The use and effectiveness of behaviour change techniques, and specifically the use of if-then planning (or implementation intentions), in therapeutic interventions for mental health conditions

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Declaration

I hereby declare that this work has not been, and will not be, submitted in whole or in part to another University or institution for the award of any other degree at the University of Sheffield. I confirm that this is my original work and all other sources have been appropriately referenced.

Word count

1. Literature Review:

Is framing goals as approach versus avoidance associated with depression and anxiety?

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2. Research Report:

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Abstract

The first part of the thesis reports a systematic review aimed at exploring the relationship between the way that goals are framed (e.g., in terms of approach versus avoidance) and depression and/or anxiety in adults. Ten studies met the inclusion criteria. Framing goals in approach terms or an orientation toward the behavioural approach system (BAS) was associated with reduced depression and anxiety. However, framing goals in terms of avoidance or an orientation toward the behavioural inhibition system (BIS) was associated with increased anxiety and marginally associated with increased depression. Some studies exploring both anxiety and depression found that goals framed as approach or avoidance were highly correlated with one another and a change in goal-framing intensity across therapy was also related to outcomes.

The empirical study investigated whether implementation intentions (IIs) are naturally used in psychological therapies and whether the frequency and quality of the use of IIs is associated with outcomes of therapy. Use of behaviour change techniques (BCTs) including IIs, was identified in transcripts of cognitive behaviour therapy (CBT) and counselling for depression (CfD) therapy sessions ($N = 40$) for depression, using a coding framework. Use of BCTs was then related to outcome measures. IIs were identified according to three components of: (i) identifying an opportunity; (ii) identifying a goal-directed response; and (iii**)** linking the identified opportunity and a goal-directed response**.** Whilst components (i) and (ii) were naturally used by therapists, operationalised 'if-then' plans (iii) were not used. The frequency and quality of II use was therefore not significantly associated with improved outcomes in the full sample ($N = 40$). When the file was split by therapy type, component (i) was significantly associated with improvements in outcome scores in CBT sessions ($N = 20$). However, this finding lacked sufficient power.

Acknowledgements

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I would also like to express my gratitude to the experts and coders who helped on this project. Thank you for giving up so much of your time. I hope this work does justice to your effort.

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Part 2: Research Report

Part 1: Literature Review

Is framing goals as approach versus avoidance associated with depression and anxiety?

Abstract

Objectives. This systematic review aimed to explore the relationship between the way that goals are framed (i.e., in terms of approach versus avoidance) and depression and/or anxiety in adults.

Method. Search terms related to goals, approach/avoidance, and depression and anxiety were used to identify articles published up to August 2017 from the PsychInfo, Scopus, and Medline databases. An ancestry search identified additional studies.

Results. Ten studies met the inclusion criteria. Overall, study quality was fair. In studies focusing solely on either anxiety or depression framing goals in approach terms or an orientation toward the behavioural approach system (BAS) was associated with reduced depression and anxiety. Framing goals in terms of avoidance or an orientation toward the behavioural inhibition system (BIS) was associated with increased anxiety and marginally associated with increased depression. However, some studies exploring both anxiety and depression found that goals framed in approach or avoidance terms were highly correlated with one another. It was also suggested that changes in mental health status was related to changes in goal-framing intensity across therapy rather than baseline orientation.

Conclusions. Lack of use of approach goals is associated with maintenance of depression, whilst use of avoidance goals is associated with increased anxiety.

Practitioner points:

- Lack of framing goals in approach terms could maintain difficulties for individuals with depression.
- Framing goals in avoidance terms could maintain difficulties for individuals with anxiety.

Limitations:

- High correlation between goals framed in approach or avoidance terms suggests that it may sometimes be difficult to identify the independent effects of each goal orientation.
- Most studies had observational designs. More experimental and longitudinal evaluations of the relationship between goal orientation and mental health are needed to understand long-term associations.

Is framing goals as approach versus avoidance associated with depression and anxiety?

1. Introduction

1.1. Approach and avoidance. The human aspiration to avoid pain and approach pleasure has been discussed as the hedonic principle underpinning motivational models in biological and social research (Higgins, 1998; Lindenberg & Steg, 2007). The principle states that all humans want to avoid negative outcomes and seek positive outcomes (Carver & Scheier, 1998; Elliot, 1999). Approach and avoidance has been explored in relation to different goal concepts: achievement motivation; the systems influencing intentions to approach or avoid; and framing goals in approach or avoidance terms in goal-setting (Carver & Scheier, 1990).

Elliot (1999) separated approach and avoidance achievement motivation (Hoppe, 1930; James, 1890; Lewin, Dembo, Festinger, & Sears, 1944; Murray, 1938), suggesting that achievement motivation was a function of a desire to avoid negative outcomes or events, or approach positive outcomes or events. Approach goals are goals focused on a positive outcome and therefore involve the intention to work toward or maintain a wanted outcome (Carver & Scheier, 1990), e.g., 'I want to improve my mood and feel able to engage in social activities'. Avoidance goals are goals that are focused on negative outcomes and endeavouring to avoid, stay away from or eliminate an unwanted outcome (Elliot & Friedman, 2005), e.g., 'I want to stop my depression from getting worse and not feel isolated'. Similar actions can be framed from an approach or avoidance orientation, e.g., an individual may go to the gym to improve their health (approach) or to prevent themselves from becoming unfit (avoidance).

Specific systems such as the behavioural approach system (BAS) and behavioural inhibition system (BIS; Gray, 1975; 1994) have been found to underpin approach and avoidance strivings. Gray (1975; 1994) viewed the BAS and BIS as neuropsychological

and physiological systems related to innate hedonic dispositions in pursuit and achievement of goals. Carver and Scheier (1990) suggested behavioural activation and inhibition orientation guides the types of goals that a person sets (e.g., approach or avoidance framed goals), as well as influencing responses to perceived progress or failure in goal pursuit.

In summary, the BAS is a system that supports striving for goals framed in approach terms, as it guides sensitivity to cues of reward, and approach goals are goals framed in terms of being motivated, working toward or sustaining desired or wanted outcomes. In contrast, the BIS is a system that supports striving for goals framed in avoidance terms, as it promotes sensitivity to perceived threats, and avoidance goals are goals framed in terms of inhibiting, avoiding or eliminating undesired or unwanted outcomes (Elliot, Sheldon, & Church, 1997). Both the BIS/BAS and framing of goals in avoidance or approach terms indicate how humans contemplate, or are orientated towards goals. BAS and BIS can be measured in relation to sensitivity to approach reward cues or avoid perceived threat, and the language used to set goals can be coded in terms of approach and avoidance framing.

1.2. Goal-framing and mental health. Goals have been suggested to play an active role in the process of therapy (Grosse Holtforth & Grawe, 2002; Michalak & Grosse Holtforth, 2006). For example, supporting greater specificity and challenge in treatment direction (Locke, Shaw, Saari, & Latham, 1981), increasing motivation, clarifying the target of treatment (Wollburg & Braukhaus, 2010), and supporting the achievement of therapeutic aims (Gollwitzer & Moskowtiz, 1996).

Within consistency theory, Grawe (2004; 2007) proposed all individuals form goals to appease four basic needs of: attachment; self-esteem; control; and approach and avoidance principles. Both explicit treatment goals and personal goals have been found to be valuable in therapy but goal orientation has been suggested as a possible barrier in

achieving outcomes (Michalak & Grosse Holtforth, 2006). Specifically, framing goals in terms of avoiding negative outcomes has been found to be harmful to effective goal striving and well-being (Elliot et al., 1997; Gillet, Lafreniere, Vallerand, Huart, & Fouquereau, 2014), as well as being associated with lower motivation, self-efficacy (Pajares, Britner, & Valiante, 2000; Shim & Ryan, 2005), optimism and self-esteem (Coats, Janoff-Bulman, & Alpert, 1996). Approach goals have also been found to promote higher levels of intrinsic satisfaction (Elliot & Sheldon, 1997), whilst avoidance goals are associated with lower satisfaction.

Most research on approach and avoidance goals has been correlational, focusing on the relationship between goal orientation or motivation and mental health. Studies with clinical populations have identified an association between anxiety and use of avoidance goals, and depression with deficits in approach goals (Dickson & MacLeod, 2004a; 2004b). More highly anxious individuals are less specific in approach goal formation (Dickson & MacLeod, 2004b) and explanation of goal non-attainment (Dickson & Moberly, 2013). Studies have identified individuals with anxiety generate more goals framed in avoidance terms and anticipate more negative consequences in progress toward goal attainment (Dickson, 2006). Furthermore, studies have found that depressed individuals are more pessimistic about control over, and likelihood of, goal approach/avoidance attainment (Dickson, Moberly, & Kinderman, 2011), leading to fewer approach goals being set and disengagement from goals when difficulties arise (Dickson, Moberly, O'Dea, & Field, 2016). The link between higher levels of mental distress and specific goal-framing suggests a link between level of mental distress and goal-striving ability, which is moderated or mediated by goal-framing.

Potential reasons for the difference in mental health status and goal orientation include avoidance goals being more focused on negative outcomes (Elliot & Sheldon, 1997), or less tangible outcomes focused on moving away (Heimpel, Elliot, & Wood,

2006), which involves discrepancy-enlarging loops (Carver, 2006). Therefore individuals using avoidance framed goals are focused on a possible negative outcome and attempt to distance themselves from that outcome, whilst approach goals promote individuals to move toward a specific goal which they can gauge progress toward. Avoidance goals are therefore seen to create ambiguity about progress toward a goal and limit individuals from feeling goal satisfaction (Carver, 2006; Elliot et al., 1997).

1.3. The current review. Although more studies have looked at how mental health has impacted the choice of goal-framing (i.e., goal-framing is viewed as the outcome of mental health), some have looked at the role of approach versus avoidance goals in determining mental health outcomes (i.e., goal-framing is viewed as a potential determinant of mental health). Exploring the relationship between goal-framing and mental health status, as planned in this review, could inform clinical practice by highlighting how to modify interventions designed to improve outcomes. Findings from this review could add to understanding of barriers to effective goal-framing (Michalak & Grosse Holtforth, 2006), therefore enabling therapists to better guide identification of treatment goals.

In a previous review, Grosse Holtforth (2008) found that approach and avoidance could be measured in relation to intensity (totality of an individuals goals) and satisfaction of motivational goals. Whilst baseline levels of avoidance motivation were not found to directly predict outcomes, avoidance intensity was associated with a range of psychological problems. Strength of avoidance motivation was also found to decrease across the course of therapy. However, this finding varied dependent on the specific goals set, the presenting mental health condition and outcome measure used. The review was a positional paper with the author reporting on his own work regarding a range of psychological problems, and many of the reviewed studies had small sample sizes. Trew (2011) reviewed the role that approach and avoidance play in depression;

identifying how decreased approach motivation and increased avoidance motivation are related to the onset and maintenance of depression. Trew (2011) developed an in depth integrative model but the review was not systematic.

Given that depression and anxiety are two of the most common mental health conditions (National Institute for Health and Care Excellence [NICE], 2011) and are highly comorbid (McManus, Bebbington, Jenkins, & Brugha, 2016), understanding the factors associated with both mental health conditions would be beneficial. There has not been a systematic review of studies exploring how framing of goals in approach or avoidance terms may relate to depression and anxiety. This review will explore both and therefore expand upon the previous work by Grosse Holtforth (2008) and Trew (2011) by using a systematic approach to review studies focusing on both anxiety and depression, as well as framing of goals and BIS/BAS orientation.

In addition, Latham and Arshoff (2016) suggested that specific mediators explain the relationship between goals, and goals are only successful if key moderators are met. Mediators included: goal specificity (Locke & Bryan, 1969); effort (Latham & Locke, 1975); persistence (Bavelas & Lee, 1978; Kaplan & Rothkopf, 1974; Kirsch, 1978) and planning. Moderators included: ability (Erez & Zidon, 1984; Locke, 1982); situational resources/constraints (Mawritz, Folger, & Latham, 2014); feedback (Locke, Cartledge, & Koeppel, 1968); and goal commitment (Locke & Latham, 1990; Porter & Latham, 2013). Consideration of such mediators and moderators will be important to understand the relationship between framing of goals and depression and anxiety.

The aim of this review therefore, is to examine the relationship between goals framed in approach versus avoidance terms, in relation to depression and anxiety, and to identify any potential mediators or moderators of this relationship.

2. Method

2.1. Search strategy.

Search for studies. The PsychInfo, Scopus and Medline databases were used to conduct a systematic search of literature published up to 24th August 2017. Search terms and Boolean operators entered were ('goal*' OR 'goal setting' OR 'goal framing' AND 'approach' OR 'avoidance' OR 'behavio* approach system' OR 'behavio* inhibit* system' OR 'approach focus* intervention' OR 'avoidance focus* intervention' OR 'motivation' AND 'depress*' OR 'anxiety' OR 'anxieties' OR 'anxious' OR 'anxiousness'). Due to the broad search area of 'goals' and 'approach/avoidance' additional limitations were applied to remove any non-human studies. In addition, irrelevant subject areas of engineering, physics and astronomy were excluded in Scopus. Secondly an ancestry search was completed. This was carried out by hand searching through the reference list of all final full articles identified for the review.

2.2. Terminology. Studies included in the review had to include reference to approach and/or avoidance framing of goals in relation to the following definitions.

Approach. Framing goals in approach terms relates to motivation or explicit goal setting focused on working toward or upholding desired outcomes/end points. To capture all studies investigating the theoretical concept of approach orientation the terms 'behavioural approach/activation system' or approach focus were included.

Avoidance. Framing goals in avoidance terms relates to motivation or explicit goal setting aimed at inhibiting, evading or eradicating undesired outcomes/end points. Again to capture all studies investigating the theoretical concept of avoidance orientation the terms 'behavioural inhibition system' or avoidance focus were included.

Adult. An adult sample was used to focus on the association between approach and avoidance in this population. The sample was set at ≥17 years of age because Zastrow and Kirst-Ashman (2009) defined age 17-22 as 'young adulthood' in line with psychological development theories. Adult studies often use samples with age ranges

≥17 years (Chu, Wei, Zhu, Shen, & Xu, 2017; Dalgleish et al., 2007; Marshall & Brockman, 2016; Sperlich, Arnhold-Kerri, & Geyer, 2011).

Mental health. Studies had to demonstrate relationship with anxiety and/or depression through recruitment of clinical populations or administration of measures of anxiety or depression during the study. Studies with clinical populations had to identify individuals as having anxiety or depression in line with criteria from the Diagnostic and Statistical Manual of Mental Disorders (DSM-5; American Psychiatric Association [APA], 2013) or the 10th revision of the International Statistical Classification of Diseases and Related Health Problems (ICD-10; World Health Organisation [WHO], 1992). If there was not a clinical sample, studies had to report on use of a validated measure of well-being related to anxiety and depression.

2.3. Inclusion/exclusion criteria. Seven items of inclusion/exclusion criteria were used to determine whether studies were eligible for the review. Included studies: (a) employed a measure of approach or avoidance goal-framing as an independent variable (IV); (b) reported on mental health as dependent variable (DV); (c) reported on anxiety and/or depression in over 50% of sample (as described above); (d) provided data for participants aged ≥17 years; (e) were published in peer reviewed journals; and (f) used experimental, quasi-experimental, or observational quantitative designs (e.g., cross sectional). Excluded studies were: (a) existing reviews or meta-analyses; (b) citations taken from a book; or (c) focused on mental health difficulties that were not anxiety or depression.

2.4. Procedure. Inclusion and exclusion criteria were used to screen titles, abstracts, and publication details of all studies. If studies appeared to meet criteria, or there was insufficient information to determine their relevance, full texts were reviewed. After final full texts were identified, the references of all final articles were screened in an ancestry search. Additional records were screened and assessed for eligibility.

2.5. Quality appraisal. Quality analysis was completed using the Downs and Black appraisal tool (1998; shown in Appendix A). The final studies were reviewed in depth regarding contents, results and quality. The Downs and Black tool is designed to assess quality across various study designs (quantitative, randomised and non-randomised) and recommended for quality appraisal in systematic reviews (Deeks et al., 2003; Saunders, Soomro, Buckingham, Jamtvedt, & Raina, 2003). The tool gives an overall score of quality (out of 31) for each study. The Downs and Black (1998) has been reported to have adequate criterion validity, test-retest reliability (r = .88), inter-rater reliability (r = .75) and internal consistency (KR-20 = .89). Similar to previous reviews (Brady, 2014; Larson, Vos, & Fernandez, 2013; Samoocha, Bruinvels, Elbers, Anema, & van der Beek, 2010) item 27 (power) was amended for the purposes of this review. A scoring system of 1 (yes, sufficient power) or 0 (no, insufficient or unreported power) was used instead of the six-point scale from the original version. This allowed key components of all the studies to be compared more effectively out of a total quality score of 28 (0-14 = poor, 15-19 = fair, 20-25 = good, and 26-28 = excellent).

An independent clinical psychologist repeated the quality appraisal on 90% of the papers. Inter-rater agreement was then calculated using Cohen's kappa (Cohen, 1960). Disagreements were resolved through discussion.

3. Results

Figure 1 is a flow diagram adapted from Moher, Liberati, Tetzlaff, and Altman (2009) illustrating the screening process. Keyword searches in databases identified 9,323 citations (PsychInfo = 3,299, Scopus = 3,881, and Medline = 2,143). After 1,420 duplicates were removed, 7,903 titles were screened and 7,410 were excluded as not being relevant. Abstracts were then screened and 436 were excluded. Finally, 57 full-text articles were assessed for eligibility using the inclusion/exclusion criteria. This process identified 4 papers that met all eligibility criteria and were included.

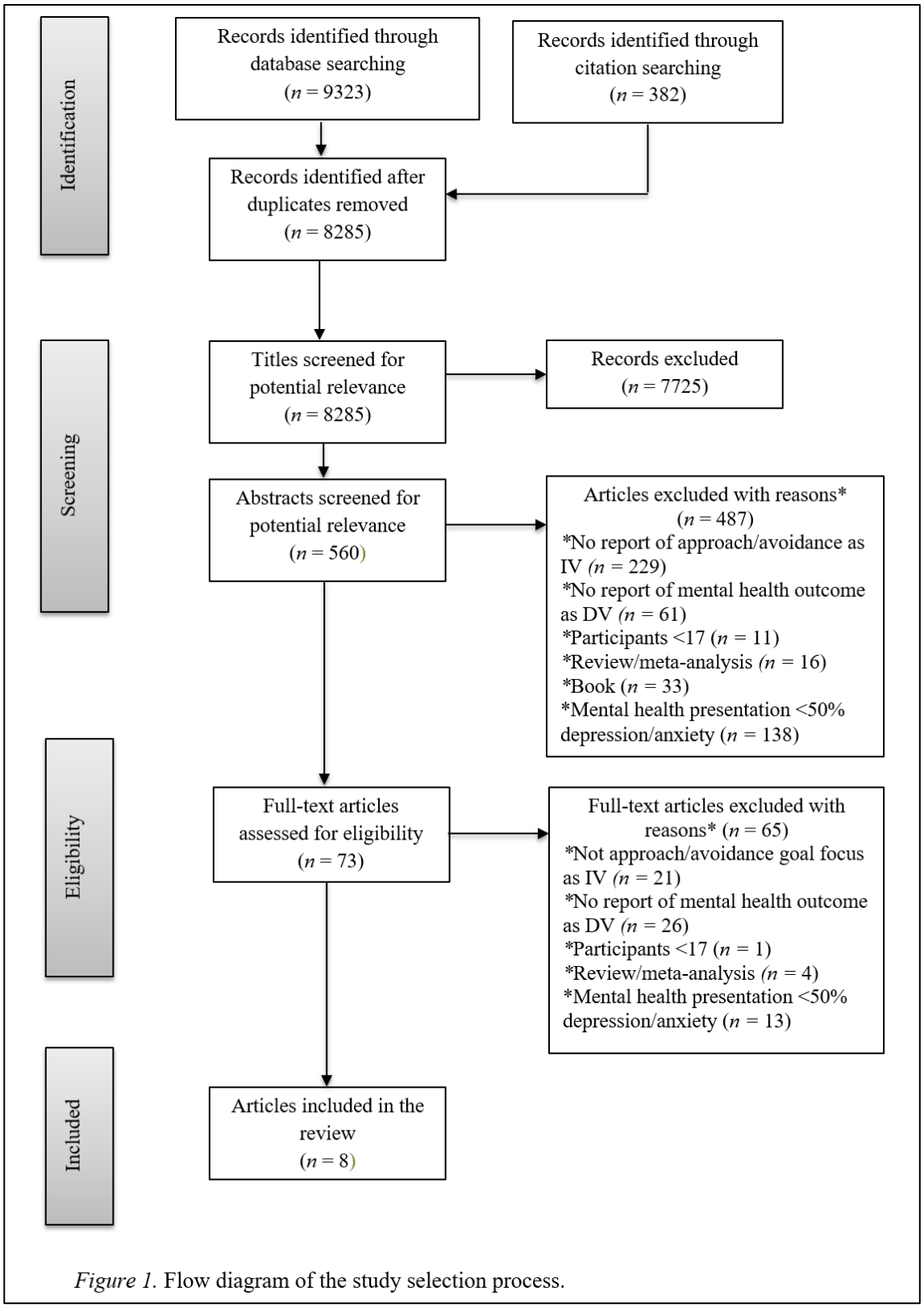

Figure 1. Flow diagram of the study selection process.

