated?	Y	Y	
2. Was the study population clearly specified and defined?	Y	Y	
3. Was the participation rate of eligible persons at least 50%?	Y	Y	
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?	Y	Y	
5. Was a sample size justification, power description, or variance and effect estimates provided?	N	N	
6. For the analyses in this paper, were the exposure(s) of interest measured prior to the outcome(s) being measured?	Y	Y	
7. Was the timeframe sufficient so that one could reasonably expect to see an association between exposure and outcome if it existed?	Y	Y	
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)?	Y	Y	
9. Were the exposure measures (independent variables) clearly defined, valid, reliable, and implemented consistently across all study participants?	Y	Y	
10. Was the exposure(s) assessed more than once over time?	Y	Y	
11. Were the outcome measures (dependent variables) clearly defined, valid, reliable, and implemented consistently across all study participants?	Y	Y	
12. Were the outcome assessors blinded to the exposure status of participants?		NA	NA
13. Was loss to follow-up after baseline 20% or less?		NR	NR
14. Were key potential confounding variables measured and adjusted statistically for their impact on the relationship between exposure(s) and outcome(s)?	Y	Y	

Quality Rating (Good, Fair, or Poor) Study 1: Good; Study 2: Fair

Rater #1 initials: MI

Rater #2 initials: JS

THE ROLE OF INTER-GOAL CONFLICT IN DEPRESSIVE SYMPTOMATOLOGY: A SYSTEMATIC REVIEW

2.   **Perring et. al (1988)**

Criteria	1	2	Other (CD, NR, NA)*
1. Was the research question or objective in this paper clearly stated?	Y	Y	
2. Was the study population clearly specified and defined?	N	N	
3. Was the participation rate of eligible persons at least 50%?	Y	Y	
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?	n	n	
5. Was a sample size justification, power description, or variance and effect estimates provided?	n	n	
6. For the analyses in this paper, were the exposure(s) of interest measured prior to the outcome(s) being measured?	n	n	
7. Was the timeframe sufficient so that one could reasonably expect to see an association between exposure and outcome if it existed?	y	y	
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)?	y	y	
9. Were the exposure measures (independent variables) clearly defined, valid, reliable, and implemented consistently across all study participants?	y	n	
10. Was the exposure(s) assessed more than once over time?	n	n	
11. Were the outcome measures (dependent variables) clearly defined, valid, reliable, and implemented consistently across all study participants?	y	y	
12. Were the outcome assessors blinded to the exposure status of participants?	na	na	
13. Was loss to follow-up after baseline 20% or less?	na	na	
14. Were key potential confounding variables measured and adjusted statistically for their impact on the relationship between exposure(s) and outcome(s)?	n	n	

   Quality Rating (Good, Fair, or Poor) Fair

Rater #1 initials: MI

Rater #2 initials: JS

Additional Comments (If POOR, please state why):

THE ROLE OF INTER-GOAL CONFLICT IN DEPRESSIVE SYMPTOMATOLOGY: A SYSTEMATIC REVIEW

3. Karoly & Ruehlman (1996)

Criteria	1	2	Other (CD, NR, NA)*
1. Was the research question or objective in this paper clearly stated?	y	y	
2. Was the study population clearly specified and defined?	y	y	
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?	y	y	
5. Was a sample size justification, power description, or variance and effect estimates provided?	n	n	
6. For the analyses in this paper, were the exposure(s) of interest measured prior to the outcome(s) being measured?	na	na	
7. Was the timeframe sufficient so that one could reasonably expect to see an association between exposure and outcome if it existed?	y	y	
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)?	y	y	
9. Were the exposure measures (independent variables) clearly defined, valid, reliable, and implemented consistently across all study participants?	y	y	
10. Was the exposure(s) assessed more than once over time?	na	na	
11. Were the outcome measures (dependent variables) clearly defined, valid, reliable, and implemented consistently across all study participants?	y	y	
12. Were the outcome assessors blinded to the exposure status of participants?	na	na	
13. Was loss to follow-up after baseline 20% or less?	na	na	
14. Were key potential confounding variables measured and adjusted statistically for their impact on the relationship between exposure(s) and outcome(s)?	n	n	

Quality Rating (Good, Fair, or Poor)　　　　**Fair**

Rater #1 initials: MI

Rater #2 initials: JS

Additional Comments (If POOR, please state why):

THE ROLE OF INTER-GOAL CONFLICT IN DEPRESSIVE SYMPTOMATOLOGY: A
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4. King et al. (1998)

