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Understanding the influence of outcome expectations on attendance, dropout and clinical outcomes in psychotherapy

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Declaration

I hereby declare that this thesis has been submitted for the award of Doctorate in Clinical Psychology at the University of Sheffield. It has not been, and will not be, submitted for any other qualification or to any other academic institution. I confirm this work is my own and all other sources have been referenced appropriately.

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Lay Summary

Outcome expectations are beliefs patients hold about the consequences of engaging in psychological treatment. They exist on a continuum from positive beliefs that treatment will be helpful, to beliefs that treatment will have negative consequences. Evidence-to-date suggests that more optimistic outcome expectations are associated with improved clinical outcomes. This thesis aimed to explore the association between outcome expectations, attendance in therapy, dropout and clinical outcomes.

Firstly, a systematic review of the literature was conducted to answer the question of whether the therapeutic alliance mediates the association between outcome expectations and clinical outcomes. Ten studies met the inclusion criteria and were included in the review. A narrative synthesis of studies was conducted and found that the therapeutic alliance partially mediates the association between outcome expectations and clinical outcomes. Findings suggest that more optimistic outcome expectations facilitate a stronger therapeutic alliance, which in turn contributes to patients experiencing improved outcomes. Current evidence suggests the alliance does not fully mediate this association, indicating other mediator variables are involved.

Secondly, an empirical study was conducted to investigate whether pre-treatment outcome expectations predict attendance at subsequent psychological therapy appointments and dropout from therapy. Investigations were undertaken to determine whether variability in patient pre-treatment expectancy is attributable to the assessing therapist after controlling for patients' characteristics. Results found that patients' outcome expectations assessed at an initial (pre-treatment) assessment appointment significantly predicted attendance at the first therapy session when controlling for the effect of the assessing therapist. Contrastingly, pre-treatment outcome expectations did not predict subsequent dropout from treatment. There was significant

variability in patient outcome expectations across assessing therapists after controlling for patients' characteristics. Results suggest that individual therapists influence patient outcome expectations after one initial assessment and this has a subsequent impact on patient attendance in therapy.

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Contents

Section One: Literature Review

Does the therapeutic alliance mediate the relationship between outcome expectations and therapeutic outcomes? A systematic review

Abstract

Background: The association between outcome expectations and therapy outcomes is well established in the literature (Constantino et al., 2011; Constantino, Vîslă et al., 2018). However, there is emerging evidence to suggest that the therapeutic alliance may mediate this association.

Aim: This systematic review aimed to investigate whether the therapeutic alliance mediates the association between outcome expectations and post-therapy outcomes.

Methods: A systematic review of the literature was conducted across three databases: PsycINFO, Scopus and Web of Science. Forward and backward citation methods were used and studies were assessed for risk of bias. A narrative synthesis was conducted using eligible studies which met the predefined inclusion/ exclusion criteria.

Results: Ten eligible studies were included in the narrative synthesis (N = 2,276 participants). All included studies were rated as having low or moderate risk of bias. Two studies in the review found evidence for full mediation, seven found evidence of partial mediation and one study found no evidence to suggest the therapeutic alliance mediates the association between outcome expectations and therapy outcomes.

Conclusions: Evidence suggests that the therapeutic alliance partially mediates the relationship between outcome expectations and therapeutic outcomes, however, the evidence is less clear for anxiety specific disorders.

Key words: Therapeutic Alliance; Outcome Expectations; Outcomes

1. Introduction

1.1 Therapeutic alliance

The therapeutic alliance refers to the collaborative relationship between the client and therapist within the context of psychotherapy, and is one of the most investigated factors associated with therapeutic outcomes (Flückiger et al., 2018). Historically, there have been differing definitions for the concept of the 'alliance' (Freud, 1912; Greenson, 1965; Zetel, 1956). One generally accepted definition of the alliance is a pantheoretical version proposed by Bordin (1979) referred to as the "working alliance". This definition proposes that the alliance is based on a collaborative stance in therapy and is underpinned by three components: agreement on therapeutic goals, agreement on the tasks comprising therapy and the bond between therapist and client.

There is evidence to suggest that the therapeutic alliance is associated with improved post-therapy outcomes (Constantino et al., 2005; Vogel et al., 2006; Webb et al., 2014) and that the alliance has long-term predictive effects on outcomes up to three years after terminating treatment (Hersoug et al., 2013). A number of meta-analyses have demonstrated that a strong therapeutic alliance is associated with positive clinical outcomes within both adult and youth samples (Horvath & Symonds, 1991; Karver et al., 2006; Martin et al., 2000; Shirk & Karver, 2003). A recent meta-analysis by Flückiger et al. (2018) including 295 independent studies found significant associations between therapeutic alliance and outcomes for face-to-face psychotherapy (r = .278, CI = .256 to .299, or d = .579) and similar results found for internet-based psychotherapy (r = .275, k = 23). Overall, there is robust evidence for an association between stronger therapeutic alliance and improved clinical outcomes, which occur across different treatment approaches and clinical presentations.

1:2 Outcome expectations

Patient expectations are defined as a set of expectancies patients have about the process of treatment (Greenberg et al., 2006) and are a long-established common factor for successful psychotherapy (Frank, 1961; Goldfried, 1980; Kirsch, 1985). Three types of psychotherapy expectancies are detailed in the literature: outcome expectancies, role expectancies and control expectancies (Delsignore & Schnyder, 2007). Outcome expectations are beliefs patients hold about the consequences of engaging in psychological treatment. They exist on a continuum from positive beliefs that treatment will be helpful, to beliefs that treatment will have negative consequences (Constantino et al., 2011). Contrastingly, role expectations are "patterns of behaviour viewed as appropriate or expected of a person who occupies a particular position" (Arnkoff et al., 2002). These refer to client expectations around their role and their therapist's role within the context of psychotherapy. Meanwhile, control expectancies are conceptually linked to locus of control (Rotter, 1966). They are prognostic beliefs that a specific action will lead to a specific outcome within therapy and involve an attribution of responsibility, for example the client's perceptions of whether they or the therapist holds the responsibility for change.

There is some evidence to suggest that outcome expectations are associated with the quality of the therapeutic alliance. Specifically, that more positive outcome expectations are associated with higher ratings of the alliance within non-clinical samples (Yoo et al., 2014) and clinical samples (Connolly-Gibbons et al., 2003; Constantino et al., 2005; Hersoug et al., 2013; Tsai et al., 2014; Webb et al., 2014; Westra et al., 2011). This observed association may be explained through goal theory, (Austin & Vancouver, 1996) which suggests individuals will apply greater resources to achieve a goal if they perceive the goal is attainable. Goal theory posits that patients who have more optimistic outcome expectations are more likely to engage in a positive

working relationship with their therapist. Consequently, a positive alliance promotes better clinical outcomes.

Meta-analytic results have found a significant association between optimistic early treatment outcome expectations and improved clinical outcomes (weighted r = .12 or d = .24; Constantino et al., 2011). These findings were replicated in an updated meta-analysis (weighted r = .18 or d = .36; Constantino, Vîslă et al., 2018). Whilst only a small effect size, the replicated findings demonstrate the reliability of this association.

1.3 Review aims

There are a growing number of studies investigating the relationship between therapeutic alliance, outcome expectations and post-therapy outcomes (Joyce et al., 1998; Plöderl et al., 2017). A systematic review of the literature was conducted with the aim of determining whether the therapeutic alliance mediates the relationship between outcome expectations and post-therapy outcomes.

Baron and Kenny (1986) propose a series of steps for investigating mediation. Firstly, the predictor variable (outcome expectations) must be significantly associated with the outcome variable (therapy outcomes). Replicated meta-analyses show that this small but significant association exists (Constantino et al., 2011; Constantino, Vîslă et al., 2018). Secondly, the predictor variable (outcome expectations) must be significantly correlated with the potential mediator variable (therapeutic alliance) which has been evidenced (Yoo et al., 2014). Finally, examination of the association between the mediator variable (therapeutic alliance) and outcome variable (therapy outcomes) whilst controlling for the impact of the predictor variable (outcome expectations) on the mediator variable is conducted. Full mediation is indicated if the association between predictor and outcome is non-significant once the mediator is

introduced, whereas partial mediation is indicated if the predictor-outcome association is reduced but still significant.

2. Method

2.1. Protocol and registration

A systematic review protocol was registered with the international prospective register of systematic reviews **(**PROSPERO) database on the 27th February 2020 prior to the study commencing and is available at https://www.crd.york.ac.uk/prospero/display_record.php?RecordID=166474

2.2. Search strategy and study selection

The inclusion and exclusion criteria applied to the selection process of eligible studies is summarised in Table 1. Systematic searches were conducted on the 17th March 2020 across three databases: PsycINFO, Scopus and Web of Science. Key search terms related to psychotherapy, therapeutic alliance and outcome expectations were combined using Boolean operators (see Appendix A). The search was restricted to peer-reviewed articles published in the English language. There were no date restrictions applied.

Table 1.

Research question and related inclusion / exclusion criteria

Does therapeutic alliance mediate the relationship between outcome expectations and therapy outcomes?		
	Inclusion criteria	Exclusion criteria
Population	Adults (18 years +) who received a form of psychotherapy for a mental health problem	Children/ Adolescents (Under 18 years)
	Clinical samples only	Non-clinical samples
Intervention	Psychological interventions inclusive of all common modalities (individual, group, computerised) and theoretical orientations for the purpose of treating the mental health problem	Non-psychotherapy interventions (ie. pharmacotherapy)
Comparator	Not applicable[1]	Not applicable
Outcomes	Statistical significance of the therapeutic alliance as a mediator between outcome expectations and therapy outcomes	Non-standardised psychotherapy outcome measures
	Standardised post-treatment psychotherapy outcome measures for mental health problems	Studies reporting qualitative outcome measures
	Studies reporting quantitative outcome measures	
Setting	Any usual setting where psychological interventions are delivered to adults in any country.	
Study design	Randomised controlled trials, prospective and retrospective cohort studies.	
	Studies published in the English language	Studies not published in the English language
	Studies published in peer-reviewed scientific journals	Grey literature, research theses and articles that are not published in a peer-reviewed scientific journal. Editorials, newspaper articles and other forms of popular media

[1] No comparator necessary due to investigating the association between variables and mediation analysis.

The study selection process followed preferred reporting items for systematic reviews and meta-analyses guidelines (PRISMA; Moher et al., 2009) and is displayed in Figure 1. Appendix B includes a PRISMA checklist for the systematic review. Results from searching the three databases were combined and duplicates removed using the automatic duplicate removal function in EndNote. Further duplicates were removed by hand. Results were screened by title and abstract and excluded if they did not meet the pre-defined criteria. The remaining articles were subject to a full-text review. Studies that did not meet the inclusion criteria following a full-text review were excluded; see Appendix C for a list of these studies with reasons for exclusion. Additional hand searches of reference lists and reverse citation searches using Web of Science were conducted for the eligible studies. Authors of the relevant studies were contacted via email requesting access to new and/or recommended articles that were eligible for inclusion based on the pre-defined inclusion criteria. A total of ten studies met the inclusion criteria and were included in the narrative synthesis.

2.3. Quality and risk of bias assessment

Risk of bias assessments were conducted on all eligible studies by the first author using the Critical Appraisal Skills Programme (CASP) cohort study checklist (CASP, 2018) and the revised Cochrane risk-of-bias tool for randomised trials (Stern et al., 2019). A second reviewer independently assessed all studies to increase reliability of the risk of bias assessment. Ratings were compared and there was agreement across all studies, so an interrater reliability index was considered redundant and is therefore not reported. The full risk of bias tables are reported for cohort studies (see Appendix D) and randomised trials (see Appendix E).

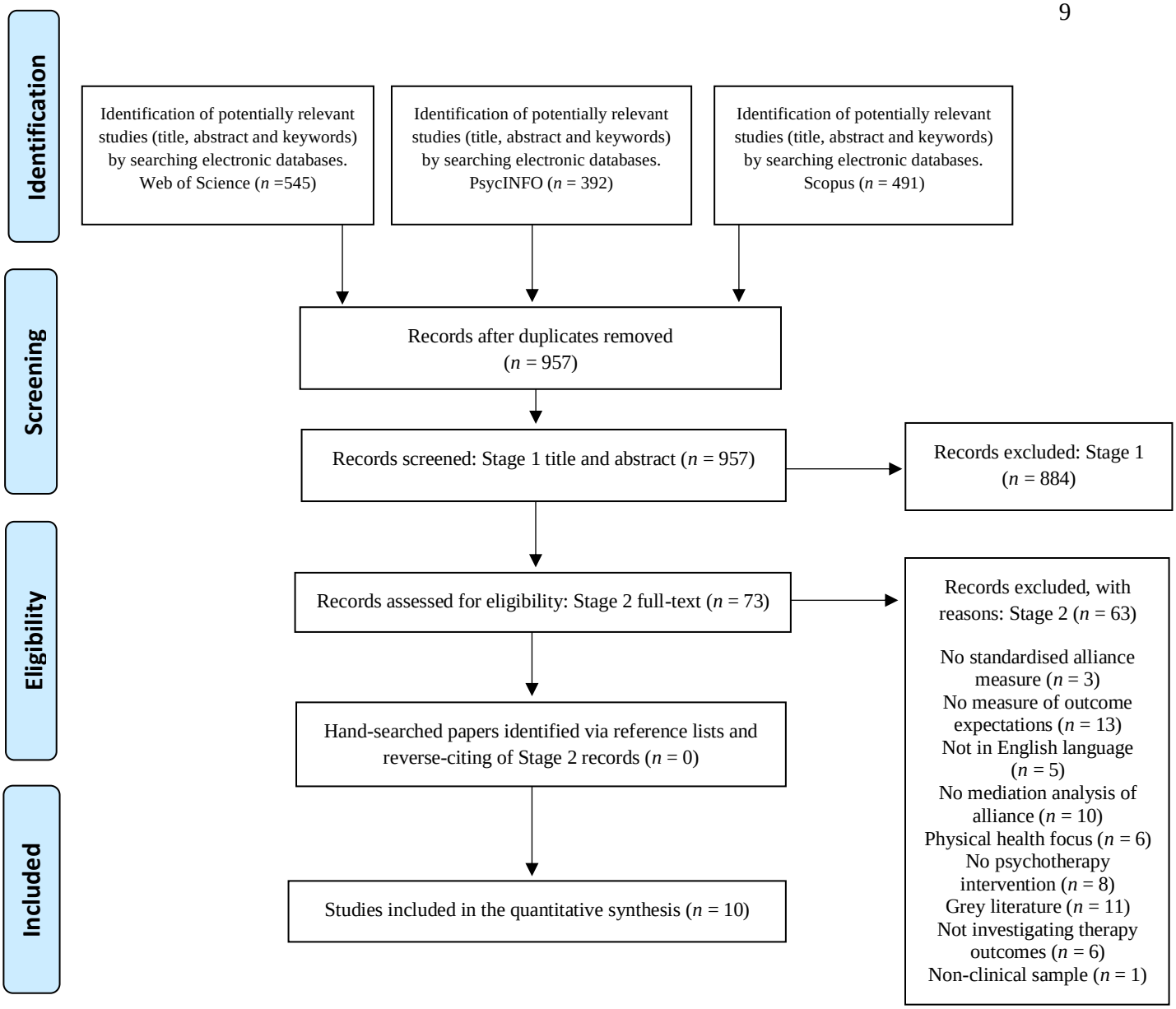

Figure 1: PRISMA flow diagram of the systematic study selection

2.4. Data analysis

A narrative synthesis was conducted of all the reviewed studies. Narrative synthesis is "an approach to the systematic review and synthesis of findings from multiple studies that relies primarily on the use of words and text to summarise and explain the findings" (Popay et al., 2006). Guidance for conducting a narrative synthesis proposes four main elements: (1) developing a theory, (2) developing a preliminary synthesis of findings from the included studies, (3) exploring relationships in the data, (4) assessing the robustness of the synthesis.

Data extraction was undertaken and findings tabulated summarising study characteristics (see Table 2) and key findings (see Table 3). The review reports the statistical significance of mediation tests and results about partial or full mediation where this data is available in the primary studies. Studies demonstrating lower risk of bias were given greater weighting in the final synthesis.

3. Results

3.1. Study characteristics

Design and sample characteristics. Ten studies all using unique samples met the inclusion criteria and were included in the narrative synthesis. Most studies were randomised controlled trials (n = 6) with the remaining being cohort studies (n = 4). The sample sizes across studies ranged from 54 to 1,089 participants. The mean age of samples ranged from 24.1 to 45.7 years. Additional study characteristics are displayed in Table 2.