Screening of 382 references from the ancestry search identified 16 relevant records for full-text screening. Following full text screening 4 met all of the eligibility criteria. Five studies were excluded during full text screening, as, although there was a measure of well-being/mental health, the papers did not report on specific measures of

depression or anxiety. Two other excluded studies were removed because rather than focusing on approach or avoidance goal framing, one study focused on use of avoidant coping (Dekker & Lechner, 2005) and another focused on avoidant decision-making (Pittig, Alpers, Niles, & Craske, 2015).

Overall 8285 texts were screened and 8 papers were identified for inclusion in the review. Two papers reported multiple studies (Crocker, Canevello, Brienes, & Flynn, 2010; Gable, 2006), although one of the studies reported by Gable (2006) – Study 2 – did not meet the inclusion criteria. Therefore, 10 studies were identified as suitable for inclusion in the review. One of the papers was only available in German, therefore the study was reviewed using translation software to translate key data. The quality, methods, and main findings of all included studies are described below and in Figure 2 and Table 1.

Across the 10 final studies, sample sizes ranged from 64 to 657 (*Mdn* = 110.50). The total sample size was 2097. Participants in the studies were aged between 17 and 63 years (mean ages ranged from 18.08 to 46.00 years). All studies reported gender ratios and samples ranged between 55.00%-75.76% female and 24.24%-45.00% male. In 3 studies participants were allocated to a therapeutic intervention; including cognitive behavioural therapy (CBT) and an integrative form of psychotherapy.

3.1. Quality Appraisal. An independent assessor completed quality assessment of all non-translated studies (90%), blind to the primary author's quality ratings. Agreement was 'moderate' between the raters: $\kappa = .54$, (95% Cl), $p < .01$, according to the benchmarks suggested by Landis and Koch (1977). Disagreements were resolved through discussion until a consensus was agreed, increasing robustness of the quality appraisal. Through discussion it was agreed some items related to intervention (8 items) and follow-up (3 items) design and were not relevant for all studies, therefore such items are labelled as 'non-applicable' for the respective studies in Figure 2. Most of the

discrepancies in the inter-rater reliability were due to differences in the raters labelling of items deemed 'non-applicable', as one rater scored such items as non-applicable, whilst the other rated the items as '0' due to them not meeting the item criteria.

To fairly review quality the overall ratings were adjusted so that studies were scored as a proportional percentage calculated from applicable items within the total number of items. This allowed key components of all the studies to be compared more equitably from computed quality percentages (0-53% = poor, 54-71% = fair, 72-92% = good, >93% = excellent). Figure 2 shows how each study was coded with respect to aspects of methodological quality.

Quality of reporting was generally good, although only two of three intervention studies described the intervention(s) clearly and no intervention study reported attempts to measure adverse events. Implications of any possible harmful events may therefore, not have been fully considered. Only two of eight studies with follow-up reported the characteristics of patients lost to follow-up, and only four studies reported actual probability values. Two studies did not describe patient characteristics clearly, (e.g., no inclusion/exclusion criteria stated) and two studies did not report on random variability or principal confounders.

External validity was poor for all studies as no sample was clearly representative of the entire recruitment population and only one demonstrated that the intervention used was representative of that used in the source population. Risk of bias was rated as moderate, as all studies used appropriate statistical tests and valid and reliable measures.

Follow-up lengths were reported for four of the eight longitudinal studies. Only one study included results based on retrospective unplanned analyses. Only one of the three intervention studies evidenced intervention compliance. Two studies blinded assessors and no study blinded participants, but the design of many studies did not include intervention.

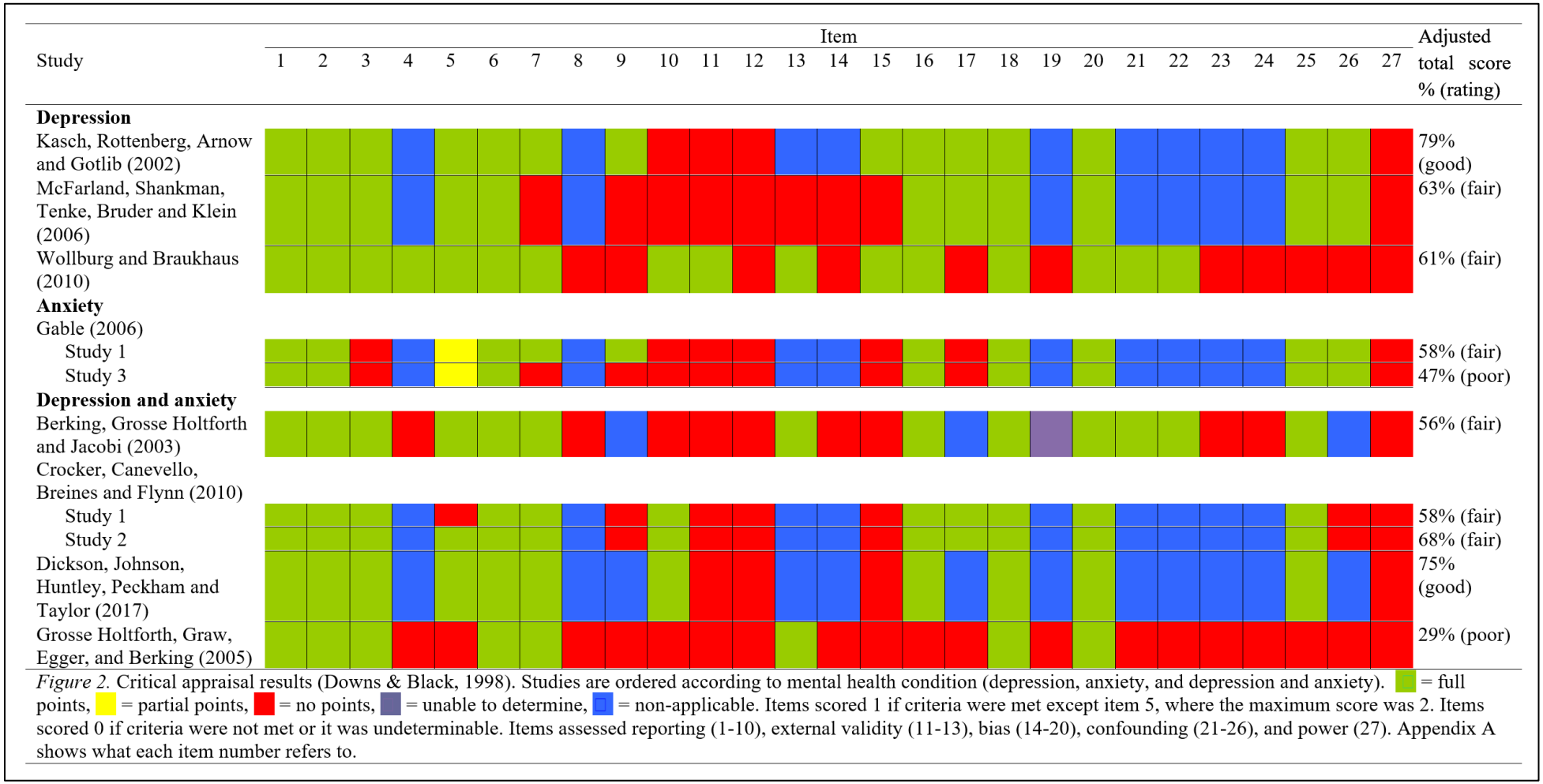

Figure 2. Critical appraisal results (Downs & Black, 1998). Studies are ordered according to mental health condition (depression, anxiety, and depression and anxiety). = full points, = partial points, = no points, = unable to determine, = non-applicable. Items scored 1 if criteria were met except item 5, where the maximum score was 2. Items scored 0 if criteria were not met or it was undeterminable. Items assessed reporting (1-10), external validity (11-13), bias (14-20), confounding (21-26), and power (27). Appendix A shows what each item number refers to.

Risk of confounding appeared moderate as most studies did not involve intervention groups and therefore items 21-24 were only applicable to the three intervention studies. Of the three intervention studies, two recruited participants from the same population and over the same time period for different intervention groups. Half of the studies including follow-up took in to account patients lost to follow-up a eight studies employed adequate adjustment for confounding. No study used randomisation to intervention or reported concealment of randomisation, as none wer randomised controlled trials.

No study explicitly reported statistical power. Due to limited reporting, the qua analysis may underestimate the power of included studies, however, this was deemed necessary to avoid overestimating study quality. Most studies reported a statistically significant relationship between approach/avoidance systems or goals and depression anxiety. However, due to the observational design of most studies the significant relationship between the variables was mainly correlational, not causal. Overall, 2 studies were identified as poor quality, 6 as fair quality and 2 as good quality.

3.2. Methods and findings of included studies. The main findings of the reviewed studies are discussed below in relation to the information presented in Tabl The findings are categorised by mental health presentation.

Depression. Kasch, Rottenberg, Arnow, and Gotlib (2002) found that reduced BAS-Reward Responsiveness (BAS-RR) and BAS-Drive (BAS-D) toward rewarding stimuli caused and/or maintained depression. Specifically, low scores on the BAS subscales were suggested to worsen the course of depression over 8-month follow-up McFarland, Shankman, Tenke, Bruder, and Klein (2006) similarly suggested that BA deficits predicted worse depression at 6-month follow-up. Lower BAS scores predict weekly Psychiatric Status Rating (PSR), time to recovery, number of major depressiv disorder (MDD) symptoms, and the likelihood of depression diagnosis at follow-up.

Table 1.

Study	Participants				Design	Measures		Findings	Effect size
	N	Age	Gender	Type of participant		Approach/ avoidance	Mental health		
Depression									
Kasch, Rottenberg, Arnow, and Gotlib (2002)	89	18-60 (DEP *M* = 34.6, Control *M* = 31.7)	68.54% female (*N* = 61)	Clinical group (DEP; *N* = 62) Control group (*N* = 27)	Longitudinal study	BIS/BAS-S	SCID GAF HDI BAI	BIS and BAS levels were stable across time for all participants. DEP participants reported lower BAS levels and higher BIS levels than controls. Within DEP group, lower BAS levels were associated with greater depression severity and predicted worse presentation at 8-months. BAS-RR and BAS-D subscales significantly predicted the course of depression e.g., depression symptoms (β = -.35, *t* (60) = -3.26, *p* < .01; β = -.32, *t* (60) = -2.59, *p* < .01) and status at Time 2 (β = .21, *p* < .05; β = .24, *p* < .05).	DEP: BIS d = .02; BAS-RR d = - 1.15; BAS-F d = -.72; BAS-D d = -.70 ANX: BIS d = -.20; BAS-RR d = -.17; BAS-F d = -.04; BAS-D d = -.04;
McFarland, Shankman, Tenke, Bruder, and Klein (2006)	67	18-63 (*M* = 34.64, *SD* = 9.24)	65.67% female (*N* = 44)	Clinical sample (MDD)	Longitudinal study	BIS/BAS-S	SCID LIFE Weekly PSRs	BAS-Total negatively predicted all outcome variables. Specifically lower levels of BAS-RR predicted diagnosis (*r* (63) = -.35, *p* < .01), average PSR (*r* (63) = -.29, *p* < .05) and number of MDD symptoms (*r* (63) = -.31, *p* < .05) at follow-up. BAS-D predicted diagnosis at follow-up (*r* (63) = -.33, *p* < .01) and average PSR (*r* (63) = -.26, *p* < .05). BAS-F predicted average PSR. BIS did not significantly predict any outcome variable.	BIS d = -.04; BAS total d = -.72
Wollburg and Braukhaus (2010)	657	*M* = 45.2	69.71% female (*N* = 458)	Clinical sample (DEP)	Uncontrolled pre-post study	Three therapeutic goals coded APP	BDI	Level of DEP was the same in both groups (APP and AVOID) at the start. Significant relationship between change in depression (BDI: *F* (1,190.62) = 4.44, *p* = .04) and goal attainment ratings (APP: *r* (655) = .40, *p* = .00;	Between group d = .18; Within group AVOID d = 1.16;

Study	Participants				Design	Measures		Findings	Effect size
	N	Age	Gender	Type of participant		APP/ AVOID	MH		
Anxiety									
Gable (2006)								Meta-analysis: APP goals were reliably associated with less loneliness and greater satisfaction with social bonds, whilst AVOID goals were associated with more relationship insecurity/anxiety, loneliness, and negative social attitudes.	APP d = .02; AVOID d = .61
Study 1	132	undergraduates >18	75.76% female (*N* = 100)	Non-clinical student sample	Longitudinal study	MMG NfAS FRS Social goals coded as APP or AVOID	UCLA Anxiety subscale in S-RAM SWLS BEAMs	At Time 1 AVOID goals were positively correlated with relationship anxiety and negative attitudes. APP goals did not predict Time 1 measures. APP goals viewed as more important at Time 1 were associated with Time 2 increases in social life satisfaction (β = .31, $p < .01$), decreases in loneliness (β = -.20, $p < .05$) and marginally to social attitudes. Time 1 AVOID goals were associated with Time 2 increases in ANX (β = .23, $p < .05$) and loneliness (β = -.23, $p < .05$).	ANX: APP d = -.08; AVOID d = .49
Study 3	73	*M* = 18.1 (*SD* = 1.1)	65.75% female (*N* = 48)	Non-clinical student sample	Cross-sectional study	SCG NfAS FRS	UCLA SWLS Anxiety subscale in S-RAM BEAMs	APP and AVOID goals highly correlated (r (73) = .78, $p < .001$). APP goals positively predicted positive attitudes toward social bonds (β = .48, $p < .05$); negatively predicted loneliness (β = -.43, $p < .05$). AVOID goals positively predicted loneliness (β = .42, $p < .05$), relationship anxiety (β = .40, $p < .05$), and negative attitudes toward social bonds (β = .43, $p < .05$). Whilst social motives of Hope for Affiliation and Fear of Rejection predicted social outcomes, social goals accounted for variance in all measures except loneliness, above and beyond the motives.	ANX: APP d = .36; AVOID d = .63 Loneliness: APP d = -.28; AVOID d = .10

Study	Participants				Design	Measures		Findings	Effect size
	N	Age	Gender	Type of participant		APP/ AVOID	MH		
Depression and anxiety									
Berking, Grosse Holtforth, and Jacobi (2003)	64	*M* = 46	73.44% female (*N* = 47)	Clinical sample (36% ANX, 18% DEP)	Controlled non-randomised pre-post study	FAMOS (IAAM)	VEV CGI Psy-BaDo BSS	Reduction on APP goal scales was negatively correlated with therapy outcomes, whereas reduction on AVOID goal scales was positively associated with therapy outcomes. Changes on the FAMOS scales in CBT illustrated a significant profile correlation of $r = .66$ (23), $p < .00$. Significant effects were found for AVOID scales and therapy success level (F (57, 55) = 7.53, $p <$ .01).	d = 1.76 (AVOID d = .43; APP d = .24)
Crocker, Canevello, Breines, and Flynn (2010) Study 1	199	*M* = 18.08	61.31% female (*N* = 122)	Non-clinical student sample	Longitudinal study	C /S-I GS	STAI CES-D	APP and AVOID framed compassionate goals both predicted decreased anxiety (β = -.26, p = .00; β = -.26, p = .00), dysphoria (β = -.21, p = .00; β = -.20, p = .01), and the distress composite (β = -.24, p = .00; β = -.22, p = .00) from pre to post-test. Both APP and AVOID framed self-image goals predicted increased anxiety (β = .15, p = .02; β = .17, p = .01), dysphoria, (β = .16, p = .03; β = .14, p = .05), and distress (β = .15, p = .02; β = .14, p = .03).	Compassionate goals ANX: APP d = -.10; AVOID d = -.04; DEP: APP d = -.10; AVOID d = -.04; Self-image goals ANX: APP d = .14; AVOID d = .45 DEP: APP d = .14; AVOID d = .45
Study 2	115 couples (230 participants)	18-21 (*M* = 18.1, *SD* = .36)	74.78% female couples (*N* = 86)	Non-clinical student sample	Longitudinal study	C /S-I GS	STAI CES-D MSPSS (all discussed as measures of 'distress')	Due to high correlation APP and AVOID framed goals were averaged across compassionate (r = .89) and self-image (r = .70) goals to predict change in distress. APP *and* AVOID compassionate goals predicted decreased distress (pr = -.20, p = .00). APP *and* AVOID self-image goals marginally predicted increased distress (pr = .13, p = .05). Findings confirmed across same-week, subsequent-week, and pre-test-to-post-test analyses. Findings for compassionate goals were maintained after controlling for several known risk factors e.g., chronic rumination.	APP/AVOID compassionate goals: d = -.47; APP/AVOID self-image goals: d = .56

Study	Participants				Design	Measures		Findings	Effect size
	N	Age	Gender	Type of participant		APP/ AVOID	MH		
Dickson, Johnson, Huntley, Peckham, and Taylor (2017)	510 (UK = 231, US = 279)	UK *M* = 21.38, US *M* = 20.16	69.02% female (*N* = 352)	Non-clinical student sample	Cross-sectional study	BIS/BAS-S	MASQ-AA MASQ-AD CGS 7U7D (Mania)	BIS scores correlated negatively with mania risk (r (508) = -.15, $p < .05$) but did not correlate with ANX or DEP in the multivariate model. BAS scores correlated negatively with DEP (r (508) = -.51, $p < .05$) and positively with mania risk (r (508) = .36, $p < .05$), but were unrelated to ANX. High CGS correlated with higher DEP (r (508) = .24, $p < .05$) but not to ANX or mania risk. Urgency correlated with higher ANX, DEP, and mania risk.	ANX: BIS-Anxiety d = .41; BIS-Fear d = .22; BAS-RR d = -.04; BAS-F d = .18; BAS-D d = .06 DEP: BIS-Anxiety d = .41; BIS-Fear d = .41; BAS-RR d = -.47; BAS-F d = -.39; BAS-D d = -.45
Grosse Holtforth, Graw, Egger, and Berking (2005)	76	17-62 (*M* = 38, *SD* = 11)	55% female (*N* = 42)	Clinical sample (32% ANX, 33% DEP)	Uncontrolled pre-post study	IAAM	BSI IIP-D VEV-VW GAS	AVOID goal intensity decreased over the course of therapy. Pre-therapy AVOID motivation was not related to MH measures. Reduction in AVOID goal intensity was significantly correlated to reduction of interpersonal problems (IIP; r (67) = .35, $p < .01$), increase in optimism (VEV; r (60) = .26, $p < .05$), and goal attainment (GAS; r (65) = .22, $p < .05$). No correlation with symptom reduction (BSI; r (65) = .14, $p > .05$). Reduction of AVOID goal intensity was strongly associated with all MH measures for DEP patients (IIP, VEV, GAS and BSI significant at $p < .05$), but only marginally for ANX patients. AVOID goal intensity for ANX only correlated with an increase in optimism (r (60) = .39, $p < .05$).	ANX AVOID: BSI d = .43; IIP-D d = .04 DEP AVOID: BSI d = 1.07; IIP-D d = 1.67

Note. MH = mental health, ANX = anxiety, DEP = depression, MDD = major depressive disorder, APP = approach, AVOID = avoidance, d = Cohen's d, CBT = cognitive behaviour therapy, ACT = acceptance commitment therapy. STAI = Spielberger Trait Anxiety Scale (Spielberger, Vagg, Barker, Donham, & Westberry, 1980), CES-D = Center for Epidemiological Studies Depression Inventory (Radloff, 1977), C/S-I GS = Compassionate and self-image goals scale (Crocker & Canevello, 2008), MSPSS = Multidimensional Survey of Perceived Social Support (Zimet, Powell, & Farley, 1990), MASQ = Mood and Anxiety Symptoms Questionnaire – short form - AA = anxious arousal/AD= anhedonic depression (Watson, Clark, Weber, & Assenheimer, 1995a; Watson et al., 1995b), 7U7D = 7 up 7 down (Youngstrom, Murray, Johnson, & Findling, 2013), IAAM = Inventory of

Approach and Avoidance Goals (German: Fragebogen zur Analyse Motivationaler Schemata [FAMOS]: Grosse Holtforth & Grawe, 2000; 2002a; 2002b), BSI = Brief Symptom Inventory (Franke, 2000), VEV = [Veranderung des Erlebens und Verhaltens] questionnaire for recording changes in experience and behaviour (Zielke & Kopf-Mehnert, 1979), VEV-VW = revised VEV (Willutzki, 1999; Zielke, 1978), GAS = goal attainment scaling (Grosse Holtforth et al., 2005), CGS = Conditional goal setting (Hadley & MacLeod, 2010), BIS/BAS-S = Behavioural inhibition system/behavioural activation system scales (Carver & White, 1994)/RR = Reward Responsiveness subscale, D = Drive subscale, F = Fun subscale, K-INK = Incongruence Questionnaire-Short Version (Grosse Holtforth & Grawe, 2003; Grosse Holtforth, Grawe, & Tamcan, 2004), IIP-D = Inventory of Interpersonal Problems-circumplex version (Horowitz, Strauss, & Kordy, 1994), GAF = Global Assessment of Functioning Scale (Endicott, Spitzer, & Fleiss, 1975; Endicott, Spitzer, Fleiss, & Cohen, 1976), SCID = Structured Clinical Interview for DSM–IV (First, Spitzer, Gibbon, & Williams, 1996), HDI = Hamilton Depression Inventory (Hamilton, 1960; Reynolds & Kobak, 1995), BAI = Beck Anxiety Inventory (Beck, Epstein, Brown, & Steer, 1988), BDI = Beck Depression Inventory (Beck, Ward, Mendelson, Mock, & Erbaugh, 1961; German version: Hautzinger, Bailer, Worrall, & Keller, 2000), LIFE = Longitudinal Interval Follow-up Evaluation (Keller, Lavori, Friedman, & Nielson, 1987), PSRs = psychiatric status ratings (Klein, Schwartz, Rose, & Leader, 2000), NfAS = Need for Affiliation scale (Jackson, 1974), FRS = Fear of Rejection scale (Mehrabian, 1976), S-RAM = self-report attachment style measure (Brennan, Clark, & Shaver, 1998), SWLS = Satisfaction with Life scale (Diener, 1996), SCG = Social Goals Questionnaire (Elliot & Sheldon, 1997), MMG = Multi-Motive Grid technique (Schmalt, 1999), BEAMs = Bivariate Evaluations and Ambivalence Measures (Cacioppo, Gardner, & Berntson, 1997), UCLA = Loneliness scale (Russell, Peplau, & Cutrona, 1980), CGI = Clinical global impression (Collegium Internationale Psychiatriae Scalarum [CIPS], 1977), Psy-BaDo = [Praktische Qualitätssicherung in der Psychotherapie] Practical quality assurance in psychotherapy (Heuft & Senf, 1998), BSS = [Beeinträchtigungs-Schwere-Score] symptom severity score (Schepank, 1995).