Criteria	1	2	Other (CD, NR, NA)*
1. Was the research question or objective in this paper clearly stated?	y		
2. Was the study population clearly specified and defined?	Y		
3. Was the participation rate of eligible persons at least 50%?	Y		
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?	Y		
5. Was a sample size justification, power description, or variance and effect estimates provided?	N		
6. For the analyses in this paper, were the exposure(s) of interest measured prior to the outcome(s) being measured?	N		
7. Was the timeframe sufficient so that one could reasonably expect to see an association between exposure and outcome if it existed?	Y		
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)?	Na		
9. Were the exposure measures (independent variables) clearly defined, valid, reliable, and implemented consistently across all study participants?	n/a		
10. Was the exposure(s) assessed more than once over time?	n		
11. Were the outcome measures (dependent variables) clearly defined, valid, reliable, and implemented consistently across all study participants?	Y		
12. Were the outcome assessors blinded to the exposure status of participants?	n/a		
13. Was loss to follow-up after baseline 20% or less?	n/a		
14. Were key potential confounding variables measured and adjusted statistically for their impact on the relationship between exposure(s) and outcome(s)?	y		

Quality Rating (Good, Fair, or Poor)   **Fair**

Rater #1 initials: MI

Rater #2 initials:

Additional Comments (If POOR, please state why):

THE ROLE OF INTER-GOAL CONFLICT IN DEPRESSIVE SYMPTOMATOLOGY: A
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5. Renner & Leibetseder (2000)

Criteria	Yes	No	Other (CD, NR, NA)*
1. Was the research question or objective in this paper clearly stated?	Y		
2. Was the study population clearly specified and defined?	Y		
3. Was the participation rate of eligible persons at least 50%?	Y		
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?	Y		
5. Was a sample size justification, power description, or variance and effect estimates provided?	N		
6. For the analyses in this paper, were the exposure(s) of interest measured prior to the outcome(s) being measured?	n		
7. Was the timeframe sufficient so that one could reasonably expect to see an association between exposure and outcome if it existed?	Y		
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)?	y		
9. Were the exposure measures (independent variables) clearly defined, valid, reliable, and implemented consistently across all study participants?	y		
10. Was the exposure(s) assessed more than once over time?	n		
11. Were the outcome measures (dependent variables) clearly defined, valid, reliable, and implemented consistently across all study participants?	y		
12. Were the outcome assessors blinded to the exposure status of participants?	n/a		
13. Was loss to follow-up after baseline 20% or less?	n/a		
14. Were key potential confounding variables measured and adjusted statistically for their impact on the relationship between exposure(s) and outcome(s)?	y		

Quality Rating (Good, Fair, or Poor)   **Fair**

Rater #1 initials: MI

Rater #2 initials:

Additional Comments (If POOR, please state why):

THE ROLE OF INTER-GOAL CONFLICT IN DEPRESSIVE SYMPTOMATOLOGY: A
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6. Stangier et al. (2007)

Criteria	Yes/No	2	Other (CD, NR, NA)*
1. Was the research question or objective in this paper clearly stated?	Y	Y	
2. Was the study population clearly specified and defined?	Y	Y	
3. Was the participation rate of eligible persons at least 50%?	Y	Y	
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?	Y	Y	
5. Was a sample size justification, power description, or variance and effect estimates provided?	N	N	
6. For the analyses in this paper, were the exposure(s) of interest measured prior to the outcome(s) being measured?	Y	Y	
7. Was the timeframe sufficient so that one could reasonably expect to see an association between exposure and outcome if it existed?	Y	Y	
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)?	Y	Y	
9. Were the exposure measures (independent variables) clearly defined, valid, reliable, and implemented consistently across all study participants?	Y	Y	
10. Was the exposure(s) assessed more than once over time?	Y	Y	
11. Were the outcome measures (dependent variables) clearly defined, valid, reliable, and implemented consistently across all study participants?	Y	Y	
12. Were the outcome assessors blinded to the exposure status of participants?		NA	NA
13. Was loss to follow-up after baseline 20% or less?		NR	NR
14. Were key potential confounding variables measured and adjusted statistically for their impact on the relationship between exposure(s) and outcome(s)?	Y	Y	

Quality Rating (Good, Fair, or Poor) Fair

Rater #1 initials: MI

Rater #2 initials: JS

Additional Comments (If POOR, please state why):

7. Karoly et al. (2008)

Criteria	Yes	No	Other (CD, NR, NA)*
1. Was the research question or objective in this paper clearly stated?	Y		
2. Was the study population clearly specified and defined?	Y		
3. Was the participation rate of eligible persons at least 50%?	Y		
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?	Y		
5. Was a sample size justification, power description, or variance and effect estimates provided?	n		
6. For the analyses in this paper, were the exposure(s) of interest measured prior to the outcome(s) being measured?	n/a		
7. Was the timeframe sufficient so that one could reasonably expect to see an association between exposure and outcome if it existed?	Y		
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)?	Y		
9. Were the exposure measures (independent variables) clearly defined, valid, reliable, and implemented consistently across all study participants?	Y		
10. Was the exposure(s) assessed more than once over time?	N		
11. Were the outcome measures (dependent variables) clearly defined, valid, reliable, and implemented consistently across all study participants?	Y		
12. Were the outcome assessors blinded to the exposure status of participants?	y		
13. Was loss to follow-up after baseline 20% or less?	n/a		
14. Were key potential confounding variables measured and adjusted statistically for their impact on the relationship between exposure(s) and outcome(s)?	y		