Measures. A variety of measures were used across the studies to assess outcome expectations, therapeutic alliance and therapy outcomes. The most frequently used (n = 2) measure of outcome expectations were the Credibility/ Expectancy Scale (CES; Borkovec & Nau, 1972) and the Credibility/ Expectancy Questionnaire (n = 2; CEQ; Devilly & Borkovec, 2000). Other measures of outcome expectations included the Outcome Expectancy Scale (n = 1; OES; Ogrodniczuk & Sochting, 2010) and the Expectations About Counselling-Brief Form (n = 1; EAC-B; Tinsley et al., 1980). The remaining studies (n = 4) used a study specific measure of outcome expectations (Abouguendia et al., 2004; Joyce et al., 2003; Meyer et al., 2002; Zagorscak et al., 2020).

The most commonly used measure of the therapeutic alliance (n = 3) was the Working Alliance Inventory (WAI; Horvath & Greenberg, 1989); Working Alliance Inventory Short

Form (*n* = 3; WAI-S; Tracey & Kokotovic, 1989) and the Working Alliance Inventory-Revised (*n* = 1; WAI-R; Hatcher & Gillaspy, 2006). The Vanderbilt Therapeutic Alliance Scale (*n* = 1; VTAS; Hartley & Strupp, 1983) was also used. Two studies used a study specific measure of the alliance, which was administered in a standardised process across all study participants (Abouguendia et al., 2004; Joyce et al., 2003). Therapy outcome measures varied widely between studies due to the different mental health problems being treated. Details of the outcome measures used are displayed in Table 2.

3.2. Quality assessment

Using the revised Cochrane risk-of-bias tool for randomised trials, all studies were identified as either low (*n* = 2) or moderate risk of bias (*n* = 4). The CASP checklist for cohort studies indicated low (*n* = 1) and moderate (*n* = 3) risk of bias. None of the studies included in the review were rated high risk of bias. A second reviewer independently assessed all studies. There was 100% agreement between reviewers on the overall ratings for all studies. Common sources of bias were potential deviations from the intended interventions through a lack of reporting on treatment fidelity measures, unclear randomisation procedures, missing outcome data and lack of consideration for confounding variables. Summary tables detailing risk of bias ratings for cohort studies (see Appendix D) and randomised controlled trials (see Appendix E) are reported.

Table 2.
Summary of study characteristics

First author (year)	Study design	Country	Primary disorders/ target condition	Overall (*N*)	Demographics Mean age (*M*), gender	Intervention	Expectancy measure	Therapeutic alliance measure	Outcome measure(s)	Intervention duration
Johansson et al. (2011)	RCT	Norway	DD AD PD IP	100	*M* = 36.9 56% female	Dynamic psychotherapy	CES	WAI HUS	PFS GAF IIP-64 SCL-90-R	45-minute sessions weekly for 1 year
Meyer et al. (2002)	RCT	United States	MDD	250	*M* = NR Gender NR	CBT IPT IMI-CM PLA-CM	SS[a]	VTAS	BDI HAM-D	16 weeks with range of 16-20 sessions
Constantino, Aviram et al. (2020)	RCT	Canada	GAD	85	*M* = 33.3 88% female	CBT, MI-CBT	CEQ	WAI-S	PSWQ	15 weekly 1:1 sessions
Vîslă, Constantino et al. (2018)	Cohort study	Canada	MDD	91	*M* = NR Gender NR	CBT	OES	WAI	BDI-II BAI IIP-28	10 weekly groups; 2-hour sessions
Sauer-Zavala et al. (2018)	RCT	United States	PD/A GAD OCD SAD	179	*M* = NR Gender NR	UP or SDPs	CEQ	WAI-S	ADIS HAM-A	50-90 minute sessions; 12-16 weekly sessions
McClintock et al. (2015)	Study used archiv-al data	United States	AD DD IP	177	*M* = 24.1 70% female	NR	EAC-B	WAI	OQ-45	NR

Draheim & Anderson (2019)	RCT	United States	SAD	54	*M* = NR Gender NR	VRE group therapy	CES	WAI-S	PRCS FNE-B LSAS-SR	Four trials of exposure; total 120 min
Zagorscak et al. (2020)	RCT	Germany	Mild to moderate depression	1,089	*M* = 45.7 66% female	Internet-based CBT	SS[a]	WAI-R	PHQ-9 PHQ-S	6-8 weekly sessions
Abouguendia et al. (2004)	Clinical trial	Canada	Complicated grief	107	*M* = 40.0 77% female	Interpretive and supportive group therapy	SS[a]	SS[a]	PGS IES TRIG	90 minutes weekly for 12 weeks
Joyce et al. (2003)	Clinical trial	Canada	DD Dysthymia AD PD	144	*M* = 34.0 61% female	Interpretative and supportive STIP	SS[a]	SS[a]	ITO	50 minute weekly for 20 weeks

Randomised Controlled Trial (RCT); Depressive disorders (DD); Anxiety disorders (AD); Personality disorders (PD); Interpersonal problems (IP); Credibility and Expectancy Scale (CES); Working Alliance Inventory (WAI); Help and Understanding Scale (HUS); Psychodynamic Functioning Scales (PFS); Global assessment of functioning (GAF); Inventory of interpersonal problems (IIP-64); Symptom Checklist-90-Revised (SCL-90-R); Major depressive disorder (MDD); Not Reported (NR); Cognitive behavioural therapy (CBT); Interpersonal psychotherapy (IPT); Imipramine plus clinical management (IMI-CM); Placebo plus clinical management (PLA-CM); SS[a] (Study specific measure); Vanderbilt Therapeutic Alliance Scale (VTAS); Beck Depression Inventory (BDI); Hamilton Rating Scale for Depression (HAM-D); Bipolar Disorder-I (BD-I); Family therapy (FT); Bech-Rafaelsen Mania Scale (BRMS); Modified Hamilton Rating Scale for Depression (MHRSS); Generalised anxiety disorder (GAD); CBT integrated with motivational interviewing (MI-CBT); Credibility and Expectancy Questionnaire (CEQ); Working Alliance Inventory-Short Form (WAI-S); Penn State Worry Questionnaire (PSWQ); Outcome Expectancy Scale (OES); Beck Depression Inventory- Second Edition (BDI-II); Beck Anxiety Inventory (BAI); Inventory of Interpersonal Problems-28 (IIP-28); Panic disorder with or without agoraphobia (PD/A); Obsessive-compulsive disorder (OCD); Social anxiety disorder (SAD); Unified Protocol (UP); Single diagnosis CBT protocols (SDPs); Anxiety disorders Interview Schedule (ADIS); Hamilton Anxiety Rating Scale (HAM-A); Expectations About Counselling-Brief Form (EAC-B); Outcome Questionnaire-45 (OQ-45); Virtual reality exposure (VRE); Personal Report of Confidence as a Speaker (PRCS); Fear of Negative Evaluation-Brief Form (FNE-B); Liebowitz Social Anxiety Scale (LSAS); Working Alliance Inventory—Revised (WAI-R); Patient Health Questionnaire-9 (PHQ-9); Patient Health Questionnaire–Stress Module (PHQ-S); Pathological Grief Scale (PGS); Impact of Events Scale (IES); Texas Revised Inventory of Grief (TRIG); Short-term, time-limited individual psychotherapy (STIP); Individualised target objectives (ITO).

Table 3

Summary table of key findings.

Author and year	Main findings	Evidence for mediation?
Johansson et al. (2011)	Outcome expectations were directly associated with post-therapy residual gain scores on the Psychodynamic Functioning Scale (PFS; predicted R^2 = .073, F(1, 93) = 7.31, p = .008) and Global Assessment of Functioning measure (GAF; predicted R^2 = .05, F(1, 93) = 5.0, p = .030). Outcome expectations were correlated with client-rated Help and Understanding Scale (HUS) at session one (r = .41, p < .001) and this association reduced at session seven (r = .20, p = .06); session 16 (r = .24, p = .03) and the final session (r = .29, p = .03). Outcome expectations were directly associated with the quality of the therapeutic alliance measured using the Working Alliance Inventory (WAI; predicted R^2 = .11, F(1, 86) = 10.6, p = .002) and the HUS (predicted R^2 = .13, F(1, 93) = 14.2, p < .001). Patient-rated alliance measure HUS was significantly correlated with residual gain scores on the outcome measure PFS (r = .36, p < .01) and GAF (r = .30, p < .01). The WAI was significantly correlated with residual gain scores on the PFS (r = .40, p < .01) and GAF (r = .46, p < .01). When mediator variables WAI or patient-rated HUS were included in the regression model, the association between outcome expectations and residual gain scores on the PFS and GAF became non-significant, which is indicative of full mediation.	Evidence for full mediation
Meyer et al. (2002)	Outcome expectations were associated with post-therapy outcomes on the Beck Depression Inventory (BDI) and Hamilton Rating Scale for Depression (HAM-D) composite score (r = .22, p < .01). Outcome expectations were significantly correlated with the quality of the therapeutic alliance (r = .27, p < .01) and the alliance was significantly correlated with BDI and HAM-D composite scores (r = .49, p <.01).	Evidence for full mediation

	The effect of the alliance on clinical outcome remained significant when controlling for patient expectations (*ß* = .47, sr^2 = .20), *t*(148) = 6.33, *p* < .01). Expectancy was no longer a significant predictor of outcome when alliance ratings were entered simultaneously into the regression model (*ß* = .09, sr^2 = .01), *t*(148) = 1.20, *p* = .23).	
Constantino, Aviram et al. (2020)	Patients who reported more optimistic outcome expectations at session one, reported a stronger therapeutic alliance at the next session, and this was associated with lower levels of self-reported worry (indirect effect = - 0.02, *SE* = 0.008, *CI* = -0.04 to -0.007). When therapists reported higher outcome expectations for their client, they were more likely to report higher alliance ratings, which in turn was associated with lower client-reported worry (indirect effect = - 0.03, *SE* = 0.009, *CI* = -0.05 to -0.02). The direct effect between client-rated outcome expectations and post-therapy worry scores was significant when controlling for client and therapist-rated alliance (direct effect = - 0.23, *SE* = -0.03, *CI* = -0.28 to -0.16). The direct effect of therapist-rated outcome expectations on clinical outcomes was non-significant when controlling for patient and therapist-rated alliance (direct effect = 0.05, *SE* = 0.04, *CI* = -0.04 to 0.14).	Evidence for partial mediation
Vîslă, Constantino et al. (2018)	There were significant associations between baseline outcome expectations and post-therapy outcomes, including depression scores (indirect effect = -1.294, *SE* = .719, *CI* = -2.933 to -0.159) and anxiety scores (indirect effect = -1.629, *SE* = .933, *CI* = -3.764 to -0.166), mediated by mid-treatment therapeutic alliance. An indirect effect of session 3 outcome expectations on post-therapy anxiety was mediated through session 5 alliance (indirect effect = -2.314, *SE* = .1.241, *CI* = -5.086 to -0.266). The indirect effect of baseline outcome expectations on post-therapy interpersonal problems was mediated by the early alliance and then session 3 outcome expectations in turn (indirect effect = -.049, *SE* = .046, *CI* = -.2136 to -.0004). There was a significant indirect effect of session 1 alliance on post-therapy interpersonal problems through session 3 outcome expectations (indirect effect = -.121, *SE* = .055, *CI* = -.221 to -.042).	Evidence for partial mediation
Sauer-Zavala et al. (2018)	Significant association between outcome expectations and the alliance (*r* = .42, *p* < .01) and between the alliance and change in anxiety symptoms post-therapy (*r* = .28, *p* < .01). Outcome expectations significantly predicted patient-rated alliance ratings at session 4 (*β* = 0.21, *CI* = .08 to 0.33, *p* = .001). Outcome expectancy significantly predicted change in anxiety symptoms from session 4 to post-therapy (*β* = 0.11, *CI* = .003 to 0.22, *p* = .008) but working alliance did not (*β* = 0.14 *CI* = -0.03 to 0.32, *p* = .076).	Evidence for partial mediation

	Significant indirect effect of outcome expectancy on change in anxiety scores post-therapy through the therapeutic alliance (β = 0.03, *SE* = 0.02, *CI* = .003 to 0.09). This indirect effect accounted for 6% of the variance in post-therapy anxiety symptoms (R^2_{med} = 0.06 [.004, 0.17]).	
McClintock et al. (2015)	Effect of client outcome expectations on clinical outcome is mediated firstly by the therapeutic alliance and then by client-rated session positivity (β = -0.89, *CI* = -2.06 to -0.05). The effect of outcome expectations on outcomes was nonsignificant when client-rated session positivity was entered into the model first, followed by the therapeutic alliance (β = -0.15, *CI* = -0.65 to 0.39).	Evidence for partial mediation
Zagorscak et al. (2020)	Outcome expectations measured at pre-assessment were positively associated with mid-treatment goal/task ratings (*b* = 0.25, *p* < .001) and bond ratings (*b* = 0.23, *p* < .001) on the Working Alliance Inventory- Revised (WAI-R). Task/ goal ratings of the alliance assessed at session 5 were negatively associated with depressive symptom change between session 7 and end of therapy (*b* = -0.06, *p* = .004). All direct effects of outcome expectations on change in depressive symptoms were nonsignificant (*p* > .050).	Evidence for partial mediation
	Indirect effect of outcome expectations on post-therapy outcomes was mediated by mid-treatment goal/task ratings of the alliance (*b* = -0.015, *CI* = -0.03 to -0.004).	
Abouguendia et al. (2004)	Outcome expectations were significantly associated with post-therapy outcome factors measuring general symptoms (*r* = -.31, *p* < .01) and life dissatisfaction (*r* = -.32, *p* < .01). Outcome expectations were not significantly associated with grief symptoms (*r* = -.18, *p* > .10).	Evidence for partial mediation
	Outcome expectations were directly associated with the client-rated alliance (β = .24, *p* < .05) but not the therapist-rated alliance (*p* = .06).	
	A significant indirect effect of client outcome expectations on outcomes including general symptoms (β = -0.131, *p* < .01) and life dissatisfaction (β = -0.156, *p* < .01) was found. The indirect effect of outcome expectations on grief symptoms was non-significant (β = -0.036, *p* > .05).	
	Including client rated alliance scores in the model resulted in the direct relationship between outcome expectations and post-therapy outcomes decreasing significantly on measures of general symptoms (β = -.18 to β = -.13, *p* < .05), grief symptoms (β = -.11 to β = -.04, *p* < .05) and life dissatisfaction (β = -.20 to β = -.16, *p* < .05).	

Joyce et al. (2003)	Outcome expectations were significantly associated with patient reported improvement post-therapy (r = .24, p = .006) and therapist-rated improvement post-therapy (r = .32, p = .003). Outcome expectations were significantly and directly associated with client-rated therapeutic alliance (r = .27, p = .001) and therapist-rated alliance (r = .30, p = .001). Therapist rated outcome expectations were not significantly associated with patient-rated alliance (r = .09, p > .05) or therapist-rated alliance (r = .13, p > .05). Client-rated alliance was significantly associated with client-rated improvement post-therapy (r = .38, p < .001) and the therapist rated improvement post-therapy (r = .30, p < .001). Client-rated alliance mediated the association between outcome expectations and post-therapy improvement rated by both the client (β = .335, p < .001) and therapist (β = .236, p < .01). Therapist-rated alliance was also found to mediate the association between client outcome expectations and post-therapy improvement rated by the client (β = .261, p < .01) and therapist (β = .288, p < .001).	Evidence for partial mediation
Draheim & Anderson (2019)	The indirect effect of the therapeutic alliance at all timepoints (sessions 1 to 8) on post-therapy outcomes was nonsignificant. Bayes factors were estimated for the relationship between therapeutic alliance and symptom reduction, controlling for the effect of outcome expectancy and therapist effects. The calculated Bayes factors were between 0.33 and 3.00 for all of the post-therapy outcome measures (Fear of Negative Evaluation-Brief Form; FNEB: 0.61-1.9; Personal Report of Confidence as a Speaker; PRCS: 0.49- 1.29; Liebowitz Social Anxiety Scale; LSAS: 0.59-2.73).	No evidence for mediation

3.3. Narrative synthesis of main findings

Of the ten studies included in the review, two found evidence for full mediation, seven found evidence for partial mediation and one found no evidence to suggest the therapeutic alliance mediates the association between outcome expectations and post-therapy outcomes.

Evidence of full mediation. Two studies found evidence suggesting that the therapeutic alliance fully mediates the association between outcome expectations and post-therapy outcomes. Both of these studies demonstrated moderate risk of bias, due to missing reported outcome data (Meyer et al., 2002) and risk of bias in the measurement of the outcome (Johansson et al., 2011).