Wollburg and Braukhaus (2010) found that both approach and avoidance framed goals were related to changes in depression, but not goal attainment. However, goals framed in avoidance terms were found to be associated with less symptom improvement and higher levels of depression at the end of therapy.

Kasch et al. (2002) and McFarland et al. (2006) demonstrated medium to large effects of the BAS, but not BIS on the course of depression. In contrast, Wollburg and Braukhaus (2010) found large (within group) effect sizes for both avoidance and approach goals. Therefore it could be concluded that reduced BAS orientation and lack of approach goals was associated with worse depression. There was also marginal evidence that framing goals in avoidance terms was linked to less improvement in depression.

Anxiety. Gable (2006, study 1) found that framing goals in terms of avoidance was associated with increased anxiety and loneliness, whilst framing goals in approach terms was associated with improved satisfaction with social life and less loneliness. Gable (2006, study 3) found that avoidance framed goals were associated with increased relationship insecurity/anxiety, loneliness, and negative social attitudes, whilst goals framed in terms of approach were associated with less loneliness and greater satisfaction with social bonds. Gable (2006, study 1 & 3) found weak effects for approach goals but a medium effect size for avoidance goals. Therefore suggesting that in relation to anxiety, framing goals in terms of avoidance leads to increased anxiety.

Studies focusing on anxiety and depression. Berking, Grosse Holtforth, and Jacobi (2003) found that change on avoidance goal scales was positively associated with therapy outcome indicators. This means that weaker avoidance goal-framing was significantly associated with better therapy outcomes. Approach goal-framing was negatively correlated with therapy outcomes but this finding was not significant. In both of the studies reported by Crocker et al. (2010), approach and avoidance framed

compassionate goals predicted decreased anxiety, dysphoria, and distress. However, approach and avoidance framed self-image goals predicted increased anxiety, dysphoria, and distress. Dickson, Johnson, Huntley, Peckham, and Taylor (2017) found that higher BAS scores were associated with reduced depression and increased mania risk. However, neither BIS nor BAS orientation was related to anxiety. Grosse Holtforth, Graw, Egger, and Berking (2005) found that the strength or intensity of pre-therapy avoidance framed goals was not related to changes in anxiety and depression. However, for participants with depression, reduction of avoidance motivation across therapy was associated with a reduction in interpersonal problems, increased optimism, and improved goal attainment. For individuals with anxiety, reduction in avoidance motivation was only related to increased optimism. The findings from Grosse et al. (2005) contradict findings from the other studies, however this may be a reflection of the study being rated as lower quality than most other studies included in the current review (quality rated as poor at 29%). Generally, small to medium effects were evidenced across all studies focusing on anxiety and depression, with slightly greater effects demonstrated for depression and avoidance.

The impact of confounding variables and identification of mediators and moderators. Seven studies analysed the role of demographic variables in the relationship between goal-framing and depression/anxiety; gender differences were found in three of these studies (Dickson et al., 2017; Gable, 2006, study 1 & 3). Crocker et al. (2010) study 2 analysed multiple goal-setting covariates but only having 'clear goals' explained the link between approach/avoidance compassionate goals and distress; no covariate was associated with approach/avoidance self-image goals.

Gable (2006, study 1 & 3) found that approach motives increased exposure to positive social events, which mediated the link with anxiety; whilst avoidance motives increased reactivity to events, which mediated relationship with negative events.

Crocker et al. (2010, study 1 & 2 illustrated that approach and avoidance compassionate goals predicted increase in support given and received. Increased support given mediated the relationship between goals and reduced distress.

Three intervention studies identified psychotherapy as a moderator of depression/anxiety. Berking et al. (2003) and Wollburg and Braukhaus (2010) suggested that therapeutic interventions such as CBT could influence clinically relevant goals, specifically reducing the intensity of goal-framing and improving mental health. Grosse Holtforth et al. (2005) found the same results for an integrative form of psychotherapy.

4. Discussion

The aim of the literature review was to understand the relationship between goal-framing and depression/anxiety. The findings of the review suggested that framing goals (e.g., in terms of approach versus avoidance) is associated with depression and anxiety. Overall, studies focusing on depression found that a lack of BAS orientation or not framing goals in approach terms predicted the course of depression, but (with one exception: Wollburg & Braukhaus, 2010) framing goals in avoidance terms did not relate to depression. Studies focusing on anxiety also found that framing goals in terms of approach was associated with less loneliness, greater satisfaction with social bonds, and had the potential to reduce anxiety. Whilst there was poor association found between avoidance goals and depression, framing goals in terms of avoidance was associated with increased anxiety, loneliness, and negative social attitudes. Studies focusing on depression and anxiety found mixed results. Most found that BAS orientation and framing goals in approach terms was associated reduced depression and distress, whilst framing goals in avoidance terms and BIS orientation was associated with increased depression and distress (Berking et al., 2003; Dickson et al., 2017). However, Crocker et al. (2010) found that framing compassionate goals in terms of both

approach and avoidance was related to reduced depression and anxiety. Grosse Holtforth et al. (2005) also found no link between pre-therapy approach or avoidance goal-framing intensity and depression/anxiety, but the lack of findings may be related to the poor quality of the Grosse et al. (2005) study.

The inclusion of measures of BIS/BAS (Carver & White, 1994) in the present review helped to identify processes involved in the pursuit of approach versus avoidance framed goals and provided an additional way to explore the relationship between goal-framing and depression/anxiety (Dickson et al., 2017; Kasch et al., 2002; McFarland et al., 2006). The findings highlighted less responsiveness to reward and a lack of motivational drive to pursue rewarding stimuli as key processes in maintaining depression.

The range of effect sizes across studies suggests moderate practical significance for orientation toward BAS and use of approach framed goals for depression and moderate to large effects and practical significance for BIS orientation and avoidance framed goals for anxiety. However, overall variance in effect sizes in studies suggests overall low to moderate practical significance of findings.

One important question is *why* the way that goals are framed (i.e., in terms of approach and / or avoidance) is related to changes in depression/anxiety. One possibility is that framing goals in avoidance terms involves greater focus on negative outcomes (Elliot & Sheldon, 1997), or less tangible outcomes (Carver, 2006; Heimpel et al., 2006) that creates ambiguity. Also, findings may be linked to depressed individuals being more pessimistic about control over goal attainment (Dickson et al., 2011), which leads to fewer approach goals being set and disengagement in goals (Dickson et al., 2016). However, the tangibility, self-efficacy or attainability of goals was not evidenced as direct mediating factors in this review. Instead the current review highlighted other confounders, mediators and moderators that were explored in the studies.

Did the primary studies identify potential confounds and control for these? Primary studies identified specific confounders in analysis such as gender (Crocker et al., 2010; Dickson et al., 2017; Gable, 2006) and goal clarity (Crocker et al., 2010) and controlled for such confounders in main analysis. Covariate analysis supported previous research indicating an association between goal specificity (Locke & Bryan, 1969) and mental health status. Such findings may be related to more highly anxious individuals being less specific in approach goal formation (Dickson & MacLeod, 2004b; Dickson & Moberly, 2013).

Did the primary studies identify factors that explain (or mediate) the relationship between goal-framing and depression/anxiety? No mediator of the relationship between goal-framing and mental health was identified across all studies. Four studies explored the role of social variables and found that the way that goals are framed is associated with exposure and reactivity to positive social events and social support given, which in turn reduces distress (Crocker et al., 2010, study 1 & 2; Gable, 2006, study 1 & 3). Social support has previously been found to be beneficial to mental health and well-being (Berkman & Glass, 2000; House, Landis, & Umberson, 1988; Kawachi & Berkman, 2001); specifically, in improvements in depression and anxiety (Sangalang & Gee, 2012). The mediating effect of social support has been suggested to be due to support being tangible, enhancing effective coping, and increasing self-esteem (Berkman & Glass, 2000).

Did the primary studies identify factors that influence (or moderate) the relationship between goal-framing and depression/anxiety? Therapeutic intervention was suggested to moderate the relationship between goal-framing and depression/anxiety by reducing the intensity of approach/avoidance goals (Berking et al., 2003; Grosse Holtforth et al., 2005; Wollburg & Braukhaus, 2010). However, non-

intervention studies identified similar patterns in between approach/avoidance goals and mental health, which challenges the moderating role of therapy.

4.1. Recommendations for future research. In future, more experimental studies would be beneficial to manipulate the way that goals are framed (i.e., in terms of approach or avoidance) and then examine the impact of so doing on depression and anxiety. This would enable researchers to draw conclusions as to the potential causal influence of goal-framing on mental health status. Second, although some of the studies included follow-up, further longitudinal studies are also necessary to illustrate longer-term findings at multiple time points. Third, there was a relatively small number of papers in this review and there were not enough to permit meta-analysis. However, the findings from this review illustrate the advantages of exploring this area of literature further and there could be value in carrying out a meta-analysis to enable researchers to estimate the likely size of the relationships across the primary studies, when further studies have been completed. Finally, it may also be useful to explore the relationship between framing of goals (i.e., in terms of approach versus avoidance) and other mental health presentations (e.g., eating disorders, psychosis). Researchers could investigate if framing goals in approach terms similarly predicts improved mental health whilst framing in avoidance terms predicts worse mental health.

4.2. Clinical Implications. The findings of this review could inform clinical practice, as therapists could consider the way that patients frame their goals and/or their BIS/BAS orientation prior to therapeutic interventions and then guide individuals' to frame their goals or orient themselves in a way that might benefit therapy outcomes. Specifically, the present findings suggest that individuals with depression might be guided to frame goals from an approach orientation and individuals with anxiety might be guided to reduce use of avoidance framing in goals to potentially reduce anxiety. As change in goal-framing intensity/motivation across interventions was found to be a

predictor of mental health status, it may also be beneficial to track changes in the way that goals are framed during psychotherapy. In addition, approach and avoidance framing could be used to increase exposure and reactivity to social events and support.

4.3. Limitations. A limitation of this review was the small number of papers identified and the different measures used between papers to evaluate depression/anxiety in each study. Most studies used primary measures of depression and anxiety symptomology and diagnoses, but many also used associated measures of interpersonal problems, ambivalence, and social interactions. It was necessary to determine that the focus of relevant primary measures was comparable in reviewing the findings, however studies reached similar conclusions across measures.

Two studies that purported to only focus on anxiety or depression reported comorbidity that was not controlled for in the analysis (e.g., McFarland et al., 2006; Wollburg & Braukhaus, 2010), which suggested additional confound. This may be problematic because it may have introduced bias or increased variance. Also, Crocker et al. (2010) study 2 and Gable (2006) study 3 found high correlation between approach and avoidance framed goals, suggesting that it may be difficult to identify the independent relationship between each type of goal-framing and depression/anxiety.

Although Downs and Black (1990) is a well-established quality appraisal tool, it had to be adapted for use in the present review by amending item 27 (power) and using a proportional quality score to allow key components of all the studies to be compared more equitably. Total scores/percentages only provided a crude estimate of quality. In order to go beyond the appraisal score the tool was used to complete between-study comparisons using qualitative explanations consistent with previous research (Larson et al., 2013; Samoocha et al., 2010).

Finally, using a systematic approach and inclusion of non-English papers enabled identification of 9323 citations and reduced the risk of missing relevant papers.

However, as only one person conducted the search, there was increased risk of human error in determining study relevance. The current review focused on an adult population, however the review might have been strengthened by including studies with younger samples (<17 years); therefore considering the relationship between goal-framing and anxiety/depression across the age range.

4.4. Conclusions. Framing goals in approach terms or an orientation toward the BAS predicted the course of depression. Specifically, increased use of approach framed goals and BAS orientation was marginally associated with reduced depression. For studies focusing on individuals with anxiety, framing goals in terms of avoidance or greater BIS orientation was associated with increased anxiety, whilst BAS orientation and framing goals in terms of approach was associated with potential anxiety reduction. However, studies looking at samples or measures of both anxiety and depression found limited associations between goal-framing and anxiety. Two studies found a high correlation between goals framed in terms of approach and avoidance and one study proposed that depression and anxiety are not related to baseline approach or avoidance goals, but instead are associated with the change in goal intensity over the course of therapy. Further experimental and longitudinal research is needed to clarify whether either goal orientation is causally associated with long-term mental health status, and thus whether manipulating the way that goals are framed might serve as a therapeutic intervention.

References

American Psychiatric Association. (2013). *Diagnostic and statistical manual of mental disorders* (5th ed.). Washington, DC: American Psychiatric Publishing.

Bavelas, J., & Lee, E. S. (1978). Effect of goal level on performance: A trade-off or quantity and quality. *Canadian Journal of Psychology, 32*, 219-240. doi:10.1037/h0081692

Beck, A. T., Epstein, N., Brown, G., & Steer, R. A. (1988). An inventory for measuring clinical anxiety: Psychometric properties. *Journal of Consulting and Clinical Psychology, 56,* 893–897. doi:10.1037//0022-006x.56.6.893

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. doi:10.1001/archpsyc.1961.01710120031004

Berking, M., Holtforth, M. G., & Jacobi, C. (2003). Changes in clinically relevant goals and therapy outcome: A study with inpatients undergoing cognitive behavioral therapy. *Psychotherapie Psychosomatik Medizinische Psychologie, 53,* 171-177. doi:10.1055/s-2003-38008

Berkman, L. F., & Glass, T. (2000). Social integration, social networks, social support and health. In L. F. Berkman & I. Kawachi (Eds.), *Social Epidemiology* (pp. 137-173). New York, NY: Oxford University Press.

Brady, F. (2014). *Early in-session predictors of response to trauma-focused cognitive therapy* (Unpublished doctoral dissertation). University College London, London.

Brennan, K. A., Clark, C. L., & Shaver, P. R. (1998). Self-report measurement of adult attachment: An integrative overview. In J. A. Simpson & W. S. Rholes (Eds.), *Attachment theory and close relationships* (pp. 46–76). New York, NY: The Guilford Press.

Cacioppo, J. T., Gardner, W. L., & Berntson, G. G. (1997). Beyond bipolar

conceptualizations and measures: The case of attitudes and evaluative space. *Personality and Social Psychology Review*, *1,* 3–25. doi:10.1207/s15327957pspr0101_2

Carver, C. S. (2006). Approach, avoidance, and the self-regulation of affect and action. *Motivation and Emotion*, *30,* 105-110. doi:10.1007/s11031-006-9044-7

Carver, C. S., & Scheier, M. F. (1990). Origins and functions of positive and negative affect: A control-process view. *Psychological Review, 97,* 19-35. doi:10.1037//0033-295x97.1.19

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

Carver, C. S., & White, T. L. (1994). Behavioral-inhibition, behavioral activation, and affective responses to impending reward and punishment - the BIS BAS scales. *Journal of Personality and Social Psychology, 67,* 319–333. doi:10.1037/0022-3514.67.2.319.

Chu, C., Wei, H., Zhu, W., Shen, Y., & Xu, Q. (2017). Decreased prostaglandin D2 levels in major depressive disorder are associated with depression like behaviors. *International Journal of Neuropsychopharmacology, 20,* 731–739. doi:10.1093/ijnp/pyx044

Coats, E., Janoff-Bulman, R., & Alpert, N. (1996). Approach versus avoidance goals: Differences in self-evaluation and well-being. *Personality and Social Psychology Bulletin*, *22,* 1057-1067. doi:10.1177/01461672962210009

Collegium Internationale Psychiatriae Scalarum. (Eds.). (1977). *Internationale Skalen für Psychiatrie.* Weinheim, Germany: Belz.

Crocker, J., & Canevello, A. (2008). Creating and undermining social support in communal relationships: The role of compassionate and self-image goals. *Journal of Personality and Social Psychology, 95,* 555–575. doi:10.1037/0022-

3514.95.3.555

Crocker, J., Canevello, A., Brienes, J. G., & Flynn, H. (2010). Interpersonal goals and change in anxiety and dysphoria in first-semester college students. *Journal of Personality and Social Psychology, 98*, 1009-1024. doi:10.1037/a0019400

Dalgleish, T., Golden, A-M. J., Feldman Barrett, L., Au Yeung, C., Murphy, V., Tchanturia, K.,…Watkins, E. (2007). Reduced specificity of autobiographical memory and depression: The role of executive control. *Journal of Experimental Psychology: General*, *136,* 23-42. doi:10.1037/0096-3445.136.1.23

Deeks, J. J., Dinnes, J., D'Amico, R., Sowden, A. J., Sakarovitch, C., Song, F.,…Altman, D. G. (2003). Evaluating non-randomised intervention studies. *Health Technology Assessment*, *7,* 1-173. doi:10.3310/hta7270

Dekker, H., & Lechner, L. (2005). The relationship between coping style, glycaemic control and depression in people with diabetes. *Gedrag & Gezondheid, 33*, 305-317.

Dickson, J. M. (2006). Perceived consequences underlying approach goals and avoidance goals in relation to anxiety. *Personality and Individual Differences, 41,* 1527-1538. doi:10.1016/j.paid.1006.06.005

Dickson, J. M., & MacLeod, A. K. (2004a). Anxiety, depression and approach and avoidance goals. *Cognition & Emotion*, *18,* 423-430. doi:10.1080/02699930341000013

Dickson, J. M., & MacLeod, A. K. (2004b). Approach and avoidance goals and plans: Their relationship and depression. *Cognitive Therapy and Research*, *28,* 415-432. doi:10.1023/b:cotr.0000031809.20488.ee

Dickson, J. M., Johnson, S., Huntley, C. D., Peckham, A., & Taylor, P. J. (2017). An integrative study of motivation and goal regulation processes in subclinical

anxiety, depression and hypomania. *Psychiatry Research, 256*, 6-12. doi:10.1016/j.psychres.2017.06.002

Diener, E. (1996). Traits can be powerful, but are not enough: Lessons from subjective well-being. *Journal of Research in Personality, 30,* 389–399. doi:10.1006/jrpe.1996.0027

Elliot, A. J. (1999). Approach and avoidance motivation and achievement goals. *Educational Psychologist*, *34,* 169-189. doi:10.1207/s15326985ep3403_3

Elliot, A. J. (2008). *Handbook of approach and avoidance motivation.* East Sussex, UK: Psychology Press, Taylor & Francis Group.

Elliot, A. J. (2010). Approach and avoidance motivation and achievement goals. *Education Psychologist, 34,* 169-189. doi:10.1207/s15326985ep3403

Elliot, A. J., & Sheldon, K. (1997). Avoidance achievement motivation: A personal goals analysis. *Journal of Personality and Social Personality, 73,* 171-185. doi:10.1037//0022-3514.73.1.171

Elliot, A. J., Sheldon, K., & Church, M. (1997). Avoidance personal goals and subjective well-being. *Personality and Social Psychology Bulletin*, *23,* 915-927. doi:10.1177/0146167297239001

Endicott, J., Spitzer, R. L., & Fleiss, J. L. (1975). Mental Status Examination Record (MSER): Reliability and validity. *Comprehensive Psychiatry, 16,* 285–301. doi:10.1016/0010-440x(75)90055-3

Endicott, J., Spitzer, R. L., Fleiss, J. L., & Cohen, J. (1976). The Global Assessment Scale: A procedure for measuring overall severity of psychiatric disturbance. *Archives of General Psychiatry, 33*, 766–771. doi:10.1001/archpsyc.1976.01770060086012

Erez, M., & Zidon, I. (1984). Effect of goal acceptance on the relationship of goal difficulty to performance. *Journal of Applied Psychology*, *69,* 69-78. doi:10.1037//0021-9010.69.1.69

First, M. B., Spitzer, R. L., Gibbon, M., & Williams, J. B. (1996). *Structured Clinical Interview for DSM–IV*. Washington, DC: American Psychiatric Association.

Franke, G. H. (2000). *Brief Symptom Inventory von L. R. Derogatis (Kurzform der SCL-90-R) - German version.* Gottingen, Germany: Beltz.

Gable, S. L. (2006). Approach and avoidance social motives and goals. *Journal of Personality, 74*, 175-222. doi:10.1111/j.1467-6494.2005.00373.x

Gillet, N., Lafreniere, M. A., Vallerand, R. J., Huart, I., & Fouquereau, E. (2014). The effects of autonomous and controlled regulation of performance-approach goals on well-being: A process model. *British Journal of Social Psychology, 53,* 154-174. doi:10.1111/bjso.12018.

Gollwitzer, P. M., & Moskowitz, G. B. (1996). Goal effects on action and cognition. In E. Higgins & A. W. Kruglanski (Eds.), *Social psychology: Handbook of basic principles* (pp. 351-399). New York, NY: Guilford Press.