Quality Rating (Good, Fair, or Poor) Fair

Rater #1 initials: MI

Rater #2 initials:

Additional Comments (If POOR, please state why):

THE ROLE OF INTER-GOAL CONFLICT IN DEPRESSIVE SYMPTOMATOLOGY: A SYSTEMATIC REVIEW

8. Kelly et. al (2011)

Criteria	Yes	No	Other (CD, NR, NA)*
1. Was the research question or objective in this paper clearly stated?	Y		
2. Was the study population clearly specified and defined?	Y		
3. Was the participation rate of eligible persons at least 50%?	Y		
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?	Y		
5. Was a sample size justification, power description, or variance and effect estimates provided?	N		
6. For the analyses in this paper, were the exposure(s) of interest measured prior to the outcome(s) being measured?	N		
7. Was the timeframe sufficient so that one could reasonably expect to see an association between exposure and outcome if it existed?	Y		
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)?	Y		
9. Were the exposure measures (independent variables) clearly defined, valid, reliable, and implemented consistently across all study participants?	Y		
10. Was the exposure(s) assessed more than once over time?	n/a		
11. Were the outcome measures (dependent variables) clearly defined, valid, reliable, and implemented consistently across all study participants?	Y		
12. Were the outcome assessors blinded to the exposure status of participants?	n/a		
13. Was loss to follow-up after baseline 20% or less?	n/a		
14. Were key potential confounding variables measured and adjusted statistically for their impact on the relationship between exposure(s) and outcome(s)?	y		

Quality Rating (Good, Fair, or Poor) Fair

Rater #1 initials: MI

Rater #2 initials:

Additional Comments (If POOR, please state why):

THE ROLE OF INTER-GOAL CONFLICT IN DEPRESSIVE SYMPTOMATOLOGY: A SYSTEMATIC REVIEW

9. **Boudreaux & Ozer (2012)**

Criteria	Yes	No	Other (CD, NR, NA)*
1. Was the research question or objective in this paper clearly stated?	Y		
2. Was the study population clearly specified and defined?	Y		
3. Was the participation rate of eligible persons at least 50%?	Y		
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?	Y		
5. Was a sample size justification, power description, or variance and effect estimates provided?	N		
6. For the analyses in this paper, were the exposure(s) of interest measured prior to the outcome(s) being measured?	Y		
7. Was the timeframe sufficient so that one could reasonably expect to see an association between exposure and outcome if it existed?	Y		
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)?	y		
9. Were the exposure measures (independent variables) clearly defined, valid, reliable, and implemented consistently across all study participants?	Y		
10. Was the exposure(s) assessed more than once over time?	Y		
11. Were the outcome measures (dependent variables) clearly defined, valid, reliable, and implemented consistently across all study participants?	Y		
12. Were the outcome assessors blinded to the exposure status of participants?	n/a		
13. Was loss to follow-up after baseline 20% or less?	Y		
14. Were key potential confounding variables measured and adjusted statistically for their impact on the relationship between exposure(s) and outcome(s)?	y		

Quality Rating (Good, Fair, or Poor) Good

Rater #1 initials: MI

Rater #2 initials:

Additional Comments (If POOR, please state why):

10. Moberly & Dickson (2018)

Criteria	Yes	No	Other (CD, NR, NA)*
1. Was the research question or objective in this paper clearly stated?	Y		
2. Was the study population clearly specified and defined?	Y		
3. Was the participation rate of eligible persons at least 50%?	Y		
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?	Y		
5. Was a sample size justification, power description, or variance and effect estimates provided?	y		
6. For the analyses in this paper, were the exposure(s) of interest measured prior to the outcome(s) being measured?	Y		
7. Was the timeframe sufficient so that one could reasonably expect to see an association between exposure and outcome if it existed?	Y		
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)?	Y		
9. Were the exposure measures (independent variables) clearly defined, valid, reliable, and implemented consistently across all study participants?	Y		
10. Was the exposure(s) assessed more than once over time?	Y		
11. Were the outcome measures (dependent variables) clearly defined, valid, reliable, and implemented consistently across all study participants?	Y		
12. Were the outcome assessors blinded to the exposure status of participants?	n/a		
13. Was loss to follow-up after baseline 20% or less?	Y		
14. Were key potential confounding variables measured and adjusted statistically for their impact on the relationship between exposure(s) and outcome(s)?	y		

Quality Rating (Good, Fair, or Poor) good

Rater #1 initials: MI

Rater #2 initials:

Additional Comments (If POOR, please state why):