Following guidelines for mediation analysis proposed by Baron and Kenny (1986), Johansson et al. (2011) firstly found that outcome expectations were directly associated with post-therapy outcomes on the Psychodynamic Functioning Scale (PFS; predicted $R^2 = .07$, $F(1, 93) = 7.31$, $p = .008$) and Global Assessment of Functioning measure (GAF; predicted $R^2 = .05$, $F(1, 93) = 5.0$, $p = .030$). Similarly, Meyer et al. (2002) found outcome expectations were associated with post-therapy outcomes on the Beck Depression Inventory (BDI) and Hamilton Rating Scale for Depression (HAM-D) composite score ($r = .22$, $p < .01$).

Secondly, Johansson et al. (2011) found significant associations between outcome expectations and the Help and Understanding Scale (HUS), a client-rated alliance measure at session one ($r = .41$, $p < .001$). However, this association reduced at session seven ($r = .20$, $p = .06$); session 16 ($r = .24$, $p = .03$) and the final session ($r = .29$, $p = .03$). Outcome expectations were directly associated with the quality of the therapeutic alliance measured using the Working Alliance Inventory (WAI; predicted $R^2 = .11$, $F(1, 86) = 10.6$, $p = .002$) and the HUS (predicted $R^2 = .13$, $F(1, 93) = 14.2$, $p < .001$). Similar results were found by Meyer et al. (2002)

whereby outcome expectations were significantly correlated with the quality of the therapeutic alliance ($r = .27$, $p < .01$).

Both studies found that the alliance measure was significantly correlated with outcome measures. Johansson et al. (2011) found the patient-rated alliance measure HUS was significantly correlated with residual gain scores on the outcome measure PFS ($r = .36$, $p < .01$) and GAF ($r = .30$, $p < .01$). The WAI was also significantly correlated with residual gain scores on the PFS ($r = .40$, $p < .01$) and GAF ($r = .46$, $p < .01$). Whilst Meyer et al. (2002) found the alliance was significantly correlated with BDI and HAM-D composite scores ($r = .49$, $p < .01$). Finally, when mediator variables WAI or patient-rated HUS were included in the regression model, the association between outcome expectations and residual gain scores on the PFS and GAF became non-significant, which is indicative of full mediation (Johansson et al., 2011). Comparably, Meyer et al. (2002) found the effect of the alliance on clinical outcome remained significant when controlling for patient expectations ($ß = .47$, $sr^2 = .20$, $t(148) = 6.33$, $p < .01$). However, expectancy was no longer a significant predictor of outcome when alliance ratings were entered simultaneously into the regression model ($ß = .09$, $sr^2 = .01$, $t(148) = 1.20$, $p = .23$) which is evidence for full mediation.

Evidence of partial mediation. Seven studies found evidence to suggest that the therapeutic alliance partially mediates the association between outcome expectations and post-therapy outcomes. Partial mediation is indicated when the outcome expectation-clinical outcome association is reduced but still significant after the mediator variable of the alliance is entered into analysis. Three of the seven studies demonstrated low risk of bias (Constantino, Aviram et al., 2020; McClintock et al., 2015; Zagorscak et al., 2020) and were subsequently given greater weighting in the narrative synthesis.

Constantino, Aviram et al. (2020) found patients who reported more optimistic outcome expectations at session one, reported a stronger therapeutic alliance at the next session, and this was associated with lower levels of self-reported worry (indirect effect = - 0.02, *SE* = 0.008, *CI* = -0.04 to -0.007), suggesting alliance quality is a mediator of the relationship between outcome expectations and clinical outcomes. Similarly, McClintock et al. (2015), demonstrated that the effect of client outcome expectations on clinical outcome is mediated firstly by the therapeutic alliance and then by client-rated session positivity (β = -0.89, *CI* = -2.06 to -0.05). Session positivity in this study was a measure of clients' positive or negative mood when completing the therapy session. Likewise, Zagorscak et al. (2020) found outcome expectations measured at pre-assessment were positively associated with mid-treatment goal/task ratings (*b* = 0.25, *p* < .001) and bond ratings (*b* = 0.23, *p* < .001) on the Working Alliance Inventory-Revised (WAI-R; Hatcher & Gillaspy, 2006). Additionally, task/ goal ratings of the alliance assessed at session 5 were negatively associated with depressive symptom change between session 7 and end of therapy (*b* = -0.06, *p* = .004). There were no significant associations between bond ratings of the alliance and clinical outcomes, suggesting there are some aspects of the alliance that have a stronger association with treatment outcome than others.

Constantino, Aviram et al. (2020) found the direct effect between client-rated outcome expectations and post-therapy worry scores was significant when controlling for client and therapist-rated alliance (direct effect = - 0.23, *SE* = -0.03, *CI* = -0.28 to -0.16). This finding is evidence of partial mediation and suggests there may be mediator variables other than the alliance which influences this relationship. Meanwhile, McClintock et al. (2015), found the effect of outcome expectations on outcomes was nonsignificant when client-rated session positivity was entered into the model first, followed by the therapeutic alliance (β = -0.15, *CI* = -0.65 to 0.39). The presence of both the alliance and session positivity as mediator variables

in this study suggests that alliance alone only partially mediates the relationship between outcome expectations and clinical outcomes.

Overall, the results from these three studies, all rated as having low risk of bias suggest that more optimistic outcome expectations facilitate a stronger therapeutic alliance, specifically more positive ratings on the goal/task measure of alliance. This is in turn associated with a reduction in psychological distress and improved functioning. Evidence from these studies suggests that other mediating variables are involved in this association and therefore only partial mediation can be concluded from the results.

Four additional studies demonstrated moderate risk of bias and also found evidence to suggest that the therapeutic alliance partially mediates the association between outcome expectations and outcomes (Abouguendia et al., 2004; Joyce et al., 2003; Sauer-Zavala et al., 2018; Vîslă, Constantino et al., 2018).

Sauer-Zavala et al. (2018) found a significant indirect effect of outcome expectancy on change in anxiety scores post-therapy through the therapeutic alliance (β = 0.03, *SE* = 0.02, *CI* = .003 to 0.09). This indirect effect accounted for 6% of the variance in post-therapy anxiety symptoms (R^2_{med} = 0.06 [.004, 0.17]), suggesting that the therapeutic alliance only partially mediates this association. Meanwhile, Vîslă, Constantino et al. (2018) found a significant association between baseline outcome expectations and post-therapy outcomes, including depression scores (indirect effect = -1.294, *SE* = .719, *CI* = -2.933 to -0.159) and anxiety scores (indirect effect = -1.629, *SE* = .933, *CI* = -3.764 to -0.166) which was mediated by mid-treatment therapeutic alliance. An indirect effect of session 3 outcome expectations on post-therapy anxiety was mediated through session 5 alliance (indirect effect = -2.314, *SE* = .1.241, *CI* = -5.086 to -0.266) suggesting outcome expectations are a fluid construct which can change over the course of therapy.

Similarly, Abouguendia et al. (2004) found when client-rated alliance scores were included, the direct relationship between outcome expectations and post-therapy outcomes decreased on measures assessing general symptoms (β = -.18 to β = -.13, $p < .05$), grief symptoms (β = -.11 to β = -.04, $p < .05$) and life dissatisfaction (β = -.20 to β = -.16, $p < .05$). However, the relationship between outcome expectations and outcomes remained significant when the alliance mediator variable was included, suggesting that the alliance partially mediates this association. Finally, Joyce et al. (2003) found client-rated alliance mediated the association between client outcome expectations and post-therapy improvement rated by both the client (β = .335, $p < .001$) and therapist (β = .236, $p < .01$). The mediational effect of the alliance accounted for approximately one third of the direct effect of outcome expectations on outcome, providing evidence for partial mediation. Overall, evidence from three studies demonstrating low risk of bias and four studies demonstrating moderate risk of bias suggest that the alliance only partially mediates this association, indicating there are likely other variables involved.

No evidence for mediation. One study found no evidence for the mediational role of the therapeutic alliance between outcome expectations and post-therapy outcomes. Draheim and Anderson's (2019) study demonstrated moderate risk of bias due to a lack of reported results. Analysis of direct effects demonstrated that alliance was not associated with symptom reduction and consistent null results were found in this study. Bayes factors were estimated for the relationship between therapeutic alliance and symptom reduction, whilst controlling for the effect of outcome expectancy and therapist effects. The calculated Bayes factors were between 0.33 and 3.00 for all of the post-therapy outcome measures which is indicative of insensitive data. Results suggest that the therapeutic alliance does not mediate the association between outcome expectations and post-therapy outcomes across exposure-based treatments (group therapy and virtual reality exposure) for patients with social anxiety disorder.

4. Discussion

4.1. Summary of the evidence

This systematic review aimed to determine whether the therapeutic alliance mediates the association between outcome expectations and clinical outcomes. A review of current published literature found some evidence to suggest that the therapeutic alliance fully mediates this association. However, only two out of the ten studies included in the review found evidence for full mediation, meanwhile, seven studies found evidence to suggest the alliance partially mediates this association. The replicated findings documented in this review that the relationship between outcome expectations and post-therapy outcomes is reduced, but still significant when the alliance mediator variable is included suggests there are other variables involved in mediating this relationship.

The conclusion that the alliance partially mediates the association between outcome expectations and outcome supports the findings of a recent review published by Constantino, Coyne et al. (2020). Evidence from the three studies demonstrating low risk of bias suggested that patients who have more optimistic outcome expectations are able to develop a stronger therapeutic alliance with their therapists, which in turn impacts on post-therapy outcomes. Findings from studies which demonstrated moderate risk of bias provide further evidence for the mediational role of the alliance. It is possible, that patients who expect therapy to help them achieve their desired outcome, engage more fully in the tasks of treatment (Meyer et al., 2002; Zagorscak et al., 2020). Alternatively, it may be that expectations of improvement lead patients to focus on the positive aspects of the therapeutic alliance to confirm their expectation (Kirsch, 1997). This working alliance seems to be subsequently associated with improvement in functioning and reduction in disorder-specific symptoms.

There was evidence to suggest that specific aspects of the therapeutic alliance are associated with improved clinical outcomes. In one study, the task/ goal component of the working alliance was a significant predictor of post-therapy symptom change. Whereas, there were nonsignificant associations observed between the bond rating of the WAI-R and symptom improvement (Zagorscak et al., 2020). Similar results have been found by Webb et al. (2014). These findings suggest there may be specific components of the alliance that predict clinical improvement and that future studies should differentiate between components of the alliance when conducting their analysis.

Whilst this systematic review provides evidence to suggest the therapeutic alliance partially mediates the association between outcome expectations and post-therapy outcomes, there is a body of research suggesting there are some interventions and disorders where this pathway is less clear. Draheim and Anderson (2019) found evidence suggesting that the alliance does not mediate the association between outcome expectations and outcomes for patients participating in exposure-based treatments for social anxiety disorder. However, this was the only study in the review that found no evidence for partial mediation, and it was rated as having moderate risk of bias.

Similar evidence from studies not specifically conducting mediation analysis have found comparative results to Draheim and Anderson (2019). Strauss et al. (2018) found evidence to suggest that post-therapy outcomes following exposure and response prevention treatment for obsessive compulsive disorder (OCD) is not influenced by common factors such as outcome expectations and the therapeutic alliance. Together, these studies suggest that the mediating role of the alliance is less consistently evidenced within the context of anxiety disorders including social anxiety and OCD. Therefore, further research is needed to investigate the mediating role of the alliance when treating anxiety disorders to strengthen the evidence and conclusions that can be drawn from the data.

4.2. Methodological considerations

The inclusion criteria specified only studies published within peer-reviewed journals would be included in the review, and studies were subject to a risk of bias assessment. All studies demonstrated low or moderate risk of bias. However, only three out of the ten included studies demonstrated low risk of bias. All of the studies which were rated as having low risk of bias found evidence to suggest that the therapeutic alliance partially mediates the association between outcome expectations and outcomes. Four additional studies found evidence for partial mediation and demonstrated moderate risk of bias whilst a further two studies found evidence for full mediation and were rated as having moderate risk of bias. Only one study, which was rated as having moderate risk of bias found no evidence that the therapeutic alliance partially or fully mediated this association. However, methodological considerations described below highlight this area of research is in its infancy and has so far been restricted by consistent methodological flaws.

Research investigating outcome expectations is influenced by poor measurement of the construct. Firstly, outcome expectations have often been considered a static construct and measured at a single timepoint at the start of therapy (Constantino, Vîslă et al., 2018). However, evidence suggests that outcome expectations change as therapy progresses (Tsai et al., 2014; Vîslă, Flückiger et al., 2018; Webb et al., 2014). In a number of studies, outcome expectations were assessed using a study specific measure, often involving a single question. Meanwhile, other studies have used measures of outcome expectations which confound outcome expectations and other constructs. Outcome expectations are different to client treatment expectations which reflect patients' beliefs about what will occur during treatment and encompasses role expectations, process expectations (subjective experiences of psychotherapy) and duration expectations about how long therapy will last (Constantino, Vîslă et al., 2018).

Outcome expectations are also conceptually separate from treatment credibility, which reflect clients' perceptions of the how logical, suitable and efficacious treatment seems (Devilly & Borkovec, 2000) and therapist credibility which refers to how competent the practitioner is percieved (Strong, 1968). Historically, there has been debate over whether outcome expectations and credibility are overlapping or distinct constructs. Hardy et al. (1995) suggested the strength of positive outcome expectations develop based on how credible the treatment is perceived; indicating conceptual overlap. However, outcome expectations exist prior to the client having any information about the proposed intervention (Constantino, Coyne et al., 2018). Measures of outcome expectations and treatment credibility have shown significant correlations (Ametrano et al., 2017). However, they are now considered conceptually distinct concepts (Constantino, Coyne et al., 2018).

Borkovec and Nau's (1972) measure of outcome expectations was used in two of the primary studies. However, this scale does not differentiate between outcome expectations and perceptions of treatment credibility. Consequently, these two constructs are confounded within this measure. Devilly and Borkovec's (2000) Credibility/Expectancy Questionnaire does distinguish outcome expectations from treatment credibility and was used by two primary studies within the review. It is a limitation of the current literature in this field that the concepts of outcome expectations and credibility are often confounded due to the measures used. This has implications for the conclusions that can be drawn from this review.

Expectancy is also associated with a number of other constructs including: generalised hope, self-efficacy and motivation. Generalised hope has been hypothesised to play a role in clients' outcome expectations for treatment and evidence has shown outcome expectations measured at referral significantly correlate with general levels of hope (Swift et al., 2012). Additionally, low levels of hopelessness correlate positively with greater outcome expectations (Goldfarb, 2002).

Bandura (1994) defined self-efficacy as “people’s beliefs about their capabilities to produce designated levels of performance that exercise influence over events that affect their lives”. Self-efficacy beliefs can have a motivational influence within psychotherapy, as patients who do not believe they have the capabilities to successfully achieve a desired outcome are less likely to put in the required levels of effort needed to produce change. Focus on expectancies are one strategy used to enhance motivation to change within the context of CBT (Ryan et al., 2011). In support of this, evidence has shown expectancy predicts homework compliance within CBT which consequently resulted in symptom reduction, suggesting that expectancy is associated with motivation and outcomes (Westra et al., 2007).

Finally, there is increasing agreement that the placebo effect is enhanced by care provider characteristics. Placebo-rapport is a term used to describe the psychosocial factors of the healthcare encounter which have a positive effect on the client outside of the therapeutic intervention used (Sussex, 2018). Characteristics of the alliance including active listening, empathy and genuineness are known to enhance the alliance (Blasini et al., 2018). Evidence suggests that client perceptions of the therapist as non-judgemental, caring and supportive can be deemed therapeutic in itself (Kornhaber et al., 2016). Perceived warmth and competence in addition to positive expectations of treatment have been shown to enhance the placebo response within an experimental medical setting (Howe et al., 2017). Expectancy theory of the placebo effect posits that “a placebo produces an effect because the recipient expects it to” (Stewart-Williams & Podd, 2004). Furthermore, Lambert (2017) suggests approximately 15% of the effect of psychotherapy is attributable to the placebo effect which is defined as expectancy of improvement. Therefore, patients attending therapy with positive outcome expectations may demonstrate a greater placebo effect which is enhanced by the strength of the therapeutic alliance. It may be that outcome expectations and the therapeutic alliance are specifically related to the placebo effect in psychotherapy.

4.3. Strengths and limitations

This review adhered to good practice guidelines including the pre-registration of a review protocol prior to conducting searches and searching multiple databases with no date boundary, allowing for a more comprehensive search of the literature. Forward and backward citation searches and a detailed risk of bias assessment using a second reviewer to increase reliability of the process were conducted.