Grawe, K. (2004). *Psychological therapy*. Toronto, ON: Hogrefe & Huber.

Grawe, K. (2007). *Neuropsychotherapy: How the Neurosciences Inform Effective Psychotherapy*. East Sussex, UK: Psychology Press, Taylor and Francis Group.

Grosse Holtforth, M. (2008). Avoidance motivation in psychological problems and psychotherapy. *Psychotherapy Research*, *18,* 147-159. doi:10.1080/10503300701765849

Grosse Holtforth, M., & Grawe, K. (2000). Fragebogen zur Analyse Motivationaler Schemata (FAMOS) [Questionnaire for the Analysis of Motivational Schemas. (FAMOS)]. *Zeitschrift fur Klinische Psychologie und Psychotherapie*, *29,* 170-179. doi:10.1026//0084-5345.9.3.170

Grosse Holtforth, M., & Grawe, K. (2002a). Bern inventory of treatment goals: Part 1: Development and first application of a taxonomy of treatment goal themes. *Psychotherapy research, 12,* 79-99. doi:10.1080/713869618

Grosse Holtforth, M., & Grawe, K. (2002b). *Fragebogen zur Analyse Motivationaler Schemata (FAMOS)- Handanweisung [Questionnaire for the Analysis of Motivational Schemas – Manual]*. Gottingen, Germany: Hogrefe.

Grosse Holtforth, M., & Grawe, K. (2003). Der Inkongruenzfragebogen (INK) Ein Messinstrument zur Analyse motivationaler Inkongruenz [The Incongruence Questionnaire (INK) an assessment tool for the analysis of motivational incongruence]. *Zeitschrift fur Klinische Psychologie und Psychotherapie, 32,* 315-323. doi:10.1026//1616-3443.32.4.315

Grosse Holtforth, M., Grawe, K., Egger, O., & Berking, B. (2005). Reducing the dreaded: change of avoidance motivation in psychotherapy. *Psychotherapy Research*, *15,* 261-271. doi:10.1080/10503300512331334968

Grosse Holtforth, M., Grawe, K., & Tamcan, O. (2004). *Der Inkongruenzfragebogen (INK) Handanweisung [The Incongruence Questionnaire (INK) manual]*. Gottingen, Germany: Hogrefe.

Hadley, S. A., & MacLeod, A. K. (2010). Conditional goal-setting, personal goals and hopelessness about the future. *Cognition and Emotion, 24,* 1191–1198. doi:10.1080/02699930903122521.

Hamilton, M. (1960). A rating scale for depression. *Journal of Neurology, Neurosurgery, & Psychiatry, 23,* 56–61. doi:10.1136/jnnp.23.1.56

Hautzinger, M., Bailer, M., Worrall, H., & Keller, F. (2000). *Beck-Depressions-Inventar (BDI): Testhandbuch* (3. Aufl.). *[Beck Depression Inventory: Test guide* (3rd ed.)*]*. Bern, Germany: Huber.

Heimpel, S. A., Elliot, A. J., & Wood, J. V. (2006). Basic personality dispositions, self-esteem, and personal goals: an approach-avoidance analysis. *Journal of Personality*, *74,* 1293-1320. doi:10.1111/j.1467-6494.2006.00410.x

Heuft, G., & Senf, W. (1998). *Praktische Qualitätssicherung in der Psychotherapie: Das Handbuch zur Psy-BaDo.* Stuttgart, Germany: Thieme.

House, J. S., Landis, K. R., & Umberson, D. (1988). Social relationships and health. *Science, 241,* 540-545. doi:10.1126/science.3399889

Horowitz, L. M., Strauss, B., & Kordy, H. (1994). *Inventar zur Erfassung Interpersonaler Probleme (IIP-D) [Inventory of Interpersonal Problems (IIP-D)]*. Weinheim, Germany: Beltz.

Jackson, D. N. (1974). *Personality research form manual.* Goshen, NY: Research Psychologists Press.

Kaplan, R., & Rothkopf, E. Z. (1974). Instructional objectives as directions to learners: Effect of passage length and amount of objective-relevant content. *Journal of Educational Psychology*, *66*, 448-456. doi:10.1037/h0036505

Kasch, K. L., Rottenberg, J., Arnow, B. A., & Gotlib, I. H. (2002). Behavioral activation and inhibition systems and the severity and course of depression. *Journal of Abnormal Psychology, 111*, 589-597. doi:10.1037//0021-843x.111.4.589

Kawachi, I., & Berkman, L. F. (2001). Social ties and mental health. *Journal of Urban Health: Bulletin of the New York Academy of Medicine, 78,* 458-467. doi:10.1093/jurban/78.3.458

Keller, M. B., Lavori, P. W., Friedman, B., & Nielsen, E. (1987). The longitudinal interval follow-up evaluation: A comprehensive method for assessing outcome in prospective longitudinal studies. *Archives of General Psychiatry*, *44,* 540–548. doi:10.1001/archpsyc.1987.01800180050009

Kirsch, I. (1978). Tangible self-reinforcement in self directed behavior modification projects. *Psychological Reports, 43*, 455-461. doi:10.2466/pr0.1978.43.2.455

Klein, D. N., Schwartz, J. E., Rose, S., & Leader, J. B. (2000). Five-year course and outcome of dysthymic disorder: A prospective, naturalistic follow-up study. *The American Journal of Psychiatry*, *157,* 931–939. doi:10.1176/appi.ajp.157.6.931

Larson, J. L., Vos, C. M., & Fernandez, D. (2013). Interventions to increase physical activity in people with COPD: systematic review. *Annual Review of Nursing Research*, *31,* 297-326. doi:1891/0739-6686.31.297

Latham, G. P., & Arshoff, A. S. (2015). Planning: A mediator in goal-setting theory. In M. D. Mumford & M. Frese (Eds.), *The psychology of planning in organizations: Research and applications* (pp. 89-104). New York, NY: Routledge.

Latham, G. P., & Locke, E. A. (1975). Increasing productivity with decreasing time limits: A field replication of Parkinson's Law. *Journal of Applied Psychology, 60,* 524-526. doi:10.1037/h0076916

Lewin, K. (1926). Vorsatz, Wille und Bedürfnis [Intention, will, and need]. *Psychologische Forschung*, *7,* 330-385. doi:10.1007/bf02424365

Lewin, K., Dembo, T., Festinger, I. A., & Sears, P. S. (1944). Level of aspiration. In J. M. Hunt (Ed.). *Personality and the behavior disorders* (pp. 333-178). New York, NY: Ronald Press.

Locke, E. A. (1968). Toward a theory of task motivation and incentives. *Organizational Behavior and Human Performance*, *3,* 157-189. doi:10.1016/0030-5073(68)90004-4

Locke, E. A. (1969). Purpose without consciousness: A contradiction. *Psychological Reports, 25,* 991-1009. doi:10.2466/pr0.1969.25.3.991

Locke, E. A. (1982). Relation of goal level to performance with a short work period and multiple goal levels. *Journal of Applied Psychology*, *67,* 512-514. doi:10.1037/0021-9010.67.4.512

Locke, B. A., & Bryan, J. F. (1969). The directing function of goals in task performance. *Organizational Behavior and Human Performance*, *4,* 35-42. doi:10.1016/0030-5073(69)90030-0

Locke, E. A., Cartledge, N., & Koeppel, J. (1968). The motivational effects of knowledge of results: A goal-setting phenomenon? *Psychological Bulletin, 70,* 474-485. doi:10.1037/h0026737

Locke, E. A., & Latham, G. P. (1990). *A theory of goal setting and task performance.* Upper Saddle River, NJ: Prentice Hall.

Locke, E. A., Shaw, K. N., Saari, L. M., & Latham, G. P. (1981). Goal setting and task performance: 1969–1980. *Psychological Bulletin, 90,* 125-152. doi:10.1037/033-2909.90.1.125

Marshall, E. J., & Brockman, R. N. (2016). The relationships between psychological flexibility, self-compassion, and emotional well-being. *Journal of Cognitive Psychotherapy*, *30,* 60-72. doi:10.1891/0889-8391.30.1.60

Mawritz, M., Folger, R., & Latham, G. P. (2014). Supervisors' exceedingly difficult goals and abusive supervision: The mediating effects of hindrance stress, anger, and anxiety. *Journal of Organizational Behavior, 35,* 358-372. doi:10.1002/job.1879

McFarland, B. R., Shankman, S. A., Tenke, C. E., Bruder, G. E., & Klein, D. N. (2006). Behavioral activation system deficits predict the six-month course of depression. *Journal of Affective Disorders, 91,* 229-234. doi:10.1016/j.jad.2006.01.012

Mehrabian, A. (1976). Questionnaire measures of affiliative tendency and sensitivity to rejection. *Psychological Reports, 38,* 199–209. doi:10.2466/pr0.1976.38.1.199

Michalak, J., & Grosse-Holtforth, M. (2006). Where do we go from here? The goal perspective in psychotherapy. *Clinical Psychology: Science and Practice, 13,* 346-365, doi:10.1111/j.1468-2850.2006.00048.x.

Moher, D., Liberati, A., Tetzlaff, J., & Altman, D. G. (2009). Preferred reporting items for systematic reviews and meta-analyses: the PRISMA statement. *British Medical Journal, 339*, b2535. doi: 10.1136/bmj.b2535

Pajares, F., Britner, S., & Valiante, G. (2000). Writing and science achievement goals of middle school students. *Contemporary Educational Psychology*, *25,* 406-422. doi:10.1006/ceps.1999.1027

Pittig, A., Alpers, G. W., Niles, A. N., & Craske, M. G. (2015). Avoidant decision-making in social anxiety disorder: A laboratory task linked to in vivo anxiety and treatment outcome. *Behaviour Research and Therapy, 73,* 96-103. doi:10.1016/j.brat.2015.08.003

Porter, R. L., & Latham, G. P. (2013). The effect of employee learning goals and goal commitment on departmental performance. *Journal of Leadership & Organizational Studies, 20,* 62-68. doi:10.1177/1548051812467208

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. doi:10.1177/014662167700100306

Reynolds, W. M., & Koback, K. A. (1995). Reliability and validity of the Hamilton Depression Inventory: A paper-and-pencil version of the Hamilton depression rating scale clinical interview. *Psychological Assessment, 7,* 472–483. doi:10.1037//1040-3590.7.4.472

Russell, D., Peplau, L. A., & Cutrona, C. E. (1980). The revised UCLA loneliness scale: Concurrent and discriminant validity. *Journal of Personality and Social Psychology*, *39,* 472–480. doi:10.1037//0022-3514.39.3.472

Samoocha, D., Bruinvels, D. J., Elbers, N. A., Anema, J. R., & van der Beek, A. J. (2010). Effectiveness of web-based interventions on patient empowerment: A systematic review and meta-analysis. *Journal of Medical Internet Research*, *12,* e23. doi:10.2196/jmir.1286

Sangalang, C. C., & Gee, G. C. (2012). Depression and anxiety among Asian Americans: The effects of social support and strain. *Social Work, 57,* 49-60. doi:10.1093/sw/swr005

Saunders, L. D., Soomro, G. M., Buckingham, J., Jamtvedt, G., & Raina, P. (2003). Assessing the methodological quality of nonrandomized intervention studies. *Western Journal of Nursing Research*, *25,* 223-237. doi:10.1177/0193945902250039

Schepank, H. (1995). *Der Beeinträchtigungs-Schwere-Score*. Göttingen, Germany: Beltz.

Schmalt, H. D. (1999). Assessing the achievement motive using the grid technique. *Journal of Research in Personality, 33,* 109–130. doi:10.1006/jrpe.1999.2245

Shim, S., & Ryan, A. (2005). Changes in self-efficacy, challenge avoidance, and intrinsic value in response to grades: The role of achievement goals. *The Journal of Experimental Education*, *73,* 333-349. doi:10.3200/jexe.73.4.333-349

Spielberger, C. D., Vagg, P. R., Barker, L. R., Donham, G. W., & Westberry, L. G. (Eds.). (1980). *The factor structure of the state-trait anxiety inventory* (Vol. 7). Washington, DC: Hemisphere.

Sperlich, S., Arnhold-Kerri, S., & Geyer, S. (2011). What accounts for depressive symptoms among mothers?: The impact of socioeconomic status, family structure and psychosocial stress. *International Journal of Public Health*. *56,* 385–96. doi:10.1007/s00038-011-0272-6.

Trew, J. L. (2011). Exploring the roles of approach and avoidance in depression: An integrative model. *Clinical Psychology Review*, *31,* 1156-1168. doi:10.1016/j.cpr.2011.07.007

Watson, D., Clark, L. A., Weber, K., & Assenheimer, J. S. (1995a). Testing a tripartite model 2. exploring the symptom structure of anxiety and depression in student, adult, and patient samples. *Journal of Abnormal Psychology*, *104,* 15–25. doi:10.1037/0021-843x.104.1.15.

Watson, D., Clark, L. A., Weber, K., Assenheimer, J. S., Strauss, M. E., & McCormick, R. A. (1995b). Testing a tripartite model 1. evaluating the convergent and discriminant validity of anxiety and depression symptom scales. *Journal of Abnormal Psychology*, *104,* 3–14. doi:10.1037/0021-843x.104.1.3.

Willutzki, U. (1999). *VEV-VW. Neue Version des Veranderungsfragebogens des Erlebens und Verhaltens [VEV-VW. A revised version of the questionnaire to assess changes in experiencing and behavior]* (Unpublished questionnaire). Institut fur Psychologie der Ruhr-Universitat. Bochum.

Wollburg, E., & Braukhaus, C. (2010). Goal setting in psychotherapy: The relevance of approach and avoidance goals for treatment outcome. *Psychotherapy Research, 20,* 488-494. doi:10.1080/10503301003796839

World Health Organization. (1992). *The ICD-10 classification of mental and behavioural disorders: Clinical descriptions and diagnostic guidelines.* Geneva, Switzerland: World Health Organization.

Youngstrom, E. A., Murray, G., Johnson, S. L., & Findling, R. L. (2013). The 7 up 7 down inventory: A 14-item measure of manic and depressive tendencies carved from the general behavior inventory. *Psychological Assessment*, *25,* 1377–1383. doi:10.1037/a0033975.

Zastrow, E. C., & Kirst-Ashman, K. K. (2009). *Understanding human behaviour and the social environment* (8th ed.). Belmont, CA: Brooks/Cole.

Zielke, M. (1978). *Veranderungsfragebogen des Erlebens und Verhaltens (VEV) [Questionnaire to assess changes in experiencing and behavior (VEV)]*. Weinheim, Germany: Beltz.

Zielke, M. & Kopf-Mehnert, C. (1979). *Fragebogen zur messing der veranderung Des erlebens und verhaltens (VEV).* Weinheim, Germany: Beltz.

Zimet, G. D., Powell, S. S., & Farley, G. K. (1990). Psychometric characteristics of the multidimensional scale of perceived social support. *Journal of Personality Assessment, 55,* 610–617. doi:10.1207/s15327752jpa5503&4_17

Appendix A: Downs and Black Critical Appraisal Tool (1998)

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Part 2: Research Report

Do therapists naturally use implementation intentions? If so, does use of implementation intentions lead to better outcomes?

Abstract

Objectives. The present research aimed to identify whether implementation intentions (IIs) are naturally used in psychological therapies and whether use is associated with outcomes of therapy.

Method. A coding framework developed by Toli (2014) was used to identify the use of IIs in transcripts ($N = 40$) of cognitive behaviour therapy (CBT) and counselling for depression (CfD). The use of IIs and other behaviour change techniques (or BCTs) was then related to measures of psychological outcome.

Results. Two components of IIs (identifying opportunities and identifying goal-directed responses) were naturally used by therapists, but strictly defined 'if-then' plans that link these components were not identified in the transcripts. Components relating to IIs (e.g., identifying opportunities) were used more in CBT than CfD. When the file was split according to therapy type (CBT/CfD, $N = 20$) higher frequency use of identifying opportunities was significantly associated with improvements in outcomes in CBT, but not in CfD; however, the lack of statistical power meant that this result should be treated with caution.

Conclusions. Findings suggested that therapists do not naturally use operationalised 'if-then' plans (or at least not in a manner that could be identified by the present coders using the coding framework) but components of IIs were used. This suggests that it may be necessary to train therapists to explicitly use IIs with their clients in order to be able to evaluate the effectiveness of using IIs in therapy.

Practitioner points:

- Two components of IIs are naturally used in therapeutic interventions but therapists do not seem to use 'if-then' plans and therefore all components of strictly defined IIs could not be tested for association with outcomes.

- Components relating to IIs (e.g., identifying opportunities and goal-directed responses) were used more in CBT than CfD.

Caution:

- Limited coder agreement and use of data from only one session (3) may have led to natural use of IIs not being accurately reflected.
- Further research is needed to confirm findings with a larger sample ($N = \geq 43$) with statistical power.

Do therapists naturally use implementation intentions? If so, does use of implementation intentions lead to better outcomes?

1. Introduction

1.1 Implementation intentions (IIs) and goal attainment. Many studies have sought to understand how goals are formed and how behaviour change is ultimately achieved (Bandura, 1986; Gollwitzer, 1990; Gollwitzer & Moskowitz, 1996; Locke & Latham, 1990). Goal pursuit is a focus in clinical and health psychology as researchers, therapists and the general public want to understand what drives goal setting and how goals can be successfully achieved. Research on behaviour change has sought to explore the specific behaviour change techniques (BCTs) that are involved in planning and striving towards goals (Abraham & Michie, 2008; Michie et al., 2013) and support successful goal attainment.

Gollwitzer and Moskowtiz (1996) suggested that successful goal pursuit is achieved through a combination of goal setting and goal striving (Lewin, 1926; Lewin et al., 1944). Gollwitzer (1996; 1999) explained that implementation of a goal is impeded by individuals failing to start a goal or maintain goal directed behaviour i.e., getting distracted, tired or giving up. In goal striving these barriers are referred to as self-regulatory problems (Oettingen, 2000; Oettingen, Hönig, & Gollwitzer, 2000; Oettingen, Pak, & Schnetter, 2001), as individuals struggle to regulate their behaviour toward goal attainment. Methods to supplement goal setting have therefore been recommended to support goal attainment. One BCT that facilitates goal achievement is forming implementation intentions (IIs; Gollwitzer & Sheeran, 2006).

IIs were originally identified by Gollwitzer (1993, 1996) and described as 'if-then' plans that: (i) identify a suitable opportunity in which to act (the 'if-' component) and (ii) identify a suitable response to perform when that opportunity transpires (the '-then' component; Gollwitzer, 1999). A typical example of the II format is 'If I

encounter X then I will perform behaviour Y'. Gollwitzer and Sheeran (2006) completed a meta-analysis showing that forming IIs had a positive effect (*d* = .65) on goal attainment in 94 independent tests. Findings showed that forming IIs was effective in promoting goal striving, continued pursuit of a goal (despite common goal barriers) and discontinuation of an ineffective course of action.

The successful application of IIs is credited to specific processes involved, which support self-regulatory behaviour. Use of IIs increases cue accessibility and creates stronger links between cues and intended responses (Webb & Sheeran, 2007). Cue accessibility refers to the 'if' component of an if-then plan. This process involves consideration of a suitable opportunity to act upon goals, which leads to activation of mental representations of cues to opportunistic situations, thus making such cues more accessible. Cue accessibility enables individuals to be more prepared to respond to specified situational cues and has been found to be associated with goal attainment (Aarts, Dijksterhuis, & Midden, 1999). As IIs increase the accessibility of cues (Webb & Sheeran, 2006), this means individuals will likely be able to identify a cue, or opportunity to act, more easily and efficiently.

Cue-response associations look at creating stronger links between cues and intended responses, which is the 'then' component of an if-then plan. This illustrates the link between identifying an opportunity to act and carrying out a specific goal directed response, i.e., the mental link that occurs to connect the identification of an opportunity and the response. This specific process is key in goal attainment because it is the link between cue and action in IIs. This linking of specified situations with intended responses forged in IIs removes the need to consider what response should be taken when an opportunity arises. This means goal directed responses can occur almost automatically (Gollwitzer & Brandstätter, 1997; Webb & Sheeran, 2004; 2008) without

an individual having conscious awareness of the eliciting cue (Bayer, Achtziger, Gollwitzer, & Moskowitz, 2009).

Many therapeutic approaches are devoted to helping clients to achieve goals. Yet insights from social and health psychology on the nature of goal pursuit and on strategies that promote goal attainment (e.g., IIs) are rarely applied.

1.2 IIs and goal attainment in mental health contexts. Experimental studies suggest that forming IIs can help people to bridge the gap between intention to act and behaviour in settings that are relevant to mental health. For example, research suggests that forming IIs can improve memory (Rummel, Einstein, & Rampey, 2012), attention and appraisal of performance in social tasks (Webb et al., 2010), and enhance self-help interventions for anxiety (Shah, Hunt, Webb, & Thompson, 2014; Varley, Webb, & Sheeran, 2011). Furthermore research has shown that IIs can be used to help service users to manage any negative feelings they may have in relation to attending psychotherapy sessions (Sheeran, Aubrey, & Kellett, 2007) and increase medication adherence (Brown, Sheeran, & Reuber, 2009). Fritzsche, Schlier, Oettingen, and Lincoln (2016) also found that using mental contrasting with IIs (MCII) facilitates goal-pursuit in depression. Whilst Sailor et al. (2015) found MCII helped individuals with schizophrenia to translate exercise intentions in to behaviour and led to reduced symptoms of depression.