Limitations of the review include the screening of relevant studies by a single reviewer. Introducing a second reviewer into the screening process would increase the reliability of this process. The exclusion criteria stated articles not published in the English language or grey literature were not included within the review. Positive publication bias may therefore have inflated the association between outcome expectations and therapy outcomes and is a limitation of this review.

4.4. Clinical implications

This systematic review provides consistent evidence that the therapeutic alliance partially mediates the association between outcome expectations and post-therapy outcomes. These findings have clinical implications, as patients who attend initial psychotherapy appointments with higher outcome expectations have a solid foundation to build a stronger therapeutic relationship with their therapist. The stronger alliance is, in turn associated with improved clinical outcomes. However, not all patients attend therapy with positive outcome expectations. More pessimistic outcome expectations are associated with more severe symptomatology (Cohen et al., 2015; Elliott et al., 2015; Safren et al., 1997) and could be influenced by previous treatment failures.

Attempting to enhance initial outcome expectations could result in patients investing more within the therapeutic alliance. Together, positive outcome expectations and stronger alliance result in improved post-therapy outcomes. One strategy for improving initial outcome expectations could be brief interventions preceding formal therapy, which aim to instil higher outcome expectations in preparation for formal therapy. There is a growing evidence-base for the use of motivational interviewing (MI) at the start of treatment to enhance motivation to change and commitment to the intervention (Westra & Dozois, 2006; Westra et al., 2009; Randall & McNeil, 2017). It may be that MI or other preluding interventions could improve clients' outcome expectations, although this is yet to be investigated.

4.5. Conclusions and future directions

This review provides evidence that the therapeutic alliance partially mediates the relationship between outcome expectations and therapeutic outcomes. Future research should continue to specifically assess whether the therapeutic alliance mediates the outcome expectations-outcome association and add to the small evidence-base to date. Research would benefit from using measures that have demonstrated good psychometric properties, particularly in relation to assessing outcome expectations, and which consider outcome expectations as a distinct construct to treatment credibility. Future research should treat outcome expectations as a fluid, not static construct and consider measuring outcome expectations at multiple points during therapy. Finally, this field would benefit from research whereby outcome expectations are manipulated within controlled settings to investigate a causal rather than correlational relationship.

References

Abouguendia, M., Joyce, A. S., Piper, W. E., & Ogrodniczuk, J. S. (2004). Alliance as a mediator of expectancy effects in short-term group psychotherapy. *Group Dynamics: Theory, Research, and Practice, 8*(1), 3–12. https://doi.org/10.1037/1089- 2699.8.1.3

Ametrano, R. M., Constantino, M. J., & Nalven, T. (2017). The influence of expectancy persuasion techniques on socially anxious analogue patients' treatment beliefs and therapeutic actions. *International Journal of Cognitive Therapy, 10*(3), 187–205. https://doi.org/10.1521/ijct.2017.10.3.187

Andrews, M., Baker, A. L., Halpin, S. A., Lewin, T. J., Richmond, R., Kay-Lambkin, F. J., Filia, S. L., Castle, D., Williams, J. M., Clark, V., & Callister, R. (2016). Early therapeutic alliance, treatment retention, and 12-month outcomes in a healthy lifestyles intervention for people with psychotic disorders. *Journal of Nervous and Mental Disease, 204*(12), 894–902. https://doi.org/10.1097/NMD.0000000000000585

Arnkoff, D. B., Glass, C. R., & Shapiro, D. A. (2002). Expectations and preferences. In J. C. Norcross (Eds.), *Psychotherapy relationships that work: Therapist contributions and responsiveness to patients* (pp. 335–356). Oxford University Press.

Arnow, B. A., Steidtmann, D., Blasey, C., Manber, R., Constantino, M. J., Klein, D. N., Markowitz, J. C., Rothbaum, B. O., Thase, M. E., Fisher, A. J., & Kocsis, J. H. (2013). The relationship between the therapeutic alliance and treatment outcome in two distinct psychotherapies for chronic depression. *Journal of Consulting and Clinical Psychology, 81*(4), 627–638. https://doi.org/10.1037/a0031530

Austin, J. T., & Vancouver, J. B. (1996). Goal constructs in psychology: Structure, process, and content. *Psychological Bulletin, 120*(3), 338–375. http://dx.doi.org/10.1037/0033-2909.120.3.338

Bandura, A. (1994). Self-efficacy. In V. S. Ramachaudran (Eds.), *Encyclopaedia of Human Behavior.* (pp. 71-81). Academic Press.

Barber, J. P., Zilcha-Mano, S., Gallop, R., Barrett, M., McCarthy, K. S., & Dinger, U. (2014). The associations among improvement and alliance expectations, alliance during treatment, and treatment outcome for major depressive disorder. *Psychotherapy Research, 24*(3), 257-268. https://doi.org/10.1080/10503307.2013.871080

Baron, R. M., & Kenny, D. A. (1986). The moderator–mediator variable distinction in social psychological research: Conceptual, strategic, and statistical considerations. *Journal of Personality and Social Psychology, 51*(6), 1173-1182. https://doi.org/10.1037//0022-3514.51.6.1173

Bassler. M., Krauthauser, H., & Hoffmann, S. (1995). Which factors modify the duration of inpatient psychotherapy? *Psychotherapie, Psychosomatik, Medizinische Psychologie, 45*(5),167-175. https://pubmed.ncbi.nlm.nih.gov/7792384/

Bergman Nordgren, L., Carlbring, P., Linna, E., & Andersson, G. (2013). Role of the working alliance on treatment outcome in tailored internet-based cognitive behavioural therapy for anxiety disorders: Randomized controlled pilot trial. *JMIR Research Protocols, 2*(1), e4. http://doi.org/10.2196/resprot.2292

Blasini, M., Peiris, N., Wright, T., & Colloca, L. (2018). The role of patient-practitioner relationships in placebo and nocebo phenomena. *International Review of Neurobiology, 139,* 211-231. http://doi.org/10.1016/bs.irn.2018.07.033

Bordin, E. S. (1979). The generalizability of the psychoanalytic concept of the working alliance. *Psychotherapy: Theory, Research & Practice, 16*(3), 252–260. https://doi.org/10.1037/h0085885

Borkovec, T. D., & Nau, S. D. (1972). Credibility of analogue therapy rationales. *Journal of Behavior Therapy and Experimental Psychiatry, 3,* 257–260. https://doi.org/10.1016/0005-7916(72)90045-6

Burlingame, G., & Barlow, S. (1996). Outcome and process differences between professional and nonprofessional therapists in time-limited group psychotherapy. *International Journal of Group Psychotherapy, 46*(4), 455-478. https://doi.org/10.1080/00207284.1996.11491505

Burns, J. W., Nielson, W. R., Jensen, M. P., Heapy, A., Czlapinski, R., & Kerns, R. D. (2015). Does change occur for the reasons we think it does? A test of specific therapeutic operations during cognitive-behavioral treatment of chronic pain. *The Clinical Journal of Pain*, *31*(7), 603-611. https://doi.org/10.1097/AJP.0000000000000141

Burns, J. W., Nielson, W. R., Jensen, M. P., Heapy, A., Czlapinski, R., & Kerns, R. D. (2015). Specific and general therapeutic mechanisms in cognitive behavioral treatment of chronic pain. *Journal of Consulting and Clinical Psychology, 83*(1), 1-11. https://doi.org/10.1037/a0037208

Callahan, J. L., Aubuchon-Endsley, N., Borja, S. E., & Swift, J. K. (2009). Pretreatment expectancies and premature termination in a training clinic environment. *Training and Education in Professional Psychology, 3*(2), 111-119. https://doi.org/10.1037/a0012901

Clinton, D. N. (1996). Why do eating disorder patients drop out? *Psychotherapy and Psychosomatics, 65*(1), 29-35. https://doi.org/10.1159/000289028

Cloitre, M., Chase Stovall-McClough, K., Miranda, R., & Chemtob, C. M. (2004). Therapeutic alliance, negative mood regulation, and treatment outcome in child

abuse-related posttraumatic stress disorder. *Journal of Consulting and Clinical Psychology, 72*(3), 411-416. https://doi.org/10.1037/0022-006x.72.3.411

Cohen, M., Beard, C., & Björgvinsson, T. (2015). Examining patient characteristics as predictors of patient beliefs about treatment credibility and expectancies for treatment outcome. *Journal of Psychotherapy Integration, 25*(2), 90– 99. https://doi.org/10.1037/a0038878

Connolly Gibbons, M., Crits-Christoph, P., de la Cruz, C., Barber, J. P., Siqueland, L., & Gladis, M. (2003). Pretreatment expectations, interpersonal functioning, and symptoms in the prediction of the therapeutic alliance across supportive-expressive psychotherapy and cognitive therapy. *Psychotherapy Research*, *13*(1), 59-76. https://pubmed.ncbi.nlm.nih.gov/22475163/

Constantino, M. J., Arnkoff, D. B., Glass, C. R., Ametrano, R. M., & Smith, J. Z. (2011). Expectations. *Journal of Clinical Psychology*, *67*(2), 184-192. https://doi.org/10.1002/jclp.20754

Constantino, M. J., Arnow, B. A., Blasey, C., & Agras, W. S. (2005). The association between patient characteristics and the therapeutic alliance in cognitive-behavioral and interpersonal therapy for bulimia nervosa. *Journal of Consulting and Clinical Psychology, 73*(2), 203-211. https://doi.org/10.1037/0022-006X.73.2.203

Constantino, M. J., Aviram, A., Coyne, A. E., Newkirk, K., Greenberg, R. P., Westra, H. A., & Antony, M. M. (2020). Dyadic, longitudinal associations among outcome expectation and alliance, and their indirect effects on patient outcome. *Journal of Counseling Psychology, 67*(1), 40–50. https://doi.org/10.1037/cou0000364

Constantino, M. J., Coyne, A. E., Boswell, J. F., Iles, B. R., & Vîslă, A. (2018). A meta-analysis of the association between patients' early perception of treatment credibility

and their posttreatment outcomes. *Psychotherapy*, *55*(4), 486-495. https://doi.org/10.1037/pst0000168

Constantino, M. J., Coyne, A. E., Goodwin, B. J., Vîslă, A., Flückiger, C., Muir, H. J., & Gaines, A. N. (2020). Indirect effect of patient outcome expectation on improvement through alliance quality: A meta-analysis. *Psychotherapy Research*, 1-15. https://doi.org/10.1080/10503307.2020.1851058

Constantino, M. J., Manber, R., Ong, J., Kuo, T. F., Huang, J. S., & Arnow, B. A. (2007). Patient expectations and therapeutic alliance as predictors of outcome in group cognitive-behavioral therapy for insomnia. *Behavioral Sleep Medicine*, *5*(3), 210-228. https://doi.org/10.1080/15402000701263932

Constantino, M. J., Vîslă, A., Coyne, A. E., & Boswell, J. F. (2018). A meta-analysis of the association between patients' early treatment outcome expectation and their posttreatment outcomes. *Psychotherapy*, *55*(4), 473–485. https://doi.org/10.1037/pst0000169

Critical Appraisal Skills Programme (2018). *CASP Cohort Study Checklist.* https://casp-uk.net/wp-content/uploads/2018/01/CASP-Cohort-Study-Checklist_2018.pdf

Day, M. A., Halpin, J., & Thorn, B. E. (2016). An empirical examination of the role of common factors of therapy during a mindfulness-based cognitive therapy intervention for headache pain. *The Clinical Journal of Pain*, *32*(5), 420-427. https://doi.org/10.1097/AJP.0000000000000277

Delsignore, A., & Schnyder, U. (2007). Control expectancies as predictors of psychotherapy outcome: A systematic review. *British Journal of Clinical Psychology*, *46*(4), 467-483. https://doi.org/10.1348/014466507X226953

Devilly, G. J., & Borkovec, T. D. (2000). Psychometric properties of the credibility/ expectancy questionnaire. *Journal of Behavior Therapy and Experimental Psychiatry*, *31*(2), 73-86. https://doi.org/10.1016/s0005-7916(00)00012-4

Draheim, A., & Anderson, P. (2019). Working alliance does not mediate the relation between outcome expectancy and symptom improvement following cognitive behavioural therapy for social anxiety disorder. *The Cognitive Behaviour Therapist, 12*, E41. https://doi.org/10.1017/S1754470X19000266

Elliott, K. P., Westmacott, R., Hunsley, J., Rumstein-McKean, O., & Best, M. (2014). The process of seeking psychotherapy and its impact on therapy expectations and experiences. *Clinical Psychology and Psychotherapy, 22*(5), 399–408. http://dx.doi.org/10.1002/cpp.1900

Emmerling, M. E., & Whelton, W. J. (2009). Stages of change and the working alliance in psychotherapy. *Psychotherapy Research*, *19*(6), 687-698. https://doi.org/10.1080/10503300902933170

Flückiger, C., Del Re, A. C., Wampold, B. E., & Horvath, A. O. (2018). The alliance in adult psychotherapy: A meta-analytic synthesis. *Psychotherapy, 55*(4), 316-340. http://dx.doi.org/10.1037/pst0000172

Flückiger, C., Del Re, A. C., Wlodasch, D., Horvath, A. O., Solomonov, N., & Wampold, B. E. (2020). Assessing the alliance–outcome association adjusted for patient characteristics and treatment processes: A meta-analytic summary of direct comparisons. *Journal of Counseling Psychology*, *67*(6), 706–711. https://doi.org/10.1037/cou0000424

Frank, J. D. (1961). *Persuasion and healing: A comparative study of psychotherapy.* Johns Hopkins University Press

Freud, S. (1912/1958). The dynamics of transference. In J. Starchey (Eds.), *The standard edition of the complete psychological works of Sigmund Freud*: Volume 12 (pp. 99–108). Hogarth Press.

Fuertes, J. N., Anand, P., Haggerty, G., Kestenbaum, M., & Rosenblum, G. C. (2015). The physician–patient working alliance and patient psychological attachment, adherence, outcome expectations, and satisfaction in a sample of rheumatology patients. *Behavioral Medicine*, *41*(2), 60-68. https://doi.org/10.1080/08964289.2013.875885

Gaudiano, B. A., & Miller, I. W. (2006). Patients' expectancies, the alliance in pharmacotherapy, and treatment outcomes in bipolar disorder. *Journal of Consulting and Clinical Psychology*, *74*(4), 671–676. https://doi.org/10.1037/0022-006X.74.4.671

Goetter, E. M., Mauro, C. M., Qiu, X., Skritskaya, N. A., Reynolds, C. F., Zisook, S., Shear, M. K., & Simon, N. M. (2018). Treatment expectancy and working alliance in pharmacotherapy as predictors of outcomes in complicated grief. *Journal of Consulting and Clinical Psychology*, *86*(4), 367. https://doi.org/10.1037/ccp0000294

Goldfarb, D. E. (2002). College counseling center clients' expectations about counseling: How they relate to depression, hopelessness, and actual-ideal self-discrepancies. *Journal of College Counseling, 5*(2), 142–152. https://doi.org/10.1002/j.2161-1882.2002.tb00216.x

Goldfried, M. R. (1980). Toward the delineation of therapeutic change principles. *American Psychologist, 35*(11), 991–999. https://doi.org/10.1037/0003-066X.35.11.991

de Greef, M., van Hattum, M. J., Granger, K. L., McLeod, B. D., Pijnenburg, H. M., & Scholte, R. H. (2018). Predictors of parent-professional alliance in home-based

parenting support. *Children and Youth Services Review, 89,* 171-178. https://doi.org/10.1016/j.childyouth.2018.04.028

Greenberg, R. P., Constantino, M. J., & Bruce, N. (2006). Are patient expectations still relevant for psychotherapy process and outcome? *Clinical Psychology Review, 26*(6), 657-678. https://doi.org/10.1016/j.cpr.2005.03.002

Greenson, R. R. (1965). The working alliance and the transference neuroses. *The Psychoanalytic Quarterly, 34*(2), 155–181. https://doi.org/10.1080/21674086.1965.11926343

Greif, D. C. (2015). Alliance expectations and alliance as predictor of therapy engagement and outcome. [Doctoral dissertation, Antioch University]. https://aura.antioch.edu/cgi/viewcontent.cgi?article=1200&context=etds

Hardy, G. E., Barkham, M., Shapiro, D. A., Reynolds, S., Rees, A., & Stiles, W. B. (1995). Credibility and outcome of cognitive-behavioural and psychodynamic-interpersonal psychotherapy. *British Journal of Clinical Psychology, 34*(4), 555–569. https://doi.org/10.1111/j.2044-8260.1995 .tb01489.x

Hartley, D. E., & Strupp, H. H. (1983). The therapeutic alliance: Its relationship to outcome in brief psychotherapy. In J. Masling (Eds.), *Empirical studies of psychoanalytical theories* (pp. 1–37). Erlbaum.

Hatcher, R. L., & Gillaspy, J. A. (2006). Development and validation of a revised short version of the Working Alliance Inventory. *Psychotherapy Research, 16,* 12–25. http://doi.org/10.1080/10503300500352500

Heins, M. J., Knoop, H., & Bleijenberg, G. (2013). The role of the therapeutic relationship in cognitive behaviour therapy for chronic fatigue syndrome. *Behaviour Research and Therapy, 51*(7), 368-376. https://doi.org/10.1016/j.brat.2013.02.001

Hersoug, A. G., Høglend, P., Gabbard, G. O., & Lorentzen, S. (2013). The combined predictive effect of patient characteristics and alliance on long-term dynamic and interpersonal functioning after dynamic psychotherapy. *Clinical Psychology & Psychotherapy*, *20*(4), 297-307. https://doi.org/10.1002/cpp.1770

Hoffman, J. E. (2006). *Alliance as a predictor of outcome in group psychotherapy for binge eating disorder: Making the most predictive model through exploration of mediation and moderation.* [Doctoral dissertation, Pacific Graduate School of Psychology]. https://search.proquest.com/docview/304939605?accountid=13828

Hogan, L. R., Callahan, J. L., & Shelton, A. J. (2016). A matter of perception: Patient and therapist value differences impact working alliance and outcome. [Doctoral dissertation, Revista Argentine de Clínica Psicológica]. https://search.proquest.com/docview/2231317571?accountid=13828

Horvath, A. O., Del Re, A. C., Flückiger, C., & Symonds, D. (2011). Alliance in individual psychotherapy. *Psychotherapy*, *48*(1), 9-16. http://doi.org/ 10.1037/a0022186

Horvath, A. O., & Greenberg, L. S. (1989). Development and validation of the Working Alliance Inventory. *Journal of Counseling Psychology, 36*(2), 223-233. https://doi.org/10.1037/0022-0167.36.2.223

Horvath, A. O., & Symonds, B. D. (1991). Relation between working alliance and outcome in psychotherapy: A meta-analysis. *Journal of Counseling Psychology, 38*(2), 139–149. https://doi.org/10.1037/0022-0167.38.2.139

Howe, L. C., Goyer, J. P., & Crum, A. J. (2017). Harnessing the placebo effect: Exploring the influence of physician characteristics on placebo response. *Health Psychology, 36*(11), 1074–1082. https://doi.org/10.1037/hea0000499

Iwanaga, K., Chan, F., Tansey, T. N., Strauser, D., Ritter, E., Bishop, M., & Brooks, J. (2019). Working alliance and stages of change for employment: The intermediary role of autonomous motivation, outcome expectancy and vocational rehabilitation engagement. *Journal of Occupational Rehabilitation*, *29*(2), 315-324. https://doi.org/10.1007/s10926-018-9787-5

Johansson, P., Høglend, P., & Hersoug, A. G. (2011). Therapeutic alliance mediates the effect of patient expectancy in dynamic psychotherapy. *British Journal of Clinical Psychology*, *50*(3), 283-297. https://doi.org/10.1348/014466510X517406

Joyce, A. S., Ogrodniczuk, J. S., Piper, W. E., & McCallum, M. (2003). The alliance as mediator of expectancy effects in short-term individual therapy. *Journal of Consulting and Clinical Psychology*, *71*(4), 672–679. https://doi.org/10.1037/0022006X.71.4.672

Joyce, A. S., & Piper, W. E. (1998). Expectancy, the therapeutic alliance, and treatment outcome in short-term individual psychotherapy. *The Journal of psychotherapy practice and research*, *7*(3), 236–248. https://pubmed.ncbi.nlm.nih.gov/9631345/

Karver, M. S., Handelsman, J. B., Fields, S., & Bickman, L. (2006). Meta-analysis of therapeutic relationship variables in youth and family therapy: The evidence for different relationship variables in the child and adolescent treatment outcome literature. *Clinical Psychology Review*, *26*(1), 50–65. https://doi.org/10.1016/j.cpr.2005.09.001

Kim, S., Roth, W. T., & Wollburg, E. (2015). Effects of therapeutic relationship, expectancy and credibility in breathing therapies for anxiety. *Bulletin of the Menninger Clinic*, *79*(2), 116-130. https://doi.org/10.1521/bumc.2015.79.2.116

Kirsch, I. (1997). Specifying nonspecifics: Psychological mechanisms of placebo effects. In A. Harrington (Eds.), *The placebo effect: An interdisciplinary exploration* (pp. 166–186). Harvard University Press

Kirsch, I. (1985). Response expectancy as a determinant of experience and behavior. *American Psychologist, 40*(11), 1189–1202. https://doi.org/10.1037/0003-066X.40.11.1189

Kornhaber, R., Walsh, K., Duff, J., & Walker, K. (2016). Enhancing adult therapeutic interpersonal relationships in the acute health care setting: An integrative review. *Journal of Multidisciplinary Healthcare, 9,* 537–546. http://doi.org/10.2147/JMDH.S116957

Kuusisto, K., Knuuttila, V., & Saarnio, P. (2011). Pre-treatment expectations in clients: Impact on retention and effectiveness in outpatient substance abuse treatment. *Behavioural and Cognitive Psychotherapy*, *39*(3), 257-271. https://doi.org/10.1017/S1352465810000846

Lambert, M. J. (2017). Maximizing psychotherapy outcome beyond evidence-based medicine. *Psychotherapy and Psychosomatics, 86,* 80–89. http://doi.org/10.1159/000455170

Lee King, P. A., Cederbaum, J. A., Kurzban, S., Norton, T., Palmer, S. C., & Coyne, J. C. (2015). Role of patient treatment beliefs and provider characteristics in establishing patient–provider relationships. *Family Practice*, *32*(2), 224-231. https://doi.org/10.1093/fampra/cmu085

Leibert, T. W., & Dunne-Bryant, A. (2015). Do common factors account for counseling outcome? *Journal of Counseling & Development*, *93*(2), 225-235. https://doi.org/10.1002/j.1556-6676.2015.00198.x

Leuchter, A. F., Hunter, A. M., Tartter, M., & Cook, I. A. (2014). Role of pill-taking, expectation and therapeutic alliance in the placebo response in clinical trials for major depression. *The British Journal of Psychiatry*, *205*(6), 443-449. https://doi.org/10.1192/bjp.bp.113.140343

Long, C. G., Williams, M., Midgley, M., & Hollin, C. R. (2000). Within-program factors as predictors of drinking outcome following cognitive-behavioral treatment. *Addictive Behaviors*, *25*(4), 573-578. https://doi.org/10.1016/S0306-4603(99)00018-0

Magyar-Moe, J. L. (2003). *Predictors of therapy outcome: An attempt to explain more of the variance* [Doctoral dissertation, University of Kansas]. https://www.researchgate.net/publication/34265463_Predictors_of_therapy_outcome_an_attempt_to_explain_more_of_the_variance

Maher, M. J., Wang, Y., Zuckoff, A., Wall, M. M., Franklin, M., Foa, E. B., & Simpson, H. B. (2012). Predictors of patient adherence to cognitive-behavioral therapy for obsessive-compulsive disorder. *Psychotherapy and Psychosomatics*, *81*(2), 124-126. https://doi.org/10.1159/000330214

Marsden, T. E. (2014). *Client expectations and pretreatment attrition at a community mental health center*. [Doctoral dissertation, University of Central Arkansas]. https://search.proquest.com/openview/07792fba51f3566760238371f72c7f49/1?pq-origsite=gscholar&cbl=18750&diss=y

Martin, D. J., Garske, J. P., & Davis, M. K. (2000). Relation of the therapeutic alliance with outcome and other variables: A meta-analytic review. *Journal of Consulting and Clinical Psychology, 68*(3), 438–450. https://doi.org/10.1037/0022-006X.68.3.438

McClintock, A. S., Anderson, T., & Petrarca, A. (2015). Treatment expectations, alliance, session positivity, and outcome: An investigation of a three-path mediation

model. *Journal of Clinical Psychology*, *71*(1), 41-49. https://doi.org/10.1002/jclp.22119

Meyer, B., Pilkonis, P. A., Krupnick, J. L., Egan, M. K., Simmens, S. J., & Sotsky, S. M. (2002). Treatment expectancies, patient alliance and outcome: Further analyses from the National Institute of Mental Health Treatment of Depression Collaborative Research Program. *Journal of Consulting and Clinical Psychology, 70*(4), 1051–1055. https://doi.org/10.1037/0022-006X.70.4.1051

Moher, D., Liberati, A., Tetzlaff, J., Altman, D. G., The PRISMA Group (2009). Preferred Reporting Items for Systematic Reviews and Meta-Analyses: The PRISMA Statement. *BMJ, 339*, b2535. https://doi.org/10.1136/bmj.b2535

Moore, M. A. (2003). *Changes in the therapeutic alliance and symptomatology: use of a time series design to assess which comes first.* [Doctoral dissertation, University of Tennessee]. https://trace.tennessee.edu/utk_graddiss/5160/

Ogrodniczuk, J. S., & Sochting, I. (2010). *Outcome expectancy scale.* The University of British Columbia.

Park, J. (2017). *Counselor factors affecting the working alliance between rehabilitation counselors and clients with mental illness: Social cognitive perspective*. [Doctoral dissertation, Michigan State University]. https://search.proquest.com/openview/5d7be9c2f137e51af09dde9082453da1/1?pq-origsite=gscholar&cbl=18750&diss=y

Patterson, C. L. (2010). *Pretreatment role expectations, alliance, and outcome* [Doctoral dissertation, Ohio University]. https://etd.ohiolink.edu/!etd.send_ file?accession=ohiou1276547700&disposition=inline

Patterson, C. L., Anderson, T., & Wei, C. (2014). Clients' pretreatment role expectations, the therapeutic alliance, and clinical outcomes in outpatient therapy. *Journal of Clinical Psychology*, *70*(7), 673-680. https://doi.org/10.1002/jclp.22054

Patterson, C. L., Uhlin, B., & Anderson, T. (2008). Clients' pretreatment counseling expectations as predictors of the working alliance. *Journal of Counseling Psychology*, *55*(4), 528-534. https://doi.org/10.1037/a0013289

Pattison, L. A. (1993). *An exploratory study of the relationship between client expectations, session evaluation, and working alliance across the first four sessions of therapy.* [Doctoral dissertation, University of Missouri Columbia]. https://elibrary.ru/item.asp?id=5811926

Plöderl, M., Kunrath, S., Cramer, R. J., Wang, J., Hauer, L., & Fartacek, C. (2017). Sexual orientation differences in treatment expectation, alliance, and outcome among patients at risk for suicide in a public psychiatric hospital. *BMC psychiatry*, *17*(1), 184. https://doi.org/10.1186/s12888-017-1337-8

Popay, J., Roberts, H., Sowden, A., Petticrew, M., Arai, L., Rodgers, M., Britten, N., Roen, K., & Duffy, S. (2006). Guidance on the conduct of narrative synthesis in systematic reviews. Retrieved https://www.researchgate.net/profile/Mark-Rodgers-3/publication/233866356_Guidance_on_the_conduct_of_narrative_synthesis_in_systematic_reviews_A_product_from_the_ESRC_Methods_Programme/links/02e7e5231e8f3a6183000000/Guidance-on-the-conduct-of-narrative-synthesis-in-systematic-reviews-A-product-from-the-ESRC-Methods-Programme.pdf

Principe, J. M. (2005). *The effect of readiness to change on the development of the alliance in the first session of psychotherapy*. [Doctoral dissertation, Fielding Graduate

University]. https://search.proquest.com/openview/67b91dc0b0acf0f768da458ce2fe9f1f/1?pq-origsite=gscholar&cbl=18750&diss=y

Randall, C. L., & McNeil, D. W. (2017). Motivational interviewing as an adjunct to cognitive behavior therapy for anxiety disorders: A critical review of the literature. *Cognitive and Behavioral Practice, 24*(3), 296-311. http://doi.org/10.1016/j.cbpra.2016.05.003

Reeh, H. E. (2010). *The relationships between perceived therapeutic alliance, therapist self-disclosure, and dropout expectancy among male substance abuse treatment participants.* [Doctoral dissertation, Walden University]. https://scholarworks.waldenu.edu/dissertations/844/

Rotter, J. B. (1966). Generalized expectancies for internal versus external control of reinforcement. *Psychological Monographs: General and Applied, 80*(1), 1–28. https://doi.org/10.1037/h0092976

Rumpold, G., Doering, S., Smrekar, U., Schubert, C., Koza, R., Schatz, D. S., Bertl-Schuessler, A., Janecke, N., Lampe, A., & Schuessler, G. (2005). Changes in motivation and the therapeutic alliance during a pretherapy diagnostic and motivation-enhancing phase among psychotherapy outpatients. *Psychotherapy Research, 15*(2), 117–127. https://doi.org/10.1080/10503300512331327092

Ryan, R. M., Lynch, M. F., Vansteenkiste, M., & Deci, E. L. (2011). Motivation and autonomy in counseling, psychotherapy, and behavior change: A look at theory and practice. *The Counseling Psychologist, 39*(2), 193-260. http://doi.org/10.1177/0011000009359313

Safren, S. A., Heimberg, R. G., & Juster, H. R. (1997). Clients' expectancies and their relationship to pretreatment symptomatology and outcome of cognitive-behavioral

group treatment for social phobia. *Journal of Consulting and Clinical Psychology, 65*(4), 694–698. https://doi.org/10.1037/0022-006X.65.4.694

Sauer-Zavala, S., Boswell, J. F., Bentley, K. H., Thompson-Hollands, J., Farchione, T. J., & Barlow, D. H. (2018). Expectancies, working alliance, and outcome in transdiagnostic and single diagnosis treatment for anxiety disorders: An investigation of mediation. *Cognitive Therapy and Research, 42*(2), 135-145. https://doi.org/10.1007/s10608-017-9855-8

Shirk, S. R., & Karver, M. (2003). Prediction of treatment outcome from relationship variables in child and adolescent therapy: A meta-analytic review. *Journal of Consulting and Clinical Psychology, 71*(3), 452–464. https://doi.org/10.1037/0022-006X.71.3.452

Söchting, I., Tsai, M., & Ogrodniczuk, J. S. (2016). Patients' perceptions of treatment credibility and their relation to the outcome of group CBT for depression. *Archives of Psychiatry and Psychotherapy, 18*(4), 7-15. https://doi.org/10.12740/APP/66485

Sterne, J. A. C., Savović, J., Page, M. J., Elbers, R. G., Blencowe, N. S., Boutron, I., Cates, C. J., Cheng, H. Y., Corbett, M. S., Eldridge, S. M., Emberson, J. R., Hernán, M. A., Hopewell, S., Hróbjartsson, A., Junqueira, D. R., Jüni, P., Kirkham, J. J., Lasserson, T., Li, T., … Higgins, J. P. T. (2019). RoB 2: A revised tool for assessing risk of bias in randomised trials. *BMJ, 366*, l4898. https://doi.org/10.1136/bmj.l4898

Stewart-Williams, S., & Podd, J. (2004). The placebo effect: Dissolving the expectancy versus conditioning debate. *Psychological Bulletin, 130*(2), 324–340. https://doi.org/10.1037/0033-2909.130.2.324

Strauss, A. Y., Huppert, J. D., Simpson, H. B., & Foa, E. B. (2018). What matters more? Common or specific factors in cognitive behavioral therapy for OCD: Therapeutic

alliance and expectations as predictors of treatment outcome. *Behaviour Research and Therapy, 105*(1), 43-51. https://doi.org/10.1016/j.brat.2018.03.007

Strong, S. R. (1968). Counseling: An interpersonal influence process. *Journal of Counseling Psychology, 15*(3), 215–224. https://doi.org/10.1037/h0020229

Sussex, R. (2018). Describing placebo phenomena in medicine: A linguistic approach. In L. Colloca (Eds.), *Neurobiology of the placebo effect* (pp. 49–83). Academic Press.