Depression includes features of reduced interest in everyday activities, low mood and a range of associated cognitive, physical, emotional, and behavioural symptoms (American Psychiatric Association [APA], 2013). Within these features of depression there are difficulties, which would directly impact goal attainment. For example, decreased activity could lead to a loss of positive reinforcement, reduced motivation and therefore amplified depression (Hopko, Lejuez, Ruggiero, & Eifert, 2003; Lewinsohn, Sullivan, & Grosscup, 1980). In addition deficits in cognitive functioning (e.g.,

executive functioning and memory) could impact on an individual's ability to recognise opportunities for goal responses, or plan and initiate actions that might lead to change (Fishbach & Ferguson, 2007; Fuster, 2008; Miller & Cohen, 2001). Without motivation, interest, or ability to initiate and act on opportunities, individuals with depression might significantly struggle with goal attainment in therapy. It could therefore be suggested that this clinical population would benefit from additional support around goal setting through use of IIs.

Findings therefore illustrate the benefit of II use in clinical populations in improving attendance, goal execution and pursuit, and psychotherapy outcomes. Toli, Webb, and Hardy (2015) completed a meta-analysis finding that IIs have a large effect ($d+ = .99$) on goal attainment for individuals with mental health problems. Findings showed that this led to improved achievement of goals such as reduction in symptoms. Studies have looked at a range of mental health conditions and populations but predominantly depression and anxiety. The evidence for depression is promising but very limited as there has been minimal research looking at BCTs and specifically II use with individuals with depression. It would therefore be beneficial to consider the influence of II use in treatments for depression.

1.3. Do therapists naturally use IIs? NICE guidelines for depression (NICE, 2009) recommend a range of psychological interventions, such as cognitive behaviour therapy (CBT; Beck, 1967; 1979; 1995; 2011) and counselling for depression (CfD; Sanders & Hill, 2014). Within these interventions there is varied emphasis on behaviour change and therefore the desire or need to plan set goals.

Whilst CBT and CfD have been found to be effective interventions for depression (Cuijpers, van Stralen, Andersson, & van Oppen, 2008; Gyani, Shafran, Layard, & Clark, 2013; King et al., 2000), the NICE guidelines for depression (NICE, 2009) recommend CBT as the first line of treatment for psychological intervention. Various

formats of CBT are recommended by NICE e.g., self-help, group CBT and individual CBT, dependent on symptom severity. Although identified as an effective treatment modality, CfD is recommended for low to moderate depression in situations when the first line of treatment has been unsuccessful or has been declined by the service user (NICE, 2009). There is no trial data relating specifically to CfD however, the current trial by Saxon et al. (2017) is evaluating CfD for moderate/severe depression to determine the relative efficacy of CfD compared with CBT.

Michalak and Grosse Holtforth (2006) suggested that it is the therapists' role to support clients in developing attainable goals that are well planned using IIs. They highlighted the value of identifying personal goals in therapy, in addition to the role of explicit treatment goals. Multiple concepts of selecting and setting attainable goals were discussed, including: approach goals (working toward desired outcome) versus avoidance goals (avoiding or eradicating undesired outcomes); the role of motivation; and the impact of symptom distress. All of these aspects of treatment goals highlighted barriers to successful goal attainment but also how therapists can guide identification of attainable treatment goals. Therefore it was proposed that knowing the importance of goals, therapists should actively support goal setting.

Some BCTs identified by Abraham and Michie (2008, p. 382) such as 'providing general encouragement' and 'contingent rewards' (praise) are techniques that could potentially be identified in both CBT and CfD practice, as therapists use skills of empathy (Sanders & Hill, 2014) and recognition of goal accomplishment (Beck, 1995; 2011) to foster continued success in therapy. According to Abraham and Michie's (2008, p. 382) defined BCTs, setting goals in therapeutic interventions may involve BCTs of 'prompting intention formation' or 'time management' and these processes would link to components of IIs. Prompting formation may then lead to identification of goal opportunities and goal-directed responses. Similar, 'time management' may be

supported by the explicit use of IIs to specify where or when goal behaviour may take place. In addition, both CBT and CfD therapists may seek 'feedback on performance' (Abraham & Michie, 2008, p. 382) if a service user had set themself a goal or task to undertake between sessions.

There is limited evidence looking at whether BCTs and specifically IIs are used in therapy. The present research therefore explores the use of BCTs and IIs in therapeutic interventions, to gain a better understanding of how they are used, and if use is effective.

1.4. Are there likely to be differences in the use of IIs between different therapeutic approaches? As the techniques used to treat depression are different in CBT compared to CfD, there is potential variation in BCTs and II use in each approach. CfD aims to help clients connect with underlying feelings, to make sense of them and reflect on new interpretations (Sanders & Hill, 2014). CfD therapists may discuss change techniques (Sanders & Hill, 2014) but as a less directive approach CfD therapists are less likely to use BCTs. In contrast, Hobbis and Sutton (2005) noted that behaviour change is directly targeted in CBT through a mixture of cognitive and behavioural techniques (Beck, 1995; 2011). For example CBT uses thought challenging, behavioural activation, graded exposure and behavioural experiments to test dysfunctional cognitions and beliefs (Beck, 1995; 2011).

Goal setting is used across psychotherapy approaches (Grosse Holtforth & Grawe, 2002; Michalak & Grosse Holtforth, 2006), although goals are set up differently between approaches. For example in CfD therapists support clients to establish therapeutic aims to define a focus for therapy (Roth et al., 2009). With no structured and direct approach to goal setting or active pursuit of behaviour change, CfD may not utilise IIs.

In contrast, CBT (Beck, 1995; 2011) use a more structured approach to goal setting in which goals are defined clearly in early sessions to be a specific target for work. CBT uses specific techniques to help individuals bring about change and attain goals (Beck, 1995; 2011). CBT utilises these techniques in a systematic way to enhance goal setting and goal attainment. For example, when outlining homework tasks, CBT therapists have been found to be more likely to use systematic procedures (Kazantis & Deane, 1999) such as specifying where, when, how long and how often service users needed to complete homework (Shelton & Levy, 1981). This suggests that CBT supports a link between effective goal setting and successful therapeutic outcomes. CBT therapists may therefore use a structured approach to goal setting, which may be helpful to goal achievement in a similar way to the structured approach of using IIs to support goal attainment.

1.5. Identifying the use of IIs. In order to explore whether therapists use IIs, Toli (2014) developed a coding framework to identify if therapists naturally use IIs in therapy. The framework was based upon the behaviour change taxonomy developed by Abraham and Michie (2008), which encompasses a list of BCTs identified to instigate behaviour change in interventions. The adapted framework by Toli (2014) reviewed the different ways that individuals form if-then plans in studies and used this to identify five new categories of BCTs related to IIs, these were: (i) "identify an opportunity"; (ii) "identify a goal-directed response"; (iii) "link the identified opportunity and a goal-directed response"; (iv) "assess commitment to the plan"; and (v) "highlight the importance of making a detailed plan" (Toli, 2014; p. 58-59). The five categories separated the different processes of IIs highlighted in the review by Toli (2014).

Toli (2014) found identifying a specific opportunity encouraged individuals to confirm when and where to execute a goal response. This relates to the 'if' component of Gollwitzer's (1993; 1996; 1999) if-then plans, similar to identification of situational

and internal cues, in cue accessibility. Identifying a goal-directed response relates to the 'then' component of Gollwitzer's (1993; 1996; 1999) if-then plans, as it involves clarification of the specific response that would 'then' be employed to support achievement of a goal. Toli (2014) found that explicit instructions prompting identification of a response, supported execution of the response. Linking the opportunity and goal-directed response is the explicit creation of an 'if-then' plan through cue-response associations, specifically making a plan which links identification of an opportunity to act and a specific goal directed response. Accessing commitment to a plan was identified in relation to individuals being asked to rate commitment to a specified if-then plan, however, this could only be coded after creation of an 'if-then' plan. Finally, highlighting the importance of making a detailed plan was included as Toli (2014) found that IIs were sometimes introduced through more general reference to the advantages of making detailed plans to support goals.

The five new categories of BCTs related to IIs were reviewed by Toli (2014) when testing the reliability of the framework and categories (iv) and (v) were removed due to them not occurring in any of the transcripts (i.e., none of the therapists assessed their clients' commitment to a plan or highlighted the importance of making a detailed plan). Although all five categories were incorporated in to the coding framework developed by Toli (2014), only the first three techniques were included in analysis as components of II. Therefore, all five categories were included in the coding framework in the present research, but only the first three techniques (i.e., techniques i, ii, and iii) were focused on as the key components of IIs, linked to Gollwitzer's (1993; 1996; 1999) definition of an if-then plan. Once brought together this formed a new behaviour change coding framework (see Appendix A) that could specifically identify the use of IIs alongside other BCTs.

Other BCTs not reflecting the use of IIs were included because they have

previously been identified in therapy sessions (e.g., Grosse Holtforth & Grawe, 2002; Hobbis & Sutton, 2005; Michalak & Grosse Holforth, 2006) and Toli (2014) built upon the taxonomy developed by Abraham and Michie (2008) to create a framework that would enable identification of IIs *in addition to* the other BCTs listed by Abraham and Michie. Inclusion of other BCTs in addition to IIs in the present research will enable assessment of incremental validity through investigating whether the BCTs reflecting the use of IIs explain additional variance in outcomes over and above those that reflect other BCTs.

Toli (2014) found the framework to be reliable and identified that therapists use elements of IIs naturally in therapy, although use of explicit if-then plans was low. Due to the study utilising a small sample it was suggested that further research was needed to confirm findings. If therapists are found to naturally use IIs and this is linked with improved outcomes, then it would support translation of theoretical elements of IIs (e.g., cue accessibility and linking cues with goal directed responses) with practical application of techniques. Positive findings would identify use of IIs as an effective BCT to be utilised in therapeutic interventions. This finding could then influence development of clinical interventions and improvement of clinical outcomes going forward through simply adding IIs to current treatment protocols. These new intervention designs could be replicated and assessed in further experimental studies.

1.6. Aims of the present research. The present study aims to extend the work of Toli (2014) by using the coding framework to identify the frequency and quality of IIs and other BCTs used in psychological therapy sessions. Any associations between IIs and treatment outcome will then be considered. This extension study will determine if Toli's (2014) findings are confirmed or refuted with a larger sample. The aims of the study are:

1. To determine whether therapists naturally use IIs in therapy sessions.

2. To determine whether prompting clients to form IIs can improve therapeutic outcomes.

Toli (2014) defined the frequency of IIs as "the frequency of the coding units which were assigned to any of the II related categories" (p. 67). Quality of use was defined as "the frequency of the coding units which were deemed to reflect the strict definition of implementation intentions" (p. 67). This means better quality use is determined by the use of all three categories together, in an operationalised 'if-then' plan because this reflected both elements included in Gollwitzer's (1993; 1996; 1999) definition of IIs, i.e., identification of both a suitable opportunity in which to act and a suitable response to perform when that opportunity occurs. Treatment outcomes are defined as the final outcome score collected for participants.

1.7. Hypotheses. On the basis of existing evidence for the effectiveness of IIs and in consideration of the stated aims, it is hypothesised that:

1. Therapists will use IIs with clients in therapy.
2. Therapists working within a CBT approach will use IIs more frequently that therapists working within a CfD approach.
3. Higher frequency use of IIs by the therapists will be associated with positive treatment outcomes.
4. Better quality use of IIs by the therapists will be associated with positive treatment outcomes.

2. Methodology

2.1. Design. A quantitative methodology with a correlational design was employed to investigate whether therapists naturally used IIs, as well as the relationship between the use of IIs and outcomes in therapy. To determine the sample size required to prevent type II errors (i.e., to prevent acceptance of the null hypothesis when it is false) an a-priori power analysis was conducted based on the effect size associated with

the effect of forming IIs on goal attainment in mental health contexts determined by the previous research by Toli, Webb, and Hardy (2015; $d_+ = .99$). Due to no available R^2 value, a large effect size was assumed for f^2 value based on the d_+ effect size. Therefore, assuming a large effect size of $f^2 = .35$, a significance level of alpha = .05 and four predictors (e.g., the three codes representing the different aspects of if-then planning and the baseline outcome score), a total sample size of 40 transcripts of therapy session dyads were required to achieve 80% power to detect a large effect of IIs on outcomes.

2.2. Dataset. The research question was investigated by coding the content of recorded sessions of clients from a pre-existing data set. The pre-existing data set used for in the present research came from the 'Pragmatic, Randomised Controlled Trial assessing the non-Inferiority of Counselling and its Effectiveness for Depression' (PRaCTICED; Saxon et al., 2017). This dataset was chosen, as it was a non-inferiority randomised trial looking at the effectiveness of CfD compared to CBT in depression. Therefore the dataset allowed assessment of the natural use of IIs across two comparative treatments examining outcomes from depression.

Inclusion criteria for the trial involved: Being over 18 years old; Diagnosed with depression; and stating no strong objection to either treatment condition. Exclusion criteria included: Drug or alcohol dependence; Prior diagnosis of psychosis, schizophrenia, personality disorder or bipolar disorder; Presence of an organic condition (e.g., dementia); Unstable medication regime for depression; or Raised clinical risk. These criteria were determined at an initial assessment interview through the administration of the Clinical Interview Schedule-Revised (CIS-R: Lewis, 1994). Informed consent was obtained from all participants, and if participants met criteria and agreed to participate they were randomly allocated to a trial condition (see Saxon et al., 2017 for details of the procedure).

2.3 Participants. The sample for the current study comprised the first 40

randomised clients (20 CBT and 20 CfD) with a useable audio-recorded 3rd session. Session 3 was chosen based on CBT process research (Ilardi & Craighead, 1994; 1999). Specifically, the PRaCTICED CBT manual proposes that, after history-taking and case formulation (sessions 1-2), the next session should focus on achieving behavioural change. Therefore, it was expected that goal setting would be likely to happen in the early sessions, particularly around session 2-3 and therefore use of IIs would be expected to follow goal setting and occur in session 3.

Table 1 summarises the characteristics of the final sample ($N = 40$) utilised in this study.

Table 1

Participant characteristics

	N (%)
Gender	
Male	18 (45%)
Female	22 (55%)
Age	
18-30	12 (30%)
31-45	12 (30%)
46-60	14 (35%)
60-75	2 (5%)
Working status	
Employed	27 (67.5%)
Unemployed	5 (12.5%)
Retired	2 (5%)
Long term sick/disabled	3 (7.5%)
Home maker	3 (7.5%)

The majority of participants were female (55%) and employed (67.5%). Although there was variation in working status between the remaining 32.5% of participants, including: unemployed, homemaker, retired and long term sick/disabled. There was a wide age range from 18-75 years of age, but most participants were aged between 18-60. Most participants identified themselves as White-British (87.5%); the remaining 5

participants each identified themselves as different ethnicities.

2.4 Treatments and therapists. The PRaCTICED trial (Saxon et al., 2017) included approximately 30 counsellors and 35 high-intensity CBT therapists. CBT therapists had completed accredited CBT training and during pre-recruitment the CBT therapists received a refresher workshop on Beckian CBT for depression. Only 15% of counsellors had been trained in CfD prior to the trial and therefore before being assigned to the trial all counsellors completed accredited CfD training. To ensure protocol fidelity, all practitioners received regular supervision for CfD and CBT.

2.5. Procedure. The research involved two stages.

Stage one. Once all of the recordings were transcribed and anonymised, the main researcher divided the therapists' discourse into units that could be coded with the Toli (2014) coding framework. The units of analysis could be one or a group of sentences as long as they were considered to have the same theme. The main researcher was blind to participant demographics, therapy type, and outcome scores until after coding completion.

***Stage two*.** The main researcher was trained to use the coding framework (see Appendix A) to become the primary coder (coder 1). The developer of the framework, Agoro Toli, carried out training. An independent coder (coder 2) was then recruited and trained to use the coding framework by coder 1, to assist in coding the transcripts of psychotherapy sessions. Coder 2 had completed an undergraduate psychology degree, to ensure a working knowledge of psychological theory. Toli who developed the framework acted as expert coder for a portion of the transcripts.

Coder 2 was trained to use the coding frame with an example transcript from Toli's (2014) study; this involved a one-to-one training session of approximately 3 hours. During the session, the method of coding and any queries around BCTs were discussed using the example transcript. Coder 2 then went away to code the first two

transcripts from the present study and a second meeting was held to discuss coding of the transcripts. The meeting lasted approximately 2-3 hours and involved discussion of the outcome of coding and resolution of any discrepancies. Through this process it was acknowledged that there was limited coder agreement in initial coding but agreement could be easily confirmed through discussion of each transcript. It was acknowledged that coder 1 and the expert coder had slightly higher agreement than coder 1 and coder 2, which suggested coding might be impacted by level of clinical training. However, there was still very low coder agreement between all coders. Therefore the aim was to achieve minimal discrepancies in initial coding and determine an agreed set of final codes at the end through discussion of all coding between coder 1 and 2.

Once there were minimal discrepancies and no disagreement identified in coding of the first two transcripts, the remainder of the transcripts were coded independently. Coder 1 and 2 coded all 40 of the transcripts and the expert coder coded a quarter of the transcripts (n = 10). Coder 1 met the expert coder and coder 2 individually after each had coded a quarter of the transcripts allocated to them, in an effort to reduce coding drift (Lyons & Cole, 2016) and improve agreement. Coding drift could occur if coders gained new analytic insights as coding developed and therefore altered the allocation of codes (Lyons & Cole, 2016). Reviewing coding between coders therefore gave opportunity to identify any potential change in coding caused through drift. It was agreed that if coders had allocated different codes to units of discourse, the disagreement was discussed and a code was agreed.

2.6. Measures. The coding framework developed by Toli (2014) was used to code the use of IIs as well as other BCTs used in therapy sessions.

Treatment outcome measures included:

- The Patient Health Questionnaire – 9 (PHQ-9; Kroenke, Spitzer, & Williams, 2001). A brief questionnaire with 9 items that correspond to the 9 diagnostic

criteria for depressive disorder in the *Diagnostic and Statistical Manual of Mental Disorders* (DSM–V: APA, 2013). This was the primary outcome measure for the study as the treatment focus was depression. Participants were asked to respond to the 9 items on a four point rating scale (0 = Not at all, 3 = Nearly every day) with the instructions: *"Over the last 2 weeks, how often have you been bothered by any of the following problems?"* The PHQ-9 has high internal consistency at baseline and end of treatment (α = .83 and .92) and is responsive to change (.99: Cameron, Crawford, Lawton, & Reid, 2008).

- The General Anxiety Disorder Questionnaire – 7 (GAD-7: Spitzer, Kroenke, Williams, & Lowe, 2006). A brief 7-item measure of anxiety. In line with 7 statements participants respond on a four point rating scale (0= Not at all, 3= Nearly every day) in relation to the question: *"Over the last 2 weeks, how often have you been bothered by any of the following problems?"* The GAD-7 has excellent internal consistency (α = .92) and test-retest reliability (.83: Spitzer et al., 2006).
- The Work and Social Adjustment Scale (WSAS: Mundt, Marks, Shear, & Greist, 2002). A 5 item self-report measure, assessing impaired functioning attributable to an identified problem (e.g., depression or anxiety). Participants rate 5 questions on a scale of 0 to 8 (0 = no impairment, 8 = very severe impairment. The WSAS has good internal scale consistency ranging from α = .70 to .94 and good test-retest correlation (.73: Mundt et al., 2002). The GAD-7 and WSAS were secondary outcome measures.

2.7. Data Analysis.

Inter-rater reliability. To assess the reliability of coding, the percentage of codes on which coders agreed was calculated according to BCT categories (e.g., goals and planning). Categories were used rather than individual codes due to potential overlap in

coding. The percentage was calculated for agreement between coder 1 and each other independent coder on a 0 (no code category match) or 1 (code category match) rating system. For example, if coders both allocated a code from the same coding category (e.g., goals and planning) to the same discourse unit, this was rated as 1. As there was potential for more than one code to be applied to any given unit, an agreed match would only be confirmed if the same multiple categories (despite allocation of differing BCTs within each category) were identified by both coders. Agreement scores were then totalled and a percentage of agreement calculated in relation to number of coded units. Due to the small percentage of agreement and therefore wide disparity in coding, coder 1 and 2 reviewed the codes for all transcripts and agreed on a final set of 'agreed codes' for input in to final analyses. Neither Cohen's or Fleiss' kappa could be used to assess inter-rater reliability as data did not meet the assumptions for these analyses.

Descriptive and inferential statistics. Normal distribution and descriptive statistics were computed for all independent variables (IVs) and dependent variables (DVs).

Correlation and regression. For the variables representing gender and type of therapy, independent-samples t-tests were carried out. For ethnicity and employment status ANOVAs were completed, and an ANCOVA explored the role of utterances on the relationship between BCT use and outcomes. Pearson correlations were used to investigate the relationship between age and outcomes and 'all other BCTs' (other than IIs) and outcomes. Spearman's rho correlations were used to assess the relationships between baseline outcome scores and outcome change scores, as well as the relationship between the frequency and quality of II use and outcome score.

To assess the second and third hypotheses, a hierarchical multiple regression was used. The DV was the PHQ-9 outcome measure score, a continuous variable reflecting change in the participant's primary presenting problem (namely, depression). The main

IVs were the frequency (e.g., the number of times IIs categories were identified), and quality (e.g., the number of times that all three II categories were used) of if-then plans. This design also allowed additional control variables to be entered, these included: baseline outcome scores; utterances; and all other BCTs from the original Abraham and Michie (2008) framework.