Swift, J. K., Whipple, J. L., & Sandberg, P. (2012). A prediction of initial appointment attendance and initial outcome expectations. *Psychotherapy*, *49*(4), 549-556. https://doi.org/10.1037/a0029441

Szymańska, A., Dobrenko, K., & Grzesiuk, L. (2017). Characteristics and experience of the patient in psychotherapy and the effectiveness of psychotherapy. A structural approach. *Psychiatria Polska, 51*(4), 619-631. https://doi.org/10.12740/PP/62483

Tinsley, H. E., Workman, K. R., & Kass, R. A. (1980). Factor analysis of the domain of client expectancies about counseling. *Journal of Counseling Psychology, 27*(6), 561–570. https://doi.org/10.1037/0022-0167.27.6.561

Tokar, D. M., Hardin, S. I., Adams, E. M., & Brandel, I. W. (1996). Clients' expectations about counseling and perceptions of the working alliance. *Journal of College Student Psychotherapy*, *11*(2), 9-26. https://doi.org/10.1300/J035v11n02_03

Tracey, T. J., & Kokotovic, A. M. (1989). Factor structure of the Working Alliance Inventory. *Psychological Assessment,1,* 207–210. https://doi.org/10.1037/1040-3590.1.3.207

Tsai, M., Ogrodniczuk, J. S., Sochting, I., & Mirmiran, J. (2014). Forecasting success: Patients' expectations for improvement and their relations to baseline, process and

outcome variables in group cognitive–behavioural therapy for depression. *Clinical Psychology & Psychotherapy, 21*(2), 97–107. https://doi.org/10.1002/cpp.1831

Vîslă, A., Constantino, M. J., Newkirk, K., Ogrodniczuk, J. S., & Söchting, I. (2018). The relation between outcome expectation, therapeutic alliance, and outcome among depressed patients in group cognitive-behavioral therapy. *Psychotherapy Research, 28*(3), 446-456. https://doi.org/10.1080/10503307.2016.1218089

Vîslă, A., Flückiger, C., Constantino, M. J., Krieger, T., & Grosse Holtforth, M. (2018). Patient characteristics and the therapist as predictors of depressed patients' outcome expectation over time: A multilevel analysis. *Psychotherapy Research, 29*(6), 709-722. https://doi.org/10.1080/10503307.2018.1428379

Vogel, P. A., Hansen, B., Stiles, T. C., & Götestam, K. G. (2006). Treatment motivation, treatment expectancy, and helping alliance as predictors of outcome in cognitive behavioral treatment of OCD. *Journal of Behavior Therapy and Experimental Psychiatry, 37*(3), 247-255. https://doi.org/10.1016/j.jbtep.2005.12.001

Webb, C. A., Beard, C., Auerbach, R. P., Menninger, E., & Björgvinsson, T. (2014). The therapeutic alliance in a naturalistic psychiatric setting: Temporal relations with depressive symptom change. *Behaviour Research and Therapy, 61*, 70-77. https://doi.org/10.1016/j.brat.2014.07.015

Westra, H. A., Arkowitz, H., & Dozois, D. J. (2009). Adding a motivational interviewing pretreatment to cognitive behavioral therapy for generalized anxiety disorder: A preliminary randomized controlled trial. *Journal of Anxiety Disorders, 23*(8), 1106-1117. http://doi.org/10.1016/j.janxdis.2009.07.014

Westra, H. A., Constantino, M. J., Arkowitz, H., & Dozois, D. J. A. (2011). Therapist differences in cognitive–behavioral psychotherapy for generalized anxiety disorder: A pilot study. *Psychotherapy, 48*(3), 283–292. https://doi.org/10.1037/a0022011

Westra, H. A., Constantino, M. J., & Aviram, A. (2011). The impact of alliance ruptures on client outcome expectations in cognitive behavioral therapy. *Psychotherapy Research, 21*(4), 472-481. https://doi.org/10.1080/10503307.2011.581708

Westra, H. A., & Dozois, D. J. (2006). Preparing clients for cognitive behavioral therapy: A randomized pilot study of motivational interviewing for anxiety. *Cognitive Therapy and Research, 30*(4), 481-498. http://doi.org/10.1007/s10608-006-9016-y

Westra, H. A., Dozois, D. J. A., & Marcus, M. (2007). Expectancy, homework compliance, and initial change in cognitive behavioral therapy for anxiety. *Journal of Consulting and Clinical Psychology, 75,* 363-373. http://doi.org/10.1037/0022-006X.75.3.363

Yoo, S. K., Hong, S., Sohn, N., & O'Brien, K. M. (2014). Working alliance as a mediator and moderator between expectations for counseling success and counseling outcome among Korean clients. *Asia Pacific Education Review, 15*(2), 271-281. https://doi.org/10.1007/s12564-014-9320-2

Yuar, S.S., & Chen, C. F. (2011). Relationship among client's counseling expectations, perceptions of the counselor credibility and the initial working alliance. *Chinese Journal of Guidance and Counseling, 30,* 1–29. https://psycnet.apa.org/record/2011-24821-001

Zagorscak, P., Heinrich, M., Schulze, J., Böttcher, J., & Knaevelsrud, C. (2020). Factors contributing to symptom change in standardized and individualized Internet-based interventions for depression: A randomized-controlled trial. *Psychotherapy, 57*(2), 237-251. https://doi.org/10.1037/pst0000276

Zetzel, E. R. (1956). Current concepts of transference. *The International Journal of Psychoanalysis, 37,* 369–376. https://www.pep-web.org/document.php?id=ijp.037.

Appendix A

Search strategy

Scopus search strategy:

1. (psychotherap* OR therap* OR counsel* OR treatment OR "Psych* intervention")
2. (expecta* OR "patient expectations")
3. ("therapeutic alliance" OR "working alliance" OR "helping alliance" OR "therapeutic relationship" OR "psychotherap* alliance" OR alliance W/2 therap*)

Web of Science search strategy:

TS=(Psychotherap* OR Therap* OR counsel* OR Treatment OR “Psych* intervention”)
TS=(Expecta* OR “patient expectations”)
TS=(“therapeutic alliance” OR “working alliance” OR “helping alliance” OR “therapeutic relationship” OR “psychotherap* alliance” OR alliance NEAR/0 "therap*")

PsycINFO search strategy:

exp Psychotherapy/ or Psychotherap*.mp OR
exp Psychotherapy/ or Therap*.mp OR
exp Counseling/ or counsel*.mp OR
Treatment.mp. or exp Treatment/ OR
exp Intervention/ or "psych* intervention".mp.

AND

exp Expectations/ or expectation.mp. OR
exp Expectations/ or expectancy.mp OR
exp Expectations/ or "patient expectations".mp

AND

therapeutic alliance.mp. or exp Therapeutic Alliance/
exp Therapeutic Alliance/ or helping alliance.mp
working alliance.mp. or exp Therapeutic Alliance/
exp Therapeutic Alliance/ or therapeutic relationship.mp.
psychotherapy alliance.mp.
exp Therapeutic Alliance/ or "alliance in therapy".mp.

Appendix B

PRISMA checklist

Section/topic	#	Checklist item	Reported on page
TITLE			
Title	1	Identify the report as a systematic review, meta-analysis, or both.	1
ABSTRACT			
Structured summary	2	Provide a structured summary including, as applicable: background; objectives; data sources; study eligibility criteria, participants, and interventions; study appraisal and synthesis methods; results; limitations; conclusions and implications of key findings; systematic review registration number.	2
INTRODUCTION			
Rationale	3	Describe the rationale for the review in the context of what is already known.	3-6
Objectives	4	Provide an explicit statement of questions being addressed with reference to participants, interventions, comparisons, outcomes, and study design (PICOS).	7 (Table 1)
METHODS			
Protocol and registration	5	Indicate if a review protocol exists, if and where it can be accessed (e.g., Web address), and, if available, provide registration information including registration number.	6
Eligibility criteria	6	Specify study characteristics (e.g., PICOS, length of follow-up) and report characteristics (e.g., years considered, language, publication status) used as criteria for eligibility, giving rationale.	7 (Table 1)
Information sources	7	Describe all information sources (e.g., databases with dates of coverage, contact with study authors to identify additional studies) in the search and date last searched.	6-9
Search	8	Present full electronic search strategy for at least one database, including any limits used, such that it could be repeated.	50 (Appendix A)

Study selection	9	State the process for selecting studies (i.e., screening, eligibility, included in systematic review, and, if applicable, included in the meta-analysis).	9 (Figure 1)
Data collection process	10	Describe method of data extraction from reports (e.g., piloted forms, independently, in duplicate) and any processes for obtaining and confirming data from investigators.	8-9
Data items	11	List and define all variables for which data were sought (e.g., PICOS, funding sources) and any assumptions and simplifications made.	12-16 (Table 2 & 3)
Risk of bias in individual studies	12	Describe methods used for assessing risk of bias of individual studies (including specification of whether this was done at the study or outcome level), and how this information is to be used in any data synthesis.	8, 11, 58, 59
Summary measures	13	State the principal summary measures (e.g., risk ratio, difference in means).	10
Synthesis of results	14	Describe the methods of handling data and combining results of studies, if done, including measures of consistency (e.g., I^2) for each meta-analysis.	9-10
Risk of bias across studies	15	Specify any assessment of risk of bias that may affect the cumulative evidence (e.g., publication bias, selective reporting within studies).	8 & 11
Additional analyses	16	Describe methods of additional analyses (e.g., sensitivity or subgroup analyses, meta-regression), if done, indicating which were pre-specified.	N/A
RESULTS			
Study selection	17	Give numbers of studies screened, assessed for eligibility, and included in the review, with reasons for exclusions at each stage, ideally with a flow diagram.	9 (Figure 1)
Study characteristics	18	For each study, present characteristics for which data were extracted (e.g., study size, PICOS, follow-up period) and provide the citations.	12-16 (Table 2 & 3)
Risk of bias within studies	19	Present data on risk of bias of each study and, if available, any outcome level assessment (see item 12).	11, 58, 59
Results of individual studies	20	For all outcomes considered (benefits or harms), present, for each study: (a) simple summary data for each intervention group (b) effect estimates and confidence intervals, ideally with a forest plot.	18-22
Synthesis of results	21	Present results of each meta-analysis done, including confidence intervals and measures of consistency.	N/A
Risk of bias	22	Present results of any assessment of risk of bias across studies (see Item 15).	18-22

across studies			
Additional analysis	23	Give results of additional analyses, if done (e.g., sensitivity or subgroup analyses, meta-regression [see Item 16]).	N/A
DISCUSSION			
Summary of evidence	24	Summarize the main findings including the strength of evidence for each main outcome; consider their relevance to key groups (e.g., healthcare providers, users, and policy makers).	23-24
Limitations	25	Discuss limitations at study and outcome level (e.g., risk of bias), and at review-level (e.g., incomplete retrieval of identified research, reporting bias).	25-28
Conclusions	26	Provide a general interpretation of the results in the context of other evidence, and implications for future research.	29
FUNDING			
Funding	27	Describe sources of funding for the systematic review and other support (e.g., supply of data); role of funders for the systematic review.	N/A

Appendix C

Reasons for exclusion

First Author	Reasons for exclusion	DOI or Web address
Andrews, M.	No measure of outcome expectations	https://doi.org/10.1097/NMD.0000000000000585
Arnow, B.	No measure of outcome expectations	https://doi.org/10.1037/a0031530
Barber, J.	No measure of outcome expectations	https://doi.org/10.1080/10503307.2013.871080
Bassler, M.	Full text not in English language	https://europepmc.org/article/med/7792384
Bergman-Nordgren, L.	No measure of outcome expectations	https://doi.org/10.2196/resprot.2292
Burlingame, G.	No measure of outcome expectations	https://doi.org/10.1080/00207284.1996.11491505
Burns, J.	Physical health problem	https://doi.org/10.1097/AJP.0000000000000141
Burns, J.	Physical health problem	https://doi.org/10.1037/a0037208
Callahan, J.	Exploring therapy attendance not therapy outcomes	https://doi.org/10.1037/a0012901
Clinton, D.	Exploring therapy attendance not therapy outcomes	https://doi.org/10.1159/000289028
Cloitre, M.	No measure of outcome expectations	https://doi.org/10.1037/0022-006X.72.3.411
Connolly Gibbons, M.	No mediation analysis	https://doi.org/10.1093/ptr/kpg007
Constantino, M.	Physical health problem	https://doi.org/10.1080/15402000701263932
Constantino, M.	No mediation analysis	https://doi.org/10.1037/0022-006X.73.2.203
Day, M.	Physical health problem	https://doi.org/10.1097/AJP.0000000000000277

de Greef, M.	No psychotherapy intervention	https://doi.org/10.1016/j.childyouth.2018.04.028
Emmerling, M.	No measure of outcome expectations	https://doi.org/10.1080/10503300902933170
Fontao, M.	Full text not in English language	0[1]
Fuertes, J.	Physical health problem	https://doi.org/10.1080/08964289.2013.875885
Gaudiano, B.	No standardised outcome measure	https://doi.org/10.1037/0022-006X.74.4.671
Goetter, E.	No psychotherapy intervention	https://doi.org/10.1037/ccp0000294.
Greif, D.	Grey literature	https://aura.antioch.edu/cgi/viewcontent.cgi?referer=https://scholar.google.com/&httpsredir=1&article=1200&context=etds
Heins, M.	Physical health problem	https://doi.org/10.1016/j.brat.2013.02.001
Hersoug, A.	No mediation analysis	https://doi.org/10.1002/cpp.1770
Hoffman, J.	Grey literature	https://search.proquest.com/openview/5ac35cf9154e42e236a2528be82a8aa5/1?pq-origsite=gscholar&cbl=18750&diss=y
Hogan, L.	Full text not in English language	https://search.proquest.com/docview/2231317571?pq-origsite=gscholar&fromopenview=true
Iwanaga, K.	No psychotherapy intervention	https://doi.org/10.1007/s10926-018-9787-5
Joyce, A.	No standardised alliance measure	https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3330500/
Kim, S.	No psychotherapy intervention	https://doi.org/10.1521/bumc.2015.79.2.116
Kuusisto, K.	No standardised alliance measure	https://doi.org/10.1017/S1352465810000846
Lee King, P.	No measure of outcome expectations	https://doi.org/10.1093/fampra/cmu085
Leibert, T.	No psychotherapy intervention	https://doi.org/10.1002/j.1556-6676.2015.00198.x

Leuchter, A.	No psychotherapy intervention	https://doi.org/10.1192/bjp.bp.113.140343
Long, C.	No measure of outcome expectations	https://doi.org/10.1016/s0306-4603(99)00018-0
Magyar-Moe, J.	Grey literature	https://www.researchgate.net/publication/34265463_Predictors_of_therapy_outcome_an_attempt_to_explain_more_of_the_variance
Maher, M.	Exploring patient adherence not therapy outcomes	https://doi.org/10.1159/000330214
Manber, R.	Grey literature	0^2
Marsden, T.	Grey literature	https://search.proquest.com/openview/07792fba51f3566760238371f72c7f49/1?pq-origsite=gscholar&cbl=18750&diss=y
Moore, M.	Grey literature	https://trace.tennessee.edu/utk_graddiss/5160/
Park, J.	Grey literature	https://search.proquest.com/openview/5d7be9c2f137e51af09dde9082453da1/1?pq-origsite=gscholar&cbl=18750&diss=y
Patterson, C.	Grey literature	https://etd.ohiolink.edu/pg_10?0::NO:10:P10_ACCESSION_NUM:ohiou1276547700
Patterson, C.	No measure of outcome expectations	10.1002/jclp.22054
Patterson, C.	No measure of outcome expectations	https://doi.org/10.1037/a0013289
Pattison, L.	Grey literature	https://www.elibrary.ru/item.asp?id=5811926
Plöderl, M.	No psychotherapy intervention	https://doi.org/10.1186/s12888-017-1337-8
Principe, J.	Grey literature	https://search.proquest.com/openview/67b91dc0b0acf0f768da458ce2fe9f1f/1?pq-origsite=gscholar&cbl=18750&diss=y
Reeh, H.	Grey literature	https://scholarworks.waldenu.edu/dissertations/844/
Rumpold, G.	No psychotherapy intervention	https://doi.org/10.1080/10503300512331327092

Shin, H.	Full text not in English language	0[3]
Sochting, I.	No measure of outcome expectations	https://doi.org/10.12740/APP/66485
Strauss, A.	No mediation analysis	https://doi.org/10.1016/j.brat.2018.03.007
Swift, J.	Exploring therapy attendance not therapy outcomes	https://doi.org/10.1037/a0029441
Szymanska, A.	No standardised alliance measure	http://psychiatriapolska.pl/uploads/images/PP_4_2017/ENGver619Szymanska_PsychiatrPol2017v51i4.pdf
Tokar, D.	Not exploring therapy outcomes	https://doi.org/10.1300/J035v11n02_03
Tsai, M.	No mediation analysis	https://doi.org/10.1002/cpp.1831
Vîslă, A.	No mediation analysis	https://doi.org/10.1080/10503307.2018.1428379
Vogel, P.	No mediation analysis	https://doi.org/10.1016/j.jbtep.2005.12.001
Von Faller, H.	Full text not in English language	0[4]
Webb, C.	No mediation analysis	http://dx.doi.org/10.1016/j.brat.2014.07.015
Westra, H.	No mediation analysis	https://doi.org/10.1037/a0022011
Westra, H.	No mediation analysis	https://doi.org/10.1080/10503307.2011.581708
Yoo, S-K.	Non-clinical sample	https://doi.org/10.1007/s12564-014-9320-2
Yuar, S-S.	Not exploring therapy outcomes	https://psycnet.apa.org/record/2011-24821-001

Note: The first author, reason for exclusion and DOI or website address have been provided for conciseness. Where the DOI or website address is not available, the title has been provided below.