2.8. Ethical considerations. The PRaCTICED trial was approved by NHS ethics on the 27th March 2014 (IRAS project ID: 130352; see Appendix B) and participants agreed to their data being used in subsequent research. According to the guidelines specified by the Research Ethics Committee at the University of Sheffield, the present research did not require additional ethical approval. In the present research, the coders did not have access to any information that could be used to identify the participants. However, as the study involved transcribers and coders having access to confidential transcripts of therapy sessions, all were asked to sign confidentiality forms. An example of the confidentiality forms completed can be seen in Appendices D and E.

2.9. Service user involvement. Service user contribution was considered in development of the research project. However, the design of the study meant there was no opportunity for service user input or feedback in the present research.

3. Results

3.1. Inter-rater reliability. Coder consistency was calculated for agreement between coders. Coder 1 and 2 achieved 27.29% agreement, whilst coder 1 and the expert coder achieved 44.60% agreement. Although there was slighter higher agreement between the coders with more clinical training, there was still not sufficient coding agreement. It was acknowledged that there was limited coder agreement in initial coding but agreement could be confirmed through secondary discussion of transcript coding and 'agreed codes' determined by coder 1 and 2 were used in final analyses.

3.2. Descriptive statistics/normal distribution. Seventy percent of BCTs from

the coding framework were used at least once but 6 BCTs did not occur at all (see Table 2). This included one of the BCTs reflecting the use of IIs; namely, the formal use of if-then planning, or linking the identified opportunity and goal-directed response (i.e., BCT/code 11).

The mean (*M*) and standard deviation (*SD)* of the frequency of categories of BCTs utilized in coding are shown in Table 2. The BCTs categories include: 'Natural consequences' (BCTs 1-3); 'Goals and planning' (BCTs 4-16); 'Feedback and monitoring' (BCTs 17-18); 'Repetition' (BCTs 19-24); 'Social' (BCTs 25-27); and 'Other' (BCTs 28-30). On average BCTs reflecting 'feedback and monitoring' occurred most frequently but also had the highest *SD*, indicating some variability in their use.

Table 2 also illustrates the mean and *SD*s for all individual BCTs, including BCT codes reflecting aspects of IIs. BCT 18 (provide feedback on performance) was the most frequently occurring individual BCT overall ($M = 8.48$). Of the three II BCTs, code 10 'identifying a goal-directed response' had the highest mean ($M = 4.75$) and widest spread of frequencies ($SD = 8.53$). Due to identified use of BCTs but lack of statistical power to look at the roles of all individual BCTs or BCT categories within the present research, a variable representing 'all other BCTs' (other than IIs) was created to consider the effects of these variables.

The *SD* and mean scores for all baseline and follow-up outcome measures are also shown in Table 2. There was a reduction in GAD-7 and PHQ-9 scores from pre- to post-intervention and a similar spread of scores across all data for these measures. The WSAS mean illustrates no change pre- to post-intervention.

Table 2

Descriptive statistics for IVs

Variable	*N*	*M*	*SD*
PHQ-9			
Baseline	40	18.55	4.77
Follow-up	40	9.55	5.21
GAD-7			
Baseline	40	13.38	4.74
Follow-up	40	7.75	5.28
WSAS			
Baseline	40	25.18	7.62
Follow-up	40	14.83	8.69
Overall frequency of use of BCTs (individually and by category)	40		
Natural consequences (1-3)		1.19	2.16
BCT 1		.65	.89
BCT 2		2.85	2.99
BCT 3		.08	.35
Goals and planning (4-16)		1.44	4.06
BCT 4		4.80	8.11
BCT 5		.00	.00
BCT 6		1.90	3.08
BCT 7		.00	.00
BCT 8		4.25	3.90
BCT 12		.00	.00
BCT 13		.18	.68
BCT 14		.73	1.15
BCT 15		.00	.00
BCT 16		.60	1.22
Feedback and monitoring (17-18)		5.19	7.55
BCT 17		1.90	2.64
BCT 18		8.48	9.29
Repetition (19-24)		.88	2.14
BCT 19		.05	.32
BCT 20		.00	.00
BCT 21		.15	.66
BCT 22		3.55	3.62
BCT 23		.20	.56
BCT 24		1.30	2.03

Table 2 (continued)

Descriptive statistics for IVs

Variable	*N*	*M*	*SD*
Overall frequency of use of BCTs (individually and by category)	40		
Social (25-27)		.13	.55
BCT 25		.08	.35
BCT 26		.13	.65
BCT 27		.20	.61
Other (28-30)		.09	.43
BCT 28		.08	.47
BCT 29		.03	.16
BCT 30		.18	.55
Implementation Intentions (codes 9-11)	40	2.11	5.51
Code 9: Identify an opportunity		1.58	2.83
Code 10: Identify a goal directed response		4.75	8.53
Code 11: Link opportunity and response		.00	.00

Normal distribution. Normality tests were completed for the pre and post data for the PHQ-9, GAD-7, and WSAS, in order to ensure that they met the assumptions for further statistical analyses (namely, multiple regression). Results showed that none of the data was normally distributed apart from the pre GAD-7 score, due to the Shapiro-Wilk tests illustrating that the p values were less than .05: pre PHQ-9 ($W(40) = .94$, $p = .03$); post PHQ-9 ($W(40) = .92$, $p = .01$); pre GAD-7 ($W(40) = .97$, $p = .28$); post GAD-7 ($W(40) = .91$, $p = .00$); pre WSAS ($W(40) = .91$, $p = .00$); and post WSAS ($W(40) = .94$, $p = .04$). In order to reconcile the lack of normal distribution, the data was transformed through calculating a 'change score' from pre- and post-outcome measure scores i.e., creating a new variable of change in outcome score. Further tests of normality illustrated that the transformed PHQ-9, GAD-7 and WSAS outcome 'change scores' were normally distributed: PHQ-9 ($W(40) = .97$, $p = .35$); GAD-7 ($W(40) = .98$, $p = .59$);WSAS ($W(40) = .96$, $p = .19$).

Shapiro-Wilk tests also illustrated the only IV that was normally distributed was age ($W(40) = .95$, $p > .05$). None of the other IVs were normally distributed. It was not

possible to transform demographic variables or baseline outcome scores, however, the BCT and II variables were transformed from raw frequency of coding to proportional frequency; creating new 'computed' variables. Normality tests were repeated but only the 'all other BCTs computed' variable was normally distributed: 'code 9 computed' ($W(40) = .59$, $p < .01$); 'code 10 computed' ($W(40) = .71$, $p < .01$); and 'all other BCTs computed' ($W(40) = .95$, $p = .08$). It was therefore necessary to consider non-parametric tests for correlation analyses, and interpret regression analyses with caution.

3.3. Hypothesis one: Therapists will use IIs with clients in therapy. Descriptive statistics indicated that therapists used two of the three codes for IIs: code 9 (identify an opportunity) and 10 (identify a goal directed response). However, code 11 (link opportunity and response), which reflected strict use of if-then planning that linked specified opportunities with goal directed responses was not used at all.

3.4. Hypothesis two: IIs will be used more frequently in CBT than CfD. The II codes 'Identify an opportunity' (code 9) and 'Identify a goal directed response' (code 10) were used more frequently in CBT than CfD (CBT: $M = 2.50$, $SD = 3.62$; CfD: $M = 0.65$, $SD = 1.23$, $t(38) = 2.17$, $p < .05$, and CBT: $M = 8.25$, $SD = 10.88$; CfD: $M = 1.25$, $SD = 2.25$), $t(38) = 2.82$, $p < .01$ respectively). However, operationalised if-then plans (code 11) were not used in either therapy. These differences may be partially explained by the higher average use of all BCTs by CBT therapists (CBT: $M = 40.50$, $SD = 62.00$; CfD $M = 11.03$, $SD = 20.87$), as shown in Table 3.

Table 3

Differences between the frequency of BCT use in CBT and CfD

	Total frequency	*M*	*SD*
CBT	1215	40.50	62.00
CfD	331	11.03	20.87

One explanation for the differences in the frequency with which therapists used BCTs between the two types of therapy may simply be that therapists using CBT talk more than therapists using CfD (and thus end up using more BCTs). In order to test this

idea, the number of average utterances per session was reviewed. The average number of utterances was higher in the CBT sessions (M = 258.95, SD = 69.43) compared to CfD sessions (M = 155.50, SD = 74.71). The difference in the number of utterances between therapy types suggested that it might be important to control for this variable. Pearson correlations were therefore carried out to determine the relationship between the number of utterances and changes in outcomes. However, there was no correlation identified with any of the outcome change scores (PHQ-9: r = -.19, n = 40, p = .25; GAD-7: r = -.07, n = 40, p = .66; WSAS: r = -.02, n = 40, p = .90).

An ANCOVA was then completed to look at the relationship between number of BCTs used and outcomes, with utterances as a covariate. Findings showed that there was no statistically significant relationship between BCT use and GAD-7 change score (F(30, 8), = 1.14, p = .45) or WSAS change score (F(30, 8) = 1.91, p = .17). However, there was a statistically significant relationship between BCT use and PHQ-9 change score (F(30, 8) = 3.09, p = .05). This finding suggested that the amount that the therapist talked did not influence outcomes for GAD-7 and WSAS but it did for PHQ-9. Therefore it was necessary to control for utterances in the PHQ-9 regression analyses.

3.5. Hypothesis three and four: The frequency and quality of use of IIs will be associated with positive treatment outcomes. Correlation analyses were run for each individual variable to determine multicollinearity (i.e., whether variables should be removed to reduce overlap in variance).

Correlations: II use and outcomes. Spearman's rho correlations between II codes and all outcome change scores showed that there was no significant correlation with any outcome change scores for code 9: Identify an opportunity (PHQ-9: r = .25, p = .13; GAD-7: r = .12, p = .44; WSAS: r = .08, p = .62) or code 10: Identify a goal directed response (PHQ-9: r = .22, p = .17; GAD-7: r = .01, p = .97; WSAS: r = .11, p = .51). Pearson correlations showed no correlation between 'all other BCTs computed' and

any outcome change score (PHQ-9: $r = .03$, $p = .87$; GAD-7: $r = -.02$, $p = .91$; WSAS: $r = -.03$, $p = .86$). Results are shown in Table 4.

Correlations: additional predictor variables. A significant correlation was identified for the relationship between gender and WSAS change score ($t(38) = .30$, $p < .01$), suggesting gender needs to be controlled for in the WSAS regression analyses. No demographic variables were associated with outcome for PHQ-9 and GAD-7. Pre GAD-7 score was significantly correlated with GAD-7 change score ($r = .20$, $p = .39$) and pre WSAS was significantly correlated with WSAS change score ($r = .20$, $p = .39$). However, the pre PHQ-9 score predicted the outcome change score for the PHQ-9 and WSAS. Therefore each baseline score would need to be considered in the regression analyses of each respective measure, and the baseline PHQ-9 would also need to be controlled for in regression analyses for the WSAS. Results can be seen in Table 4.

There was a significant difference between therapy type and PHQ-9 change score ($t(38) = -.61$, $p < .05$). As therapy type was associated with outcome and there was a difference in use of IIs between CBT and CfD, outcomes will be considered separately for each treatment.

As therapy type impacted outcome scores the data file was split according to therapy type and correlations were repeated. The split file correlation between II codes and PHQ-9 outcome change scores for CBT showed that there was a significant correlation for code 9: Identify an opportunity ($r = .53$, $n = 20$, $p < .05$), but not for code 10: Identify a goal directed response ($r = .36$, $n = 20$, $p = .12$). However, the correlation for GAD-7 and WSAS outcome change scores showed that there was no significant correlation for code 9: Identify an opportunity (GAD-7: $r = .39$, $n = 20$, $p = .09$; WSAS: $r = .20$, $n = 20$, $p = .39$) or code 10: Identify a goal directed response (GAD-7: $r = .02$, $n = 20$, $p = .94$; WSAS: $r = -.01$, $n = 20$, $p = .96$) respectively.

Table 4

Associations between predictors and DVs

Variable	PHQ-9 change score			GAD-7 change score			WSAS change score		
	t	*F*	*r*	*t*	*F*	*r*	*t*	*F*	*r*
T-test									
Gender	.05	-	-	.83	-	-	.30**	-	-
Therapy type	-.61*	-	-	-.55	-	-	.65	-	-
ANOVA									
Ethnicity	-	.78	-	-	.35	-	-	.95	-
Employment status	-	.69	-	-	.18	-	-	.48	-
Pearson correlation									
Age	-	-	-.11	-	-	-.02	-	-	-.01
All other BCTs ‘computed’	-	-	.03	-	-	-.02	-	-	-.03
Spearman rho correlation									
Pre PHQ-9 score	-	-	55***	-	-	.30	-	-	.44**
Pre GAD-7 score	-	-	.08	-	-	.45**	-	-	.15
Pre WSAS score	-	-	.12	-	-	-.01	-	-	.32*
Code 9: Identify and opportunity	-	-	.25	-	-	.12	-	-	.08
Code 10: Identify goal-directed response	-	-	.22	-	-	.01	-	-	.11

*Note. N = 40; *p < .05, **p < .01, ***p< .001*

The split file correlation between II codes and outcome change scores for CfD showed that there was no significant correlation for PHQ-9, GAD-7 or WSAS scores for code 9: Identify an opportunity (PHQ-9: r = -.13, n = 20, p = .60; GAD-7: r = -.11, n = 20, p = .64; WSAS: r = -.15, n = 20, p = .54) or code 10: Identify a goal directed response (PHQ-9: r = -.06, n = 20, p = .79; GAD-7: r = .10, n = 20, p = .68; WSAS: r = .03, n = 20, p = .91).

The correlation between 'all other BCTs computed' and outcome change scores was not significant in CBT (PHQ-9: r = .14, n = 20, p = .54; GAD-7: r = .16, n = 20, p = .49; WSAS: r = -.16, n = 20, p = .51) or CfD (PHQ-9: r = .02, n = 20, p = .95; GAD-7: r = -.15, n = 20, p = .53; WSAS: r = -.06, n = 20, p = .80).

The correlation analyses (run separately for each therapy) indicated only code 9 (Identify an opportunity) was associated with outcome and only for the PHQ-9. Therefore code 10 (Identify goal-directed response) and analysis involving GAD-7 and the WSAS was dropped from any further analyses. Although there was a lack of significant relationship between 'all other BCTs' and outcomes, due to the high mean frequency of BCT use and the potential role of BCTs (specifically around goal setting), which had been identified in literature (Grosse Holtforth & Grawe, 2002; Hobbis & Sutton, 2005; Michalak & Grosse Holtforth, 2006), the 'all other BCTs' predictor remained in regression analyses to consider and control for the effect of this variable.

Hierarchical multiple regression. Multiple regression analyses were run with the file split according to therapy type. Due to correlation analyses only code 9 and the PHQ-9 change score was included in regression analyses, in relation to IIs and outcome. The 'all other BCTs computed' variable was included at step 1. The pre GAD-7 score was also controlled for due to the high comorbidity between anxiety and depression (NICE, 2009; Fava et al., 2008; Zhiguo & Fang, 2014) and the inclusion of both the GAD-7 and PHQ-9 in the Improving Access to Psychological Therapies (IAPT)

minimum dataset (National IAPT Programme Team, 2011). The identified comorbidity has promoted inclusion of GAD-7 as a predictor of depression and depression remission in other studies (Angstman et al., 2017; Bair et al., 2013; Lima, Longatto-Filho, & Osorio, 2016; Saxon, Firth, & Barkham, 2016).

The multiple regressions were therefore run with four IVs entered at step 1: Pre PHQ-9 score; Pre GAD-7 score; Utterances, and; 'All other BCTs computed'; and one IV entered at step 2: code 9 (Identify an opportunity). PHQ-9 change score was used as the DV. Regression statistics for analyses are shown in Table 5.

When five IVs were included in the regression model, there was a significant impact on the PHQ-9 change score for CBT but not for CfD. The overall regression model for CBT was significant ($F(1,14) = 5.42$, $p < .05$). Three variables predicted PHQ-9 change in the CBT condition: Pre PHQ-9 score ($\beta(1, 14) = .56$, $p < .01$); Pre GAD-7 score ($\beta(1, 14) = -.44$, $p < .05$), and; Code 9: Identify an opportunity ($\beta(1, 14) = .44$, $p < .05$). However, the variables of 'all other BCTs computed' ($\beta(1, 14) = -.03$, $p = .89$) and utterances ($\beta(1, 14) = -.04$, $p = .85$) did not significantly contribute to the regression model.

The overall regression model for CfD was not significant at $F(1, 14) = 1.13$, $p = .31$. However, there was one significant predictor of PHQ-9 change in CfD, which was the pre PHQ-9 score ($\beta(1, 14) = .81$, $p < .05$). No other variable significantly contributed to the regression model: Pre GAD-7 score ($\beta(1, 14) = -.22$, $p = .43$); 'All other BCTs computed' ($\beta(1, 14) = .13$, $p = .56$); Utterances ($\beta(1, 14) = -.00$, $p = .99$); Code 9: Identify an opportunity ($\beta(1, 14) = -.22$, $p = .31$).

Table 5

Summary of multiple regression analysis

Step	Variable Entered	*Beta*	*Beta*
CBT			
1	PHQ-9 pre score	.61**	.56**
	GAD-7 pre score	-.37	-.44*
	All other BCTs computed	.14	-.03
	Utterances	.07	-.04
2	Code 9: Identify an opportunity	-	.44*
ΔR^2		.44	.16*
ΔF		2.90	5.42*
R^2		.44	.59*
Model *F*		2.90	4.09*
CfD			
1	PHQ-9 pre score	.77*	.81*
	GAD-7 pre score	-.20	-.22
	All other BCTs computed	-.04	.13
	Utterances	-.09	-.00
2	Code 9: Identify an opportunity	-	-.22
ΔR^2		.47*	.04
ΔF		3.37*	1.13
R^2		.47*	.51
Model *F*		3.37*	2.94

Note. Betas are standardized coefficients. *N = 20; *p < .05, **p < .01*

4. Discussion

4.1. Hypothesis one: Therapists will use IIs with clients in therapy. Therapists used two of the codes representing components of IIs; therapists helped their clients to identify an opportunity for a goal (code 9) and identified goal-directed responses (code 10). However, there was no evidence that therapists explicitly prompted their clients to link an identified opportunity with a goal-directed response in a specific 'if-then' plan (code 11). As explicit IIs were not used, the experimental hypothesis could only be partially accepted.

Although successful application of IIs has been related to use of strict 'if-then' planning (e.g., Brown et al., 2009; Rummel et al., 2012; Shah et al., 2014; Sheeran et al., 2007; Varley et al., 2011; Webb et al., 2010), the success of the approach is credited to the specific processes within IIs (Gollwitzer, 1999). The findings of the present research link to the identified literature on cue accessibility and the associations made between cues and intended responses, which Webb and Sheeran (2007) found were increased by use of IIs. Identifying an opportunity (code 9), like cue accessibility relates to the 'if' component of 'if-then' plans (Gollwitzer, 1993; 1996; 1999), which involves a person being able to identify suitable situations to act upon a goal through external and internal cues. This specific process of having greater mental accessibility of situational cues has been found to automatically initiate intended behaviour (Gollwitzer, 1999) and therefore be a mediator of goal completion (Aarts et al., 1999).

Similarly, identifying a goal-directed response (code 10) reflects the 'then' component of (Gollwitzer, 1993; 1996; 1999) 'if-then' plans, which is the specific goal response that is outlined in advance of a goal situation to improve goal attainment. Use of explicit instruction of goal directed responses has been found to improve execution of a response (Toli, 2014) and more immediate pursuit of goals (Gollwitzer & Brandstätter, 1997).

Explicit IIs incorporate both processes to enhance efficient and accurate identification of relevant opportunities to act with goal-directed responses (Aarts & Dijksterhuis, 2000a; 2000b; Aarts et al., 1999; Webb & Sheeran, 2004; 2007; 2008). It is this association, represented by code 11 that was not used by therapists. This finding suggests that it may be necessary to actively train therapists on the use of operationalised IIs.

4.2. Hypothesis two: IIs will be used more frequently in CBT than CfD. There was higher frequency use of identifying opportunities (code 9) and goal directed

responses (code 10) in CBT compared to CfD, however, there was no explicit use of 'if-then' planning and therefore no difference in explicit II use between therapies. Thus the hypothesis was only partially supported.

Higher use of components of IIs in CBT compared to CfD fits with existing literature (e.g., Beck, 1995; 2011; Hobbis & Sutton, 2005; Kazantis & Deane, 1999; Shelton & Levy, 1981), which suggests that CBT is a model in which therapists use a structured approach to goal setting, and would be likely to use BCTs. It also supports the premise that CfD would likely use less BCTs because CfD aims to bring about psychological and behavioural change indirectly through making sense of emotional difficulties and reflecting on new found understanding (Roth et al., 2009; Sanders & Hill, 2014).

Findings from the present research suggests that, as CBT already utilises goal setting (Beck, 1995; 2011; Hobbis & Sutton, 2005), this could be enhanced by adding IIs to goal-setting processes in CBT. However, this would mean CBT therapists would need to be trained to use IIs in therapy to ensure use of operationalised 'if-then' plans. Then effectiveness of use of IIs alongside standard CBT protocol would need to be assessed in comparison with a control condition of standardised CBT treatment. In contrast, as CfD uses a less directive and unstructured approach to goals in therapy (Roth et al., 2009; Sanders & Hill, 2014), and there is a lack of findings to support effectiveness of II use in CfD, this suggests that it may not be beneficial to explore II use in CfD.