0[1] Therapeutic alliance and therapeutic processes in a group therapy with substance addicted offenders.

0[2] Therapeutic alliance and patient expectations as predictors of outcome in group CBT for insomnia.

0[3] The Effects of Counselor's and Client's Counseling Expectation and Working Alliance on Session Evaluation: Testing Actor and Partner Effects.

0[4] The relevance of the working alliance for diagnosis and treatment selection in psychotherapy patients.

Appendix D

Risk of bias assessment adapted from CASP checklist for cohort studies

First Author & Year	Clearly focussed issue	Cohort recruitment	Accuracy of expectation/ alliance measure	Accuracy of therapy outcome	Identification of important confounding factors	Taking confounding factors into account	Completeness of results	Precision of results	Believability of results	Applicability to intended population	Fit the wider evidence	Implications of study	Overall risk of bias rating
McClinktock et al. (2015)	Low	Low	Low	Low	Low	Low	Low	Low	Low	Low	Low	Low	Low
Vîslă, Constantino et al. (2018)	Low	Low	Low	Low	Moderate	Moderate	Low	Low	Low	Low	Low	Low	Moderate
Abouguendia et al. (2004)	Low	Low	Moderate	Low	Low	Low	Low	Moderate	Moderate	Low	Low	Low	Moderate
Joyce et al. (2003)	Low	Low	Moderate	Moderate	Low	Low	Low	Moderate	Low	Low	Low	Low	Moderate

Appendix E

Risk of bias assessment adapted from revised Cochrane risk-of-bias tool for randomised trials (RoB 2)

First Author and Year	Risk of bias arising from the randomisation process	Risk of bias due to deviations from the intended interventions	Risk of bias due to missing outcome data	Risk of bias in measurement of the outcome	Risk of bias in selection of the reported results	Overall Rating
Constantino, Aviram et al. (2020)	Low	Low	Low	Low	Low	Low
Draheim & Anderson (2019)	Low	Low	Low	Low	Moderate	Moderate
Johansson et al. (2011)	Low	Low	Low	Moderate	Low	Moderate
Meyer et al. (2002)	Low	Low	Moderate	Low	Moderate	Moderate
Sauer- Zavala et al. (2018)	Low	Moderate	Low	Low	Low	Moderate
Zagorscak et al. (2020)	Low	Low	Low	Low	Low	Low

Section Two: Empirical Research

‘Great expectations’: Outcome expectations and therapist effects in predicting therapy attendance and dropout.

Abstract

Objective. Patient dropout is common in the field of psychological interventions and it is associated with poorer treatment outcomes. To date, evidence has shown that patients' expectations about therapy influence their treatment attendance and response, such that more optimistic expectations are associated with improved engagement and outcomes. This study aimed to investigate whether patient attendance and dropout in therapy is associated with pre-treatment expectancy ratings provided at the end of their initial assessment contact with a therapist, and whether expectancy ratings vary systematically depending on which therapist conducts the assessment.

Method. Multilevel modelling (MLM) was used to determine if patients' expectations at initial assessment in a psychological therapy service predicted subsequent attendance at a first therapy session. The sample comprised n = 6051 patients nested within k = 148 assessing therapists. The association between outcome expectations and patient dropout was also examined. Variability in patient expectations across different assessing therapists was investigated using MLM.

Results. Patient expectancy was a significant predictor of attendance at the first therapy session after controlling for the effect of the assessing therapist. However, expectancy did not predict later dropout from the scheduled treatment. There was a significant therapist effect of 15.87% on patient expectancy. Analysis of therapist residuals showed substantial variability in expectancy ratings across assessing therapists after controlling for case-mix variables.

Conclusions. Outcome expectations at initial assessment significantly predict attendance at a first therapy session, once controlling for the effect of the assessing therapist. However, outcome expectancy ratings taken at an initial assessment do not predict treatment dropout, once patients commence treatment. There is significant variability in outcome expectancy

ratings across different assessing therapists' caseload which is greater than that expected by chance after controlling for patients' characteristics.

1. Introduction

1.1 Background

In England, psychological therapy is frequently accessed through Improving Access to Psychology Therapy (IAPT) services. The National Health Service (NHS) in England aims to increase the number of patients seen within IAPT services to 1.9 million by 2023/24 (NHS England, 2021). Considerations for ways to improve this service is an ongoing focus of research. Data from referrals made to IAPT between 2017-2018 found that 60% of those referred did not complete treatment, when treatment completion was defined as completing two sessions or more (Moller et al., 2019). These figures highlight the ongoing problem of patient dropout within primary care services in the United Kingdom (UK).

1.2 Patient engagement and dropout

Dropout occurs when a patient unilaterally ends therapy by not attending sessions before the planned endpoint (Westmacott et al., 2010). Patient dropout is an issue within psychotherapy that limits the effectiveness of psychological interventions (Barrett et al., 2008; Hatchett & Park, 2003; Swift et al., 2009) as patients are not receiving an "adequate dose" of therapy to result in a reduction of symptoms (Kadera et al., 1996). Consequently, dropout is associated with poorer treatment outcomes in the wider psychotherapy literature (Cahill et al., 2003; Klein et al., 2003; Lampropoulos, 2010) and also within IAPT services (Delgadillo et al., 2014).

Historically, dropout has been operationalised in different ways. For example, dropout defined by two consecutive missed sessions (Kolb et al., 1985), failure to attend the final scheduled therapy session (Hatchett et al., 2002), failure to return after an initial assessment session (Longo et al., 1992) or patient-initiated termination without the agreement of the therapist

irrespective of the number of sessions completed (Berrigan & Garfield, 1981). These variations in dropout definitions have a subsequent impact on research findings (Barrett et al., 2008). More recently, distinctions have been made between early dropout or rejecting therapy, defined as patients engaging in an initial assessment and being eligible for psychotherapy but never commencing their treatment. This is compared to treatment dropout or early discontinuation in therapy, which occurs when a patient starts an intervention but discontinues prior to recovering from problems for which they sought treatment (Swift & Greenberg, 2012).

There are inconsistent findings regarding the predictors of patient dropout. In some studies, there is some evidence to suggest client demographic variables such as age, gender and socioeconomic status predict treatment dropout (Baekeland & Lundwall, 1975), whilst others have found no consistent association between patient demographic variables and dropout (Clarkin & Levy, 2004; Garfield, 1994; Wierzbicki & Pekarik, 1993). Meta-analytic findings from Swift and Greenberg (2012) found only client diagnosis and age were consistently associated with patient dropout whilst no other patient demographic variables consistently predicted dropout.

Whilst there is inconsistent evidence linking patient demographic variables with treatment dropout, there is emerging evidence to suggest treatment dropout is associated with patients' expectations (Arnkoff et al., 2002; Aubuchon-Endsley & Callahan, 2009; Greenberg et al., 2006). Experimental research has found that addressing patients' expectations about the duration of psychological treatment had a significant impact on patient dropout (Swift & Callahan, 2011). These results indicated that patients given information about the dose-effect model, specifying that on average it takes between 13-18 therapy sessions for 50% of patients to recover, were significantly more likely to complete treatment compared to patients in the control group. This evidence suggests that enhancing patient expectations at the early stages of treatment can maximise patient engagement and minimise dropout.

1.3 Outcome expectations

Outcome expectations are another type of patient expectation which reflects "patients' prognostic beliefs about the consequences of engaging in treatment" (Constantino et al., 2011). These expectations exist on a continuum from positive expectations that engaging in the therapy will lead to future improvement through to negative expectations, that engaging in the therapy will not result in improvements. Replicated meta-analytic results have found that more positive outcome expectations are associated with improved clinical outcomes (Constantino et al., 2011; Constantino et al., 2018). In the UK, research from IAPT services has found that patient characteristics, including low expectations about the potential benefit of therapy at pre-treatment assessment were associated with depression and anxiety treatment outcomes and dropout rates (Delgadillo et al., 2016).

These findings can be understood through *goal theory*, which suggests that people will devote more resources to achieve a goal if they believe they have a chance of attaining it (Austin & Vancouver, 1996). Goal theory posits that patients with more positive outcome expectations are more likely to engage in a collaborative working relationship with their therapist which fosters clinical improvement. There is emerging evidence to suggest that the association between optimistic outcome expectations and improved patient outcomes is partially mediated by the quality of the therapeutic alliance (Abouguendia et al., 2004; Constantino, Aviram et al., 2020; Constantino, Coyne et al., 2020; Johansson et al., 2011; Joyce et al., 2003; McClintock et al., 2015; Meyer et al., 2002; Sauer-Zavala et al., 2018; Vîslă et al., 2018; Zagorscak et al., 2020;). These studies suggest that patients with more optimistic outcome expectations are more likely to engage in a positive working relationship with their therapist, which subsequently results in better clinical outcomes.

Whilst the association between outcome expectations and clinical outcomes has been the focus of emerging research in this field, there are currently few studies investigating the

association between outcome expectations, treatment attendance and dropout. One study by Swift et al. (2012) found no significant relationship between pretherapy outcome expectations and attendance at an initial therapy appointment. A second study by Norberg et al. (2011) also found patients that did not attend therapy had equally high outcome expectations as those who attended, suggesting that early outcome expectations may not be important in determining whether a patient attends their first therapy appointment. However, within both of these studies, the role of the therapist in potentially influencing patient outcome expectations was not addressed. In theory, it is plausible to assume that patients' outcome expectations could be influenced by the initial interaction they have with therapists at an initial assessment, which could either persuade or dissuade them from pursuing further appointments. Furthermore, given the well-documented variability in treatment outcomes between different therapists (Baldwin & Imel, 2013), it is possible that therapists doing initial assessments could influence patients' expectations in different ways.

1.4 Study aims

The present study aimed to investigate if patients' pre-treatment expectancies differ systematically between assessing therapists (as potential evidence that the assessment contact influences expectations) and if pre-treatment expectancies might influence subsequent attendance at therapy appointments. Accordingly, the study will address two research questions:

1) Does pre-treatment outcome expectancy at an initial assessment predict attendance at subsequent psychological therapy appointments?

2) Is some of the variability in pre-treatment outcome expectancy attributable to the assessing therapist after controlling for patients' characteristics?

The study aims to test the following hypotheses: (1) Patients with more optimistic outcome expectations will have a higher probability of attending the first therapy session. (2) Patients with

more optimistic outcome expectations will have a higher probability of completing an episode of therapy (rather than dropping out). (3) There will be systematic variability in outcome expectancy ratings across different therapists' assessment caseloads, which will be greater than that expected by chance, after controlling for patients' characteristics (case-mix variables). The above research questions will be answered using multilevel modelling (MLM), which is the recommended method for investigating variability in outcomes across patients and therapists when there is a nested relationship (Baldwin & Imel, 2013).

2. Method

2.1 Setting

The National Institute for Health and Care Excellence (NICE) guidelines recommend common mental health problems are treated with evidence-based psychological interventions within a model of stepped care (NICE, 2011). In 2008, these guidelines were implemented in the UK through the development of the IAPT programme. IAPT services deliver psychological inventions following principles of stepped care (Bower & Gilbody, 2005). Patients are initially offered brief (< 8 sessions), low intensity sessions using guided self-help following cognitive behavioural therapy (CBT) principles. If guided self-help is unsuccessful for reducing symptoms, patients are stepped up to high-intensity psychological therapy which includes formal CBT and other therapies such as eye movement desensitization and reprocessing therapy (EMDR) or interpersonal psychotherapy (IPT) delivered over a longer time-frame (16 to 20 sessions). Psychological interventions provided by IAPT services are evidenced-based and protocol-driven, in line with competency frameworks and delivered under regular clinical supervision (Kellett et al., 2021). Within IAPT services, patients are offered an initial assessment to determine suitability for the treatment and to establish which treatment pathway is indicated within the stepped-care model. These assessments are usually carried out by a therapist that is not the same person as the therapist that delivers the actual psychological

intervention, which commences after the initial assessment contact. Routine outcome monitoring of treatment response using validated symptom measures enables clinical outcomes to be tracked and large-scale evaluation of IAPT services to be undertaken (Wakefield et al., 2021).

2.2 Data sources

Fully-anonymised archival data were collected for this study from an IAPT service in the north of England which systematically collects expectancy measures at the end of every initial assessment appointment. Ethical approval for secondary analyses of this dataset was obtained from an NHS research ethics committee within North East-Newcastle & North Tyneside and was approved by the Health Research Authority (REC Reference: 15/NE/0062). An amendment for re-analysis of the original dataset was submitted and subsequent ethical approval was confirmed.

2.3 Sample selection criteria

For the current study, only patients meeting the inclusion criteria were included in the sample. Inclusion criteria was as follows: (1) Patients who were aged 18 years and older; (2) Patients who accessed the IAPT service between February 2012 to November 2015; (3) Patients who answered a question about outcome expectancy during their first assessment appointment with a therapist. Exclusion criteria was as follows: (1) Patients who were recorded by clinicians as being unsuitable for therapy within the IAPT service; (2) Patients who were referred to another service following assessment; (3) Patients who did not complete the expectancy question at initial assessment. A priori power calculations were conducted using guidelines proposed by Schiefele et al (2017), which suggest an overall sample size of 1,200 patients are needed with variable number of therapists and patients per therapist. The sample sizes

of n = 6,051 in the primary dataset and n = 4,633 in the dropout subsample are above this cut off, suggesting that the study was adequately powered. The primary datasets included therapists who had seen a minimum of two patients and sensitivity analyses were conducted using only therapists who had seen 30 patients or more.

The original dataset including patients suitable for the IAPT service comprised clinical records for n = 10829 patients assessed by k = 160 therapists. The primary dataset used for this study comprised clinical records for n = 6051 patients initially assessed by k = 148 therapists. Therapists' initial assessment caseload size ranged from 2 to 211. In this sample the mean patient age (SD) was 37.23 (13.65) years; 64.2% (n = 3,887) were female. A total of 39.7% (n = 2401) were unemployed and 8.9% (n = 537) identified as minority ethnic. Mean (SD) baseline scores on the Patient Health Questionnaire (PHQ-9) were 14.96 (6.19) and 13.52 (4.98) for the Generalised Anxiety Disorder Assessment (GAD-7). Analysis of baseline PHQ-9 scores showed that 79.7% (n = 4820) patients had depression scores within the moderate to severe range and 72.3% (n = 4375) patients had anxiety scores within the moderate to severe range on the baseline GAD-7.

2.4 Dropout subsample

A dropout dataset was established using a subsample of patients who attended at least one therapy session after the initial assessment session. This dataset comprised n = 4,633 patients. The mean (SD) age of patients was 37.61 (13.67) years; 64.6% were female. Within this subsample, 38.1% (n = 1764) were unemployed and 8.8% (n = 407) were from an ethnic minority. Mean (SD) baseline PHQ-9 scores were 14.69 (6.17) and GAD-7 scored were 13.41 (4.96). A flow chart describing how the samples were derived from the original dataset are displayed in figure 1.

2.5 Measures

Outcome variables for the three hypotheses are outlined below.

1) **Attendance in therapy.** For hypothesis one, attendance at a minimum of one therapy session after an initial pre-treatment assessment was established. A binary outcome of whether a patient attended 'assessment only' or 'assessment and treatment' was used as a dependent variable. This information was contained in clinical records for all patients.
2) **Dropout of therapy**. For hypothesis two, within the group of patients that attended at least one therapy appointment, a binary outcome of whether they 'completed scheduled treatment' or 'dropped out of therapy' was established. This information was contained in clinical records for all patients.
3) **Outcome expectancy rating.** For hypothesis three, a continuous variable of outcome expectancy rating was used. Patient outcome expectations were measured at the end of the first assessment session using the standardised question "At this point in time how confident are you that this kind of treatment will work for you on a scale of 0 to 10?" (Lutz et al. 2007). Respondents rated on a 10-point Likert scale (0 = low outcome expectancy and 10 = high outcome expectancy). This measure was found to be a reliable predictor of depression and anxiety treatment outcomes in an IAPT setting (Delgadillo et al., 2016).