4.3. Hypothesis three: The frequency of use of IIs will be associated with positive treatment outcomes. The use of BCTs, including those pertaining to IIs, namely identifying an opportunity to act (code 9), were not associated with the outcomes of therapy, when considered across the sample as a whole (i.e., when CBT and CfD were combined). When the sample was split according to therapy type, the

variables were able to predict changes in the PHQ-9 in CBT but not CfD. In CBT, three predictors, including identifying opportunities, significantly predicted outcomes. The implication is that aspects of 'if-then' planning, specifically identifying goal opportunities in a structured way were more helpful in predicting change, than other BCTs, but only in CBT.

As described above the role of identifying opportunities is a key component of IIs (Gollwitzer, 1993; 1996; 1999). The findings support previous literature such as Webb and Sheeran (2004), which identified the value of being able to identify an opportunity to act, to ensure a directed response occurs even when barriers to self-regulation occur (Oettingen, 2000; Oettingen et al., 2000; 2001). The implication that identifying opportunities was more helpful in predicting change than other BCTs suggests that this component of IIs can be utilised to enhance the existing goal setting processes in certain therapeutic interventions. It may therefore be advantageous to train CBT therapists to use IIs (particularly the specific process of identifying opportunities) in practice to increase cue accessibility and assess impact on outcomes of therapy.

As noted above, CfD is unlikely to utilise IIs due to focusing on emotional difficulties and intrapersonal processes with no structured protocol for goal setting or active pursuit of behaviour change. Therefore the lack of influence of BCT use, specifically identifying an opportunity to act (code 9), upon the outcomes of therapy suggests that use of IIs is not an effective technique for use in CfD. As proposed above, trying to incorporate II use in to CfD would not be recommended and it may be useful instead to focus on research to identify the active ingredients of CfD.

The findings go some way to accepting the experimental hypothesis, as higher frequency use of one component of IIs (identifying an opportunity) was associated with better outcomes. However, again explicit 'if-then' plans were not used and therefore could not be assessed in relation to outcome. Due to the file being split and use of five

IVs, the regression analysis also only offered 35% power and therefore was insufficiently powered to confirm a true effect. This research would therefore need to be repeated with a larger sample size in order to confirm this finding.

4.4. Hypothesis four: The quality of use of IIs will be associated with positive treatment outcomes. It was not possible to test this hypothesis, as the defined 'better quality use of IIs' in an operationalised 'if-then' plan, were not used by therapists and could therefore not be compared with treatment outcomes. Possible reasons for the lack of identification of operationalised 'if-then' plans are explored within the limitations section.

4.5. Limitations. A number of limitations are important to consider when interpreting the findings of the present research. First, there was very low initial agreement between coders (27-45%) and this may have impacted the identification of IIs and therefore the ability to determine how frequency and quality of use impacted outcomes. There were a number of reasons suggested for the low agreement. Although coders were assessed in meeting criteria such as having an undergraduate degree in psychology and knowledge of BCTs, there was a lot of variation between coders in their level of education, clinical experience and knowledge of different therapies. This appeared be reflected in the percentage of agreement as coders with a higher level of clinical training and experience had greater agreement.

Agreement was calculated on a rating scale of 0-1 for 30 individual codes, which may have increased likelihood of disagreement due to the large number of BCTs that could be coded. Coders were able to code more than one BCT per unit, which may have reduced level of agreement, as agreement would not be confirmed unless both sets of code categories matched. There were also many similar BCTs within categories e.g., BCT 22 (Provide general encouragement) and BCT 24 (Provide contingent rewards) could both be used to code therapist praise of a client. If coding agreement had not been

calculated by category, agreement may have been weaker as agreement would have only been confirmed for matched code pairs e.g., BCT 22 coded by both coders.

To prevent low coder agreement, it may have been beneficial to train the coders in a more systematic fashion, involving more training transcripts and time invested in ensuring a higher level of initial coding agreement before moving to the next stage. Coders were also supposed to be blind to the therapy type being delivered, however, some transcripts directly discussed therapy type. Future research may benefit from using systematic coder training and reducing coder bias by ensuring coder blinding.

The coding framework also allowed coders to code a unit of data as '0.5' if they were unsure whether the unit only partially met the code. The intention was to indicate which codes needed to be discussed between coders before inclusion in the final dataset. However, use of '0.5' suggested that the coders may have lacked confidence in their coding and may have coded more BCTs at '0.5' rather than making a choice to include or refute a BCT. Use of '0.5' along with multiple codes being identified for the same data unit meant that data collation was difficult. This coding issue may have impacted the apparent levels of agreement between the coders, and highlights some issues with the usability of the framework and the need for enhanced coder training.

The relatively low levels of agreement between the coders not only challenges the reliability of the framework but also casts doubt on the validity of the II construct in mental health. Specifically the relative lack of 'if-then' planning could reflect either (i) that therapists rarely use 'if-then' planning, or (ii) that therapists do use IIs but the coders or coding framework was unable to detect the use of IIs. Therapists may use some BCTs (as suggested in previous and the present research e.g., Grosse Holtforth & Grawe, 2002; Hobbis & Sutton, 2005; Michalak & Grosse Holforth, 2006), but may not explicitly link specific components of IIs in 'if-then' plans. This may be due to following specific intervention protocols that do not currently involve II use or due to

not being clear on how or why to utilise 'if-then' plans. Alternatively, therapists may use IIs but the present framework may not be able to identify II use in therapy sessions. Linking of 'opportunities to act' and 'goal-directed responses' in units of therapeutic dyads may be difficult to identify because the linking may occur across a full session or potentially across multiple sessions; also some communication may not be verbal and thus not possible to code in transcripts.

Second, coders also commented on the limitation of the coding framework in not being able to pick up on all areas of change that were occurring in the transcribed therapy sessions, for example exploring emotions/behaviours that underpin desire to change, general therapeutic relationship features/influence. Some of these areas of promoting change were not relevant to BCTs but others were in line with the BCT taxonomy developed by Michie et al. (2013), which captured a more extensive taxonomy of 93 hierarchically clustered techniques. This suggests that it may be necessary to extend the current framework to include components of therapeutic interventions, which are not currently included and might also be more relevant to therapy (e.g., formulation development/explanation or psychoeducation), to then enable assessment of the effectiveness of these techniques in relation to therapeutic outcomes. Alternately it may be beneficial to use the Michie et al. (2013) taxonomy, rather than use an adapted version of the Abraham and Michie (2008) taxonomy to test whether it encompasses more relevant codes. For example the Michie et al. (2013) taxonomy includes BCTs such as exposure and behavioural experiments, which are also more relevant to CBT protocols (Beck, 2011). However, either process would require repetition of the methodology from the Toli (2014) study to validate reliability of a new coding framework.

Third, based on CBT process research (Ilardi & Craighead, 1994; 1999), it was expected that the use of IIs would be likely to happen around session 3. However, many

transcripts used limited BCTs related to 'goals and planning' (48% used < 10; 30% used < 5), 10% did not use any explicit goal setting and one transcript did not utilise any BCTs. This variation in session focus may indicate that strategies for translating goals into action such as 'if-then' planning may have been discussed in another session. To overcome this limitation, it would be necessary to complete an assessment of multiple sessions to determine which session most consistently involved discussion pertaining to goals. Inappropriate session selection may have led the present research to underestimate the frequency of II use. Whilst therapists were found to identity components of IIs (code 9 & 10), the explicit linking of both in an 'if-then' plan may have occurred in later sessions.

Fourth, a strength of the study was inclusion of BCTs other than IIs in the analyses, which was deemed important due to the identified use of such BCTs in the therapy sessions (Grosse Holtforth & Grawe, 2002; Hobbis & Sutton, 2005; Michalak & Grosse Holforth, 2006). However, a lack of statistical power within the present research meant that all of the BCTs (other than IIs) had to be grouped together in one variable. Whilst this permitted inclusion of BCTs other than planning in analysis, it denied any exploration of the impact of individual BCTs, which have been identified to have specific individual and conjoint effects (Abraham & Michie, 2008; Michie, Abraham, Whittington, McAteer, & Gupta, 2009; Toli, 2014). It may be valuable for future research to look at the individual role of BCTs (as well as particular combinations of BCTs) in therapy in order to better understand which BCTs have the strongest effects on outcomes.

Toli (2014) built upon the Abraham and Michie (2008) taxonomy to create a framework that enabled the identification of BCTs reflecting the use of 'if-then' planning (or IIs), alongside identification of the other BCTs. However, the fitness for purpose of the coding framework is questioned in the present research due to relatively

low coding agreement. It may have improved power and enhanced specificity of technique identification if the study solely focused on identifying IIs. However, inclusion of other BCTs allowed review of the use of other BCTs in comparison to the use of IIs and also enabled assessment of the effectiveness of IIs above and beyond the impact of other BCTs.

Taxonomies have previously been found to reliably identify techniques (e.g., Abraham & Michie, 2008; Cane, Richardson, Johnston, Ladha, & Michie, 2015; Michie et al., 2013) but the present research identified that IIs are a difficult construct to identify in psychotherapy. Previous studies that have illustrated the effectiveness of IIs in mental health (e.g., Rummel et al., 2012; Shah et al., 2014; Sheeran et al., 2007; Varley et al., 2011; Webb et al., 2010) have been experimental studies and therefore did not explore the use of IIs in natural settings. The present findings do not, therefore, question those of previous research that attests to the efficacy of 'if-then' planning, in the sense that the present research was not able to examine the impact of prompting clients to form IIs on outcomes. Instead, the present findings simply suggest either that (i) therapists rarely use IIs unless explicitly prompted to do so (e.g., as part of a research study) or that (ii) it can be difficult to identify the use of IIs in therapeutic sessions. Findings from previous research are therefore not equivocal as there was no explicit use of IIs to compare effectiveness in a natural setting.

Finally, in the split file multiple regressions, the small sample size in each therapy type ($N = 20$) meant there was insufficient power to confirm that the statistically significant result reflected a true effect. A post hoc power analysis was carried out and indicated that to have sufficient power at .80 to detect moderate effects in a regression analyses with five predictors, at least 43 transcripts for each therapy would be needed to enable sufficient power in future studies.

4.6. Clinical implications. The present research provides some evidence that

processes related to forming IIs are used naturally in therapy but that therapists do not appear to naturally use explicit 'if-then' plans. Whilst the (albeit underpowered) analyses suggested that a higher frequency prompting of clients 'opportunities to act' might be associated with better psychological outcomes, further research is needed to confirm the findings in a larger sample. The findings did suggest that adding processes related to IIs to therapeutic interventions, and in particular, identifying opportunities to take action, may improve therapeutic outcomes. However, it will only be possible to truly determine whether explicit use of IIs is effective in improving mental health outcomes by training therapists how to use operationalised 'if-then' plans with their clients, prompting them to do so, and then assessing outcomes.

4.7. Theoretical implications. The findings of the present study partially supported the findings of Toli (2014) by illustrating that the Abraham and Michie (2008) BCT taxonomy is not limited to interventions designed to promote health behaviours; instead, it may be possible to apply a similar approach to evaluate the impact of therapeutic sessions designed to improve mental health outcomes. However, the relatively low levels of agreement between the coders suggests that the framework and/or the procedure by which the coders are trained to use it may need further development before the framework can be reliably applied in mental health contexts. The present study supports the value of identifying the separate components involved in IIs, specifically identifying opportunities and goal directed responses (Aarts et al., 1999; Gollwitzer, 1993; 1996; 1999; Webb & Sheeran, 2004). The present findings illustrate that not all components may be used naturally but specific components may be used and found to be effective, which highlights that key BCTs could be linked to change in outcomes.

4.8. Recommendations for future research. The volitional quality of IIs and separate mechanisms could benefit from further exploration in experimental research in

the field of mental health to further determine if and when specific components are specifically effective. Identification of specific BCTs related to 'if-then' planning could then be taught to and employed by therapists in order to determine the effectiveness of such techniques. As the findings of the present research suggest that II components fit more naturally with the delivery of CBT (at least when compared to CfD), it may be useful to add IIs as explicit techniques in the training of CBT. It would then be possible to compare the difference in outcomes between standard CBT and CBT with IIs added.

The design of the present research allowed exploration of the difference between natural/spontaneously formed IIs compared to those engendered in experimental research. This enabled identification of 'identifying an opportunity for a goal' as the typical way that IIs are (currently) naturally used in therapy. This finding can influence future use of IIs in research as it highlights which components of IIs are not used naturally and would therefore need to be explicitly taught to therapists. It would be advantageous to complete a repeated larger scale study to evidence the effective identification of implementation intention BCTs in therapy sessions and the positive impact on outcomes. Then the coding framework could be used in wider research to identify the use of IIs in the context of different clinical interventions or populations to promote its inclusion in therapeutic practitioner training programmes.

4.9. Conclusions. In conclusion, the present study identified the instances of IIs and other BCTs used in psychological therapy sessions. Aims were met, although not all hypotheses could be confirmed. Findings showed that therapists naturally used some aspects of IIs in therapy. However, while therapists naturally identified opportunities for goal striving and identified goal-directed responses, they did not explicitly link these opportunities and responses together in explicit use of an 'if-then' plan. Conclusions partially support the original findings by Toli (2014), as there was identified use of some components of IIs in relation to identifying opportunities and goal-directed

responses. However, Toli (2014) identified some use of strict 'if-then' plans whilst none were identified in the present research. This suggests that therapists may need explicit training on how to use IIs in practice as IIs are not consistently used naturally.

The present research also found that IIs were used more in CBT compared to CfD. This finding supported literature, which suggested the structured, goal-focused nature of CBT was more likely to support use of IIs (Beck, 1995; 2011; Hobbis & Sutton, 2005; Kazantis & Deane, 1999; Shelton & Levy, 1981) compared to the more indirect, interpersonal focus of CfD (Roth et al., 2009; Sanders & Hill, 2014).

In the overall sample, higher frequency use of aspects of 'if-then' planning was not associated with better outcomes and, as noted above, there was no evidence for high quality use of IIs (i.e., strict 'if-then' planning). However, further exploration of the data revealed that there was a significant relationship between the frequency with which therapists prompted clients to identify an opportunity to achieve their goal and the PHQ-9 change score for depression. Further research is needed to confirm findings with a larger sample and sufficient power. Training therapists to utilise IIs, to assess the effectiveness of II use in therapy, may be a possible future research focus.

References

Aarts, H., & Dijksterhuis, A. (2000a). Habits as knowledge structures: Automaticity in goal-directed behavior. *Journal of Personality and Social Psychology, 78*, 53-63. doi:10.1037//0022-3514.78.1.53

Aarts, H., & Dijksterhuis, A. (2000b). On the automatic activation of goal-directed behavior: The case of travel habit. *Journal of Environmental Psychology, 20,* 75-82. doi:10.1006/jevp.1999.0156

Aarts, H., Dijksterhuis, A., & Midden, C. (1999). To plan or not to plan? Goal achievement or interrupting the performance of mundane behaviours. *European Journal of Social Psychology*, *29*, 971-979. doi:10.1002/((sici)1099-0992(199912)29:8<971::aid-ejsp963>3.3.co;2-1

Abraham, C., & Michie, S. (2008). A taxonomy of behaviour change techniques used in interventions. *Health Psychology, 27,* 379-387. doi:10.1037/0278-6133.27.3.379

American Psychiatric Association. (2013). *Diagnostic and statistical manual of mental disorders (5th ed.)*. Washington, D.C: American Psychiatric Association. doi:10.1176/appi.books.9780890425596

Angstman, K. B., Garrison, G. M., Gonzalez, C. A., Cozine, D. W., Cozine, E. W., & Katzelnick, D. J. (2017). Prediction of Primary Care Depression Outcomes at Six Months: Validation of DOC-6 ©. *Journal of the American Board of Family Medicine, 30*, 281-287. doi:10.3122/jabfm.2017.03.160313

Bair, M. J., Poleshuck, E. L., Wu, J., Krebs, E. K., Damush, T. M., Tu, W., & Kroenke, K. (2013). Anxiety but not social stressors predict 12-month depression and pain severity. *The Clinical Journal of Pain, 29,* 95–101. doi:10.1097/AJP.0b013e3182652ee9.

Bandura, A. (1986). *Social foundations of thought and action: A social cognitive theory.* Upper Saddle River, NJ: Prentice-Hall.

Bayer, U. C., Achtziger, A., Gollwitzer, P. M., & Moskowitz, G. B. (2009). Responding to subliminal cues: Do if-then plans cause action preparation and initiation without conscious intent? *Social Cognition, 27,* 183–201. doi:10.1521/soco.2009.27.2.183

Beck, A. T. (1967). *Depression: Causes and treatment*. Philadelphia, PA: University of Pennsylvania Press.

Beck, A. T. (1979). *Cognitive therapy and the emotional disorders.* London, UK: Penguin Books

Beck, J. S. (1995). *Cognitive therapy: Basics and beyond*. New York, NY: The Guilford Press.

Beck, J. S. (2011). *Cognitive behavior therapy*. New York, NY: The Guilford Press.

Brown, I., Sheeran, P., & Reuber, M. (2009). Enhancing antiepileptic drug adherence: A randomised controlled trial. *Epilepsy & Behavior, 16,* 634-639. doi:10.1016/j.yebeh.2009.09.014.

Cane, J., Richardson, M., Johnston, M., Ladha, R., & Michie, S. (2015). From lists of behaviour change techniques (BCTs) to structured hierarchies: Comparison of two methods of developing a hierarchy of BCTs. *British Journal of Health Psychology*, *20,* 130-150. doi:10.1111/bjhp.12102.

Cameron, I. M., Crawford, J. R., Lawton, K., & Reid, I. C. (2008). Psychometric comparison of PHQ-9 and HADS for measuring depression severity in primary care. *British Journal of General Practice, 58,* 32-36. doi:10.3399/bjgp08X263794

Cuijpers, P., van Straten, A., Andersson, G., & van Oppen, P. (2008). Psychotherapy for depression in adults: A meta-analysis of comparative outcome studies. *Journal of Consulting and Clinical Psychology, 76,* 909-922. doi:10.1037/a0013075

Fava, M., Rush, A. J., Alpert, J. E., Balasubramani, G. K., Wisniewski, S. R., Carmin, C. N.,…Trivedi, M. H. (2008). Difference in treatment outcome in outpatients

with anxious versus nonanxious depression: a STAR*D report. *American Journal of Psychiatry*, *165,* 342–351. doi:10.1176/appi.ajp.2007.06111868.

Fishbach, A., & Ferguson, M. F. (2007). The goal construct in social psychology. In A. W. Kruglanski & T. E. Higgins (Eds.), *Social psychology: Handbook of basic principles* (pp. 490–515). New York, NY: Guilford Press.

Fritzsche, A., Schlier, B., Oettingen, G., & Lincoln, T. M. (2016). Mental contrasting with implementation intentions increases goal-attainment in individuals with mild to moderate depression. *Cognitive Therapy and Research*, *40,* 557-564. doi:10.1007/s10608-015-9749-6

Fuster, J. M. (2008). *The prefrontal cortex.* (4th ed.). San Diego, CA: Elsevier.

Gollwitzer, P. M. (1990). Action phases and mind-sets. In E. T. Higgins & R. M. Sorrentino (Eds.), *Handbook of motivation and cognition: Foundations of social behavior* (pp. 53-92). New York, NY: Guilford Press.

Gollwitzer, P. M. (1993). Goal achievement: The role of intentions. In W. Stroebe & M. Hewstone (Eds.), *European Review of Social Psychology,* (pp.141-185). Chichester, UK: Wiley.

Gollwitzer, P. M. (1996). The volitional benefits of planning. In P. M. Gollwitzer & J. A. Bargh (Eds.), *The psychology of action: Linking cognition and motivation to behavior* (pp. 287 - 312). New York, NY: Guilford.

Gollwitzer, P. M. (1999). Implementation intentions: Strong effects of simple plans. *American Psychologist*, *54,* 493-503. doi:10.1037/0003-066X.54.7.493.

Gollwitzer, P. M., & Brandstätter, V. (1997). Implementation intentions and effective goal pursuit. *Journal of Personality and Social Psychology*, *73*, 186-199. doi:10.1037//0022-3514.73.1.186

Gollwitzer, P. M., & Moskowitz, G. B. (1996). Goal effects on action and cognition. In E.T. Higgins & A. W. Kruglanski (Eds.), *Social psychology: Handbook of basic principles* (pp. 361-399). New York, NY: Guilford Press.

Gollwitzer, P. M., & Sheeran, P. (2006). Implementation intentions and goal achievement: A meta-analysis of effects and processes. *Advances in Experimental Social Psychology*, *38,* 69-119. doi:10.1016/S0065-2601(06)38002-1

Grosse Holtforth, M., & Grawe, K. (2002). Bern inventory of treatment goals: Part 1: Development and first application of a taxonomy of treatment goal themes. *Psychotherapy Research, 12,* 79-99. doi:10.1080/713869618

Gyani, A., Shafran, R., Layard, R. & Clark, D. M. (2013). Enhancing recovery rates in IAPT services: Lessons from analysis of the year one data. *Behaviour Research and Therapy*, *51,* 597-606. doi:10.1016/j.brat.2013.06.004

Hobbis, I. C. A., & Sutton, S. (2005). Are techniques used in cognitive behaviour therapy applicable to behaviour change interventions based on the theory of planned behaviour? *Journal of Health Psychology*, *10,* 7–18. doi:10.1177/1359105305048549

Hopko, D. R., Lejuez, C. W., Ruggiero, K. J., & Eifert, G. H. (2003). Contemporary behavioral activation treatments for depression: Procedures, principles, and progress. *Clinical Psychology Review*, *23,* 699-717. doi:10.1016/S0272-7358(03)00070-9

Ilardi, S. S., & Craighead, W. E. (1994). The role of nonspecific factors in cognitive-behavior therapy for depression. *Clinical Psychology: Science and Practice*, *1,* 138-155. doi:10.1111/j.1468-2850.1994.tb00016.x

Ilardi, S. S., & Craighead, W. E. (1999). Rapid early response and nonspecific factors in cognitive-behavior therapy for depression: A reply to Tang and DeRubeis.

Clinical Psychology: Science and Practice, *6,* 295–299. doi:10.1093/clipsy.6.3.295

Kazantis, N., & Deane, F. P. (1999). Psychologists' use of homework assignments in clinical practice. *Professional Psychology: Research and Practice, 30,* 581-585. doi:10.1037/0735-7028.30.6.581

King, M. (unpublished). *Counselling manual*, as employed in: King, M., Sibbald, B., Ward, E., Bower, P., Lloyd, M., Gabbay, M., & Byford, S. (2000). Randomised controlled trial of non-directive counselling, cognitive-behaviour therapy and usual general practitioner care in the management of depression as well as mixed anxiety and depression in primary care. *Health Technology Assessment, 4,* 1-83. doi:10.1136/bmj.321.7273.1389

Kroenke, K., Spitzer, R. L., & Williams, J. B. W. (2001). The PHQ-9: Validity of a brief depression severity measure. *Journal of General Internal Medicine, 16,* 606-613. doi:10.1046/j.1525-1497.2001.016009606.x

Lewis, G. (1994). Assessing psychiatric disorder with a human interviewer or a computer. *Journal of Epidemiology and Community Health, 48,* 207-210. doi:10.1136/jech.48.2.207

Lewin, K. (1926). Vorsatz, Wille und Bedürfnis (Intention, will, and need). *Psychologische Forschung, 7,* 330-385. doi:10.1007/bf02424365

Lewin, K., Dembo, T., Festinger, L., & Sears, P. S. (1944). Level of aspiration. In J. McHunt (Ed.), *Personality and the behavioral disorders (Vol. 1)* (pp. 333-378). New York, NY: Ronald Press.

Lewinsohn, P. M., Sullivan, J. M., & Grosscup, S. J. (1980). Changing reinforcing events: An approach to the treatment of depression. *Psychotherapy: Theory, Research & Practice*, *17,* 322-334. doi:10.1037/h0085929

Lima, M. P., Longatto-Filho, A., Osóoriol, F. L. (2016). Predictor variables and screening protocol for depressive and anxiety disorders in cancer outpatients. *PLoS ONE, 11,* e0149421. doi:10.1371/journal.pone.0149421

Locke, E. A., & Latham, G. P. (1990). *A theory of goal setting and task performance.* Englewood Cliffs, NJ: Prentice Hall.

Lyons, E., & Coyle, A. (2016). *Analysing qualitative data in psychology* (2nd ed.). London, UK: Sage

McManus, S., Bebbington, P., Jenkins, R., & Brugha, T. (Eds.). (2016). *Mental health and wellbeing in England: Adult psychiatric morbidity survey 2014*. Leeds, UK: NHS Digital. Retrieved March 2017 from http://content.digital.nhs.uk/catalogue/PUB21748/apms-2014-full-rpt.pdf

Michalak, J., & Grosse Holtforth, M. (2006). Where do we go from here? The goal perspective in psychotherapy. *Clinical Psychology: Science and Practice, 13,* 346-365. doi:10.1111/j.1468-2850.2006.00048.x.

Michie, S., Abraham, C., Whittington, C., McAteer, J., & Gupta, S. (2009). Effective techniques in healthy eating and physical activity interventions: A meta-regression. *Health Psychology, 28,* 690-701. doi:10.1037/a0016136

Michie, S., Richardson, M., Johnston, M., Abraham, C., Francis, J., Hardeman, W.,… Wood, C. E. (2013). The behavior change technique technique taxonomy (v1) of 93 hierarchically clustered techniques: Building an international consensus for the reporting of behavior change interventions. *Annals of Behavioral Medicine*, *46,* 81–95. doi:10.1007/s12160-013-9486-6

Miller, E. K., & Cohen, J. D. (2001). An integrative theory of prefrontal cortex function. *Annual Review of Neuroscience, 24,* 167-202. doi:10.1146/annurev.neuro.24.1.167

Mundt, J. C., Marks, I. M., Shear, M. K., & Greist, J. H. (2002). The Work and Social

Adjustment Scale: A simple measure of impairment in functioning. *British Journal of Psychiatry, 180,* 461- 464. doi:10.1192/bjp.180.5.461

National Improving Access to Psychological Therapies (IAPT) Programme Team. (2011). *The IAPT data handbook: Guidance on recording and monitoring outcomes to support local evidence-based practice.* London, UK: Crown copyright. Retrieved March 2017 from http://webarchive.nationalarchives.gov.uk/20160302154833/http:/www.iapt.nhs.uk/silo/files/iapt-data-handbook-v2.pdf

National Institute for Health and Care Excellence. (2009). *Depression in adults: The treatment and management of depression in adults*, NICE clinical guideline 90, London, UK: National Institute for Health and Care Excellence: author. Retrieved March 2017 from https://www.nice.org.uk/guidance/cg90/evidence/full-guidance-pdf-243833293

National Institute for Health and Care Excellence. (2011). *Common mental health disorders: Identification and pathways to care.* NICE clinical guideline 123, London, UK: National Institute for Health and Care Excellence: author. Retrieved March 2017 from http://www.nice.org.uk/guidance/cg123.

Oettingen, G. (2000). Expectancy effects on behavior depend on self-regulatory thought. *Social Cognition, 18,* 101-129. doi:10.1521/soco.2000.18.2.101

Oettingen, G., Hönig, G., & Gollwitzer, P. M. (2000). Effective self-regulation of goal attainment. *lnternational Journal of Educational Research*, *33,* 705-732. doi:10.1016/s0883-0355(00)00046-x

Oettingen, G., Pak, H., & Schnetter, K. (2001). Self-regulation of goal setting: Turning free fantasies about the future into binding goals. *Journal of Personality and Social Psychology*, *80,* 736-753. doi:10.1037//0022-3514.80.5.736

Roth, A. D., Hill, A., & Pilling, S. (2009). *The competences required to deliver effective humanistic psychological therapies.* London, UK: Skills for Health. Retrieved March 2017 from http://www.ucl.ac.uk/clinicalpsychology/CORE/humanistic_framework.htm

Rummel, J., Einstein, G. O., & Rampey, H. (2012). Implementation intention encoding in a prospective memory task enhances spontaneous retrieval of intentions. *Memory*, *20,* 803-817. doi:10.1080/09658211.2012.707214

Sanders, P., & Hill, A. (2014). *Counselling for depression: A person-centred and experiential approach to practice*. London, UK: Sage Publications.

Saxon, D., Ashley, K., Bishop-Edwards, L., Connell, J., Harrison, P., Ohlsen, S.,…Barkham, M. (2017). A pragmatic randomized controlled trial assessing the non-inferiority of counselling for depression versus cognitive- behaviour therapy for patients in primary care meeting a diagnosis of moderate or severe depression (PRaCTICED): Study protocol for a randomized controlled trial. *Trials*, *18,* 93-107. doi:10.1186/s13063-017-1834-6

Saxon, D., Firth, N., & Barkham, M. (2016). The relationship between therapist effects and therapy delivery factors: Therapy modality, dosage, and non-completion. *Administration and in Policy Mental Health and Mental Health Services Research*, *43,* 1-11. doi:10.1007/s10488-016-0750-5

Shah, R., Hunt, J., Webb, T. L., & Thompson, A. R. (2014). Starting to develop self-help for social anxiety associated with vitiligo: using clinical significance to measure the potential effectiveness of enhanced psychological self-help. *The British Journal of Dermatology*, *171,* 332-337. doi:10.1111/bjd.12990.

Sheeran, P., Aubrey, R., & Kellett, S. (2007). Increasing attendance for psychotherapy: Implementation intentions and the self-regulation of attendance-related negative

effect. *Journal of Consulting and Clinical Psychology, 75,* 853-863. doi:10.1037/0022-006X.75.6.853

Shelton, J. L., & Levy, R. L. (1981). *Behavioral assignments and treatment compliance: A handbook of clinical strategies.* Champaign, IL: Research Press.

Spitzer, R. L., Kroenke, K., Williams, J. B., & Löwe, B. (2006). A brief measure for assessing generalized anxiety disorder: the GAD-7. *Archives of Internal Medicine*, *166,* 1092-1097. doi:10.1001/archinte.166.10.1092

Toli, A. (2014). *Do therapists naturally use implementation intentions? Is this associated with beneficial outcomes? A study with a mixed methodology* (Unpublished doctoral dissertation). University of Sheffield, Sheffield.

Toli, A., Webb, T. L., & Hardy, G. E. (2015). Does forming implementation intentions help people with mental health problems to achieve goals? A meta-analysis of experimental studies with clinical and analogue samples. *British Journal of Clinical Psychology*, *55,* 69-90. doi:10.1111/bjc.12086

Varley, R., Webb, T. L., & Sheeran, P. (2011). Making self-help more helpful: A randomized controlled trial of the impact of augmenting self-help materials with implementation intentions on promoting the effective self-management of anxiety symptoms. *Journal of Consulting and Clinical Psychology, 79,* 123-128. doi:10.1037/a0021889

Webb, T. L., Ononaiye, M. S., Sheeran, P., Reidy, J. G., & Lavda, A. (2010). Using implementation intentions to overcome the effects of social anxiety on attention and appraisals of performance. *Performance and Social Psychology Bulletin*, *36,* 612-627. doi:10.1177/0146167210367785

Webb, T. L., & Sheeran, P. (2004). Identifying good opportunities to act: Implementation intentions and cue discrimination. *European Journal of Social Psychology, 34,* 407-419. doi:10.1002/ejsp.205

Webb, T. L., & Sheeran, P. (2006). Does changing behavioral intentions engender behavior change? A meta-analysis of the experimental evidence. *Psychological Bulletin*, *132,* 249-268. doi:10.1037/0033-2909.132.2.249.

Webb, T. L., & Sheeran, P. (2007). How do implementation intentions promote goal attainment? A test of component processes. *Journal of Experimental Social Psychology, 43,* 295-302. doi:10.1016/j.jesp.2006.02.001

Webb, T. L., & Sheeran, P. (2008). Mechanisms of implementation intention effects: The role of goal intentions, self-efficacy, and accessibility of plan components. *British Journal of Social Psychology, 47,* 373-395. doi:10.1348/014466607x267010

Zhiguo, W. U., & Fang, Y. (2014). Comorbidity of depressive and anxiety disorders: Challenges in diagnosis and assessment. *Shanghai Archives of Psychiatry*, *26,* 227-231. doi:10.3969/j.issn.1002-0829.2014.04.006

Appendix A: Coder Manual

- Intentionally left blank as copyrighted materials removed –

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Appendix B: Ethical approval

NHS
Health Research Authority
NRES Committee Yorkshire & The Humber - South Yorkshire
North East REC Centre
Unit 002, TEDCO Business Centre
Rolling Mill Road
Jarrow
Tyne and Wear
NE32 3DT

Telephone: 0191 428 3561

27 March 2014

Professor Michael Barkham
Director, Centre for Psychological Services Research
University of Sheffield
Dept of Psychology
University of Sheffield
Western Bank
SHEFFIELD
S10 2TN

Dear Professor Barkham

Study title: **A pragmatic non-inferiority randomised controlled trial of the clinical and cost-effectiveness of counselling for depression versus cognitive-behaviour therapy, for clients in primary care meeting a diagnosis of moderate or severe depression: The PRaCTICED Trial**
REC reference: **14/YH/0001**
IRAS project ID: **130352**

Thank you for your letter of 25 March 2014. I can confirm the REC has received the documents listed below and that these comply with the approval conditions detailed in our letter dated 04 February 2014

Documents received

The documents received were as follows:

Document	*Version*	*Date*
Interview Schedules/Topic Guides	Interview Topic Guide / Version 2.0	25 March 2014
Participant Consent Form: Main Consent Form	Version 2.0	25 March 2014

A Research Ethics Committee established by the Health Research Authority

Questionnaire: MINI Diagnostic - Sections I&J		
Questionnaire: CSSRI-EU		
Questionnaire: Client Satifsfaction		
REC application	IRAS V3.5	21 November 2013
Referees or other scientific critique report	Peer Review 1	
Referees or other scientific critique report	Peer Review 2	
Referees or other scientific critique report	Peer Review 3	
Summary/Synopsis	Flowchart Recruitment, V1.0	20 November 2013
Summary/Synopsis	Consort, Wave 1, V1.0	20 November 2013
Summary/Synopsis	Consort: Wave 2, V1.0	20 November 2013
Summary/Synopsis	SOP Recruitment	20 November 2013
Summary/Synopsis	SOP Patient Treatment, V1.0	20 November 2013

You should ensure that the sponsor has a copy of the final documentation for the study. It is the sponsor's responsibility to ensure that the documentation is made available to R&D offices at all participating sites.

14/YH/0001 **Please quote this number on all correspondence**

Yours sincerely

Kerry Dunbar
REC Assistant

E-mail: nrescommittee.yorkandhumber-southyorks@nhs.net

Copy to: *Mr David Saxon, University of Sheffield*
Mr Nicolas Bell, Sheffield Health & Social Care NHS Foundation Trust

A Research Ethics Committee established by the Health Research Authority

NHS
Health Research Authority
NRES Committee Yorkshire & the Humber - South Yorkshire
North East REC Centre
Unit 002, TEDCO Business Centre
Rolling Mill Road
Jarrow
Tyne and Wear
NE32 3DT

Telephone: 0191 428 3566
Facsimile: 0191 428 3432

04 February 2014

Professor Michael Barkham
Director, Centre for Psychological Services Research
Department of Psychology
University of Sheffield
Western Bank
SHEFFIELD
S10 2TN

Dear Professor Barkham

Study title:	**A pragmatic non-inferiority randomised controlled trial of the clinical and cost-effectiveness of counselling for depression versus cognitive-behaviour therapy, for clients in primary care meeting a diagnosis of moderate or severe depression: The PRaCTICED Trial**
REC reference:	**14/YH/0001**
IRAS project ID:	**130352**

The Research Ethics Committee reviewed the above application at the meeting held on the 30 January 2014. Thank you for attending to discuss the application.

We plan to publish your research summary wording for the above study on the HRA website, together with your contact details, unless you expressly withhold permission to do so. Publication will be no earlier than three months from the date of this favourable opinion letter. Should you wish to provide a substitute contact point, require further information, or wish to withhold permission to publish, please contact the REC Manager Mrs Joan Brown, nrescommittee.yorkandhumber-southyorks@nhs.net.

Ethical opinion

It was queried whether you were applying for approval of the whole RCT as well as what the students would be doing and you confirmed that ethical approval was being sought for the whole trial.

It was observed that the only issue with the application was that there was no indication of the topics that would be discussed with the people who dropped out of the study. It was explained that this was a work in progress and would be submitted to the REC once it had been finalised.

After ethical review

Reporting requirements

The attached document "After ethical review – guidance for researchers" gives detailed guidance on reporting requirements for studies with a favourable opinion, including:

- Notifying substantial amendments
- Adding new sites and investigators
- Notification of serious breaches of the protocol
- Progress and safety reports
- Notifying the end of the study

The NRES website also provides guidance on these topics, which is updated in the light of changes in reporting requirements or procedures.

Feedback

You are invited to give your view of the service that you have received from the National Research Ethics Service and the application procedure. If you wish to make your views known please use the feedback form available on the website.

Further information is available at National Research Ethics Service website > After Review

14/YH/0001 **Please quote this number on all correspondence**

We are pleased to welcome researchers and R & D staff at our NRES committee members' training days – see details at http://www.hra.nhs.uk/hra-training/

With the Committee's best wishes for the success of this project.

Yours sincerely

J Brown

***pp* Ms Jo Abbott**
Chair

Email: nrescommittee.london-camdenandislington@nhs.net

Enclosures: *List of names and professions of members who were present at the meeting and those who submitted written comments*
"After ethical review – guidance for researchers" SL-AR-2

Copy to: *Mr David Saxon, University of Sheffield*

Mr Nicolas Bell, Sheffield Health & Social Care NHS Foundation Trust

Appendix C: Sponsorship Letter

Caitlin Jones

Clinical Psychologist

Department of Psychology

Clinical Psychology Unit

Department of Psychology

Western Bank

Telephone: 0114 22 26650

Fax: 0114 22 26610

23rd August 2016

Project title: **Do therapists naturally use implementation intentions? Does use of implementation intentions lead to better outcomes? An outcome study**

6 digit URMS number: 147427

Dear Caitlin,

LETTER TO CONFIRM THAT THE UNIVERSITY OF SHEFFIELD IS THE PROJECT'S RESEARCH GOVERNANCE SPONSOR

The University has reviewed the following documents:

1. A University approved URMS costing record;
2. Confirmation of independent scientific approval;
3. Confirmation of independent ethics approval.

All the above documents are in place. Therefore, the University now **confirms** that it is the project's research governance sponsor and, as research governance sponsor, **authorises** the project to commence any non-NHS research activities. Please note that NHS R&D/HRA approval will be required before the commencement of any activities, which do involve the NHS.

You are expected to deliver the research project in accordance with the University's policies and procedures, which includes the University's Good Research & Innovation Practices Policy: www.shef.ac.uk/ris/other/gov-ethics/grippolicy, Ethics Policy: www.sheffield.ac.uk/ris/other/gov-ethics/ethicspolicy and Data Protection Policies: www.shef.ac.uk/cics/records

Your Supervisor, with your support and input, is responsible for providing up-to-date study documentation to all relevant sites, and for monitoring the project on an on-going basis. Your Head of Department is responsible for independently monitoring the project as appropriate. The project may be audited during or after its lifetime by the University. The monitoring responsibilities are listed in Annex 1.

Yours sincerely

Dr Andrew Thompson

Director of Research Training, Clinical Psychology Unit

cc. Supervisors: Prof Gillian Hardy & Dr Thomas Webb

Head of Department: Paul Overton, Glenn Waller

Appendix D: Coder Confidentiality Form

Type of project: Research thesis

Project title: Do therapists naturally use implementation intentions? Does use of implementation intentions lead to better outcomes? An extension study.

Researcher's name: Caitlin Ross

The transcript dyads you are coding have been collected from psychotherapy sessions as part of a research project. The data may contain information of a very personal nature, which should be kept confidential and not disclosed to others. Maintaining this confidentiality is of utmost importance to the University.

We would like you to agree:

1. Not to disclose any information you read to others,
2. If coding digitally shared data – only to accept files provided on an encrypted memory stick or password protected data file,
3. To keep the coding data and/or encrypted memory stick in a secure locked place when not in use,
4. When coding data ensure it cannot be seen by other people.
5. To show your coding only to relevant individuals involved in the research project.
6. Although the data will be anonymised, if you find that anyone from the transcript data is known to you, we would like you to stop the coding work on that transcript immediately and inform the person who has commissioned the work.

Declaration

I have read the above information, and I understand that:

1. I will discuss the content of the transcript data and coding only with the individual involved in the research project

2. If coding digitally shared data – I will only accept files provided on an encrypted memory stick or password protected data file,

3. I will keep the coding data and/or encrypted memory stick in a secure place when not in use

4. When coding I will ensure data cannot be seen by others

5. I will treat the transcript and coding data as confidential information

6. If I know the person undergoing therapy in the transcript data I will undertake no further coding work on that transcript.

I agree to act according to the above constraints

Your name _____

Signature _____

Date _____

Occasionally, the conversations in the transcripts can be distressing. If you should find them upsetting, please stop the coding and raise this with the researcher as soon as possible.

Appendix E: Transcribing Confidentiality Form

Type of project: Research thesis

Project title: Do therapists naturally use implementation intentions? Does use of implementation intentions lead to better outcomes? An extension study.

Researcher's name: Caitlin Ross

The recording you are transcribing has been collected as part of a research project. Recordings may contain information of a very personal nature, which should be kept confidential and not disclosed to others. Maintaining this confidentiality is of utmost importance to the University.

We would like you to agree:

1. Not to disclose any information you may hear on the recording to others,
2. If transcribing digital recordings – only to accept files provided on an encrypted memory stick
3. To keep the tapes and/or encrypted memory stick in a secure locked place when not in use,
4. When transcribing a recording ensure it cannot be heard by other people,
5. To adhere to the Guidelines for Transcribers (appended to this document) in relation to the use of computers and encrypted digital recorders, and
6. To show your transcription only to the relevant individual who is involved in the research project.
7. If you find that anyone speaking on a recording is known to you, we would like you to stop transcription work on that recording immediately and inform the person who has commissioned the work.

Declaration

I have read the above information, as well as the Guidelines for Transcribers, and I understand that:

1. I will discuss the content of the recording only with the individual involved in the research project
2. If transcribing digital recordings – I will only accept files provided on an encrypted memory stick
3. I will keep the tapes and/or encrypted memory stick in a secure place when not in use
4. When transcribing a recording I will ensure it cannot be heard by others
5. I will treat the transcription of the recording as confidential information
6. I will adhere to the requirements detailed in the Guidelines for transcribers in relation to transcribing recordings onto a computer and transcribing digital audio files
7. If the person being interviewed on the recordings is known to me I will undertake no further transcription work on the recording

I agree to act according to the above constraints

Your name _____

Signature _____

Date _____

Occasionally, the conversations on recordings can be distressing to hear. If you should find it upsetting, please stop the transcription and raise this with the researcher as soon as possible.