2.6 Statistical analysis

2.6.1 Pre-processing of categorical data

Data was first analysed in IBM SPSS Statistics (version 25). In the original dataset, patient employment and prescribed medication status had a number of response options. These were merged into fewer categories to assist with the multilevel model interpretation. For the

unemployment variable, a binary outcome of 'unemployed', comprising unemployed job seeker (*n* = 1127), long term sick or disabled (*n* = 1070), unemployed, not seeking work (*n* = 204) was compared to 'other' comprising employed (*n* = 2582), retired (*n* = 250), student (*n* = 378), voluntary worker (*n* = 60), homemaker (*n* = 331). Patients with missing employment status data (*n* = 49) were included in the dataset. Similarly, a binary variable of 'prescribed medication', comprising patients prescribed and taking medication (*n* = 2641) and prescribed but not taking medication (*n* = 3183) was compared to 'not prescribed', comprising patients not prescribed medication (*n* = 151).

2.6.2 Regression models

For each of the hypotheses being tested, a single-level regression model containing patient variables was developed first before extending this to a multilevel model using MLwiN software v3.05 (Charlton et al., 2020). Continuous variables were grand mean centred (Wampold & Brown, 2005). The significance of predictor variables was determined using z-ratios, calculated by multiplying the standard errors by 1.96; if this calculation was less than the coefficient the results were considered significant at the 5% level. The single-level regression model was extended to a multilevel model where patients (level 1) were nested within assessing therapists (level 2). This allows the overall variance to be partitioned between patient (level 1) and therapist (level 2).

For multilevel models with binary outcomes, the variance partition coefficient (VPC) measure was obtained using a linear threshold model (Snijders & Bosker, 1999). The default estimation procedure 1st order marginal quasi-likelihood (MQL) was used first. However, this procedure can lead to inflated estimates of therapist effects and 2nd order predictive quasi-likelihood (PQL) is preferred (Rasbash et al., 2020). Multilevel model analysis using 1st order MQL and 2nd order PQL were conducted separately, the results from the primary and sensitivity

analyses are reported using 2nd order PQL. Analysis of random slopes were conducted to determine whether the relationship between expectancy and attendance varied significantly between therapists.

Random intercept multilevel models were developed by adding a random intercept at the therapist level. The only therapist variable available within the dataset was a unique therapist identifier, no additional therapist-level variables were included in the multilevel model. A significant random intercept indicates significant variability at the therapist-level. MLwiN software was used to establish whether the multilevel model was a better fit for the data compared to the single-level regression model. This was assessed by comparing the change in -2*loglikelihood ratios derived from the single and multilevel models against the chi-squared statistic for the additional degrees of freedom.

Therapist effect is defined as the percentage of the overall variance that is attributable to the therapist (level 2). To calculate the percentage of the overall variance attributable to the therapist, the therapist level variance is divided by the total variance to establish an intraclass correlation coefficient (ICC). The ICC is multiplied by 100 to determine an estimate for therapist effect. The significance of the therapist effect is calculated using z-ratios. Caterpillar plots are used to display therapist residuals and their 95% confidence intervals (CIs) which represent how much outcome expectations of each therapist deviates from the average, after controlling for patient case-mix variables. This enables three groups of therapists to be identified. Therapists whose CIs cross the average (residual = 0) are not producing significantly different expectancy ratings to the average therapist. Therapists whose CIs do not cross the average, are either above or below average and producing significant differences in their patients' outcome expectancy ratings.

2.7 Sensitivity analyses

Sensitivity analyses were carried out on data from a subsample of therapists who had assessed a minimum of 30 patients. Estimates of therapist variability are considered to be more reliable when 30 or more patients are seen per therapist (Soldz, 2006). Additionally, guidelines for the number of therapists needed for reliable testing of therapist effects in multilevel modelling suggest a minimum of 50 therapists at level 2 (Maas & Hox, 2005). The number of therapists needed for MLM was adhered to within the sensitivity analysis (n = 71).

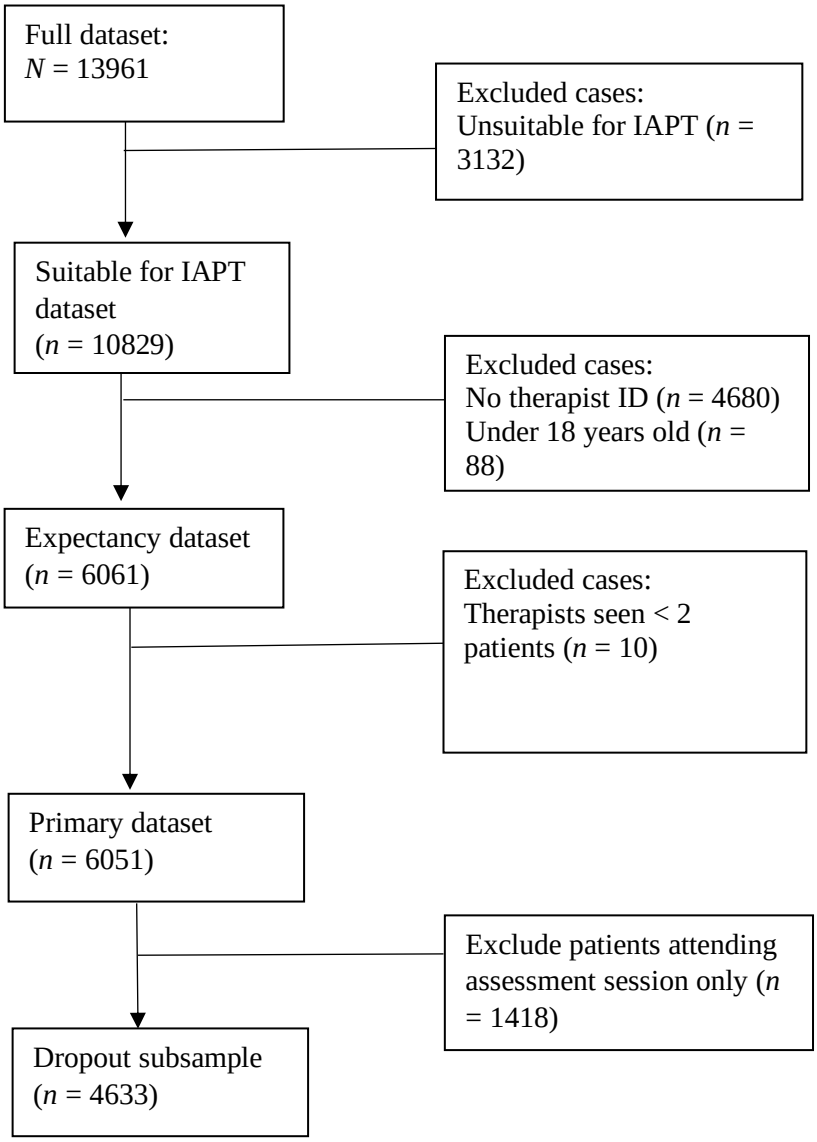

Figure 1. Flowchart showing how the study samples were selected from the full data sample.

3. Results

The results of the analyses are presented in three sections according to the three hypotheses being tested. All three sections include a summary of descriptive statistics of the samples, followed by multilevel model analysis and therapist effects. Sensitivity analyses for each of the three hypotheses are presented in the appendices.

3.1 Hypothesis 1: Patients with more optimistic outcome expectations will have a higher probability of attending the first therapy session.

For the attendance at first therapy session sample (n = 6051), the proportion of patients who attended assessment only was 16.3% (n = 985). The proportion of patients who attended assessment and at least one therapy session was 83.7% (n = 5066). The mean expectancy rating for the subsample that attended assessment only was 7.20 (SD=2.03), and for the subsample that attended subsequent treatment appointments it was 7.31 (SD=1.83).

3.2 Attendance at therapy single-level regression model

A single-level logistic regression model which contained significant predictors of attendance (assessment only or assessment and treatment) at the patient level was developed first. Table 1 shows the patient level variables which were identified as significant predictors of attendance with odds ratios (ORs) and 95% confidence intervals (CIs) reported. Patient expectancy was not a significant predictor of attendance at first therapy session. All other variables not reported in Table 1 were nonsignificant predictors of attendance. Patients who were older than average were more likely to attend than patients younger than average. Patients who were unemployed were less likely to attend the first therapy session compared to those who were employed, retired or students. Patients prescribed medication were less likely to

attend the first therapy session compared to patients not prescribed. There was a significant interaction at the patient level between unemployment and prescribed medications.

Table 1.

Odds ratios for significant predictor variables of attendance and expectancy in the logistic regression model (level 1), with 95% confidence intervals (CIs).

	β	Standard error	Odds ratio	Lower 95% CI	Upper 95% CI	*p*
Age-grand mean centred	0.015	0.003	1.02	1.01	1.02	<.001
Unemployed	-1.165	0.072	0.31	0.27	0.36	0.017
Prescribed medication	-0.897	0.316	0.41	0.22	0.76	0.005
Expectancy-grand mean centred	0.030	0.019	1.03	0.99	1.07	0.114

Sensitivity analysis was undertaken on a sample of (*n* = 5022), representing patients who had been assessed by a therapist with a caseload of 30 patients or more. A single-level logistic regression model produced by this smaller sample found the same significant predictors of attendance (see Appendix A). There were minimal differences between ORs from the primary and sensitivity analyses for the age and prescribed medications variable. The greatest difference between the primary and sensitivity analyses was the ‘unemployment’ variable with an OR (95% CI) of 0.85 (0.73, 0.99) in the sensitivity analysis compared to 0.31 (0.27, 0.36) in the primary analysis. Further analysis of the unemployment variable between the primary and sensitivity analyses revealed that those within the primary analysis (*n* = 2401) were unemployed compared to (*n* = 1984) within the sensitivity analysis. Differences in sample sizes may explain the observed differences in ORs between the primary and sensitivity analyses for the ‘unemployment’ variable. Comparable with the primary analysis, the sensitivity analysis found patient expectancy at the single-level was not a significant predictor of attendance.

3.3 Therapist effects for attendance in a multi-level model

The model was then extended to a multilevel model to assess therapist variability. Significant predictor variables from the single-level model remained significant in the multilevel model. Expectancy, which was not a significant predictor of attendance at the single-level, became a significant predictor of attendance in the multilevel model. Meaning that patients with more optimistic outcome expectations were more likely to attend the first therapy session, and this became significant when the therapist is accounted for in the model. Table 2 displays the ORs and CIs for all significant variables in the multilevel model.

There was a significant interaction between unemployment and prescribed medication status. This was explored further using chi squared analysis which revealed a significant relationship between unemployment status and prescribed medication status X^2 (1, N = 5936) = 7.383, p = 0.007. Figure 2 displays the percentage of patients who attended based on employment and prescribed medication status. Of patients who were prescribed medication, those who were also employed were marginally more likely to attend the first therapy session compared to patients who were prescribed medication and unemployed. For patients not prescribed medication, it was more likely that employed patients would attend the first therapy appointment compared to those patients not prescribed medication and unemployed. Results suggest that employment status matters most in predicting attendance at the first therapy session when the patient is not prescribed medication.

Table 2.
Odds Ratios for significant predictor variables of attendance in the multilevel model, with 95% confidence intervals (CIs) calculated using 2nd order PQL.

	β	Standard Error	Odds ratio	Lower 95% CI	Upper 95% CI	*p*
Age-grand mean centred	0.016	0.003	1.02	1.01	1.02	<.001
Unemployed	-1.697	0.684	0.18	0.05	0.70	0.013
Prescribed medication	-1.440	0.553	0.24	0.08	0.70	0.009
Expectancy-grand mean centred	0.052	0.021	1.05	1.01	1.10	0.012
Unemployed x Prescribed	1.540	0.688	4.66	1.21	17.97	0.025

There was a significant therapist effect of 11.15% using the default estimation procedure 1st order MQL (see Appendix B). Using 2nd order PQL, a significant therapist effect was found of 10.65% suggesting that individual therapists had a varying impact on attendance at first therapy session once patient level predictors were controlled for (see Appendix C). Analysis of random slope for expectancy was nonsignificant, suggesting the relationship between expectancy and attendance does not vary significantly between therapists. Calculations for therapist effects for 1st order MQL and 2nd order PQL can be found in Appendix D.

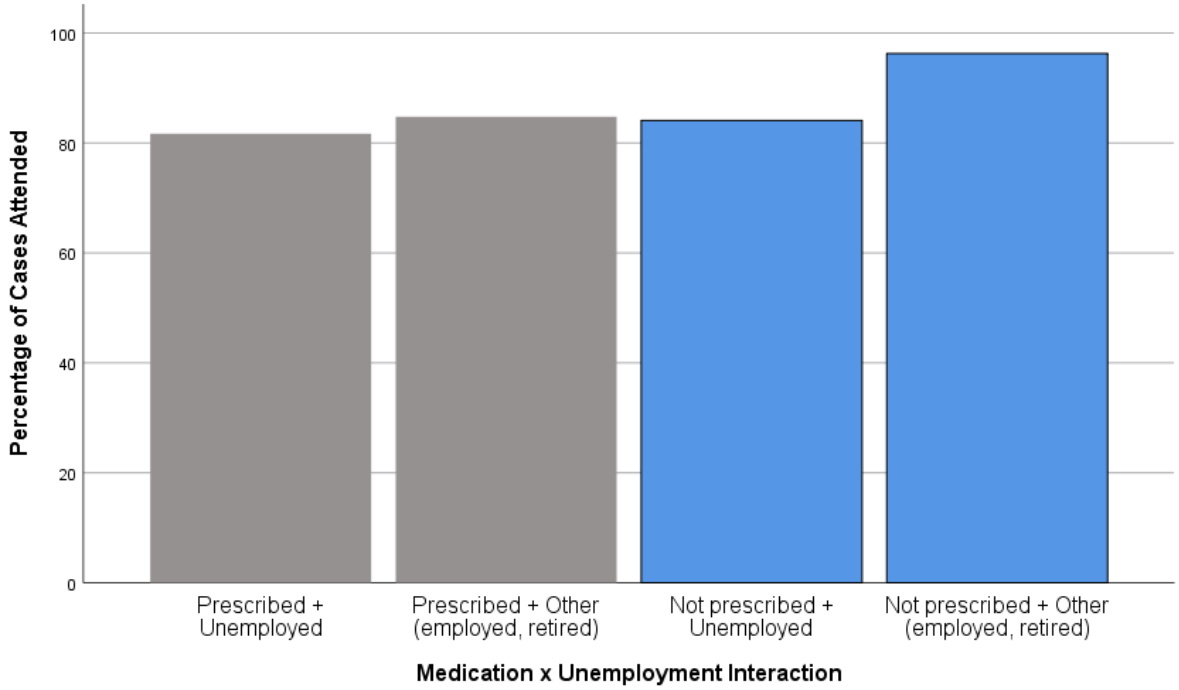

Figure 2. Percentage of patients who attended the first therapy session by group.

Sensitivity analysis of therapist effects using data from only therapists who had seen 30 patients or more (n = 5022) found significant therapist effects with 1st order MQL (6.64%) and 2nd order PQL (6.53%). Calculations for sensitivity analysis therapist effects can be found in Appendix E. Multilevel models for the sensitivity analysis were conducted using both 1st order MQL (see Appendix F) and 2nd order PQL (see Appendix G). Using the preferred 2nd order PQL multilevel model, the variable 'prescribed medication' was no longer a significant predictor of attendance (OR = 0.44; 95% CI = 0.18, 1.07). The variable 'expectancy' was also no longer a significant predictor of attendance (OR = 1.04; 95% CI = 1.00, 1.09). There was no longer a significant interaction between unemployment and prescribed medication variables. Appendix H displays the ORs and CIs for the multilevel model sensitivity analysis using 2nd order PQL.

3.4 Hypothesis 2: Patients with more optimistic outcome expectations will have a higher probability of completing an episode of therapy (rather than dropping out).

A subsample of patients who attended one assessment session and at least one therapy session was established (*n* = 4633). Of this sample 29.5% (*n* = 1366) dropped out of the scheduled treatment and 70.5% (*n* = 3267) completed the scheduled treatment. The mean (SD) expectancy rating for the subsample that dropped out of treatment was 7.28 (1.86) and the subsample that completed scheduled treatment was 7.38 (1.78).

3.5 Therapy dropout model development

A single-level logistic regression model which contained significant predictors of dropout (dropped out of scheduled treatment or completed scheduled treatment) at the patient level was developed first. Table 3 shows the patient level variables which were identified as significant predictors of drop out. Patients who were older than average were less likely to drop out of scheduled treatment. Patients who were unemployed were more likely to drop out of scheduled treatment. Finally, patients with higher initial depression scores on the PHQ-9 and patients with higher baseline functional impairment on the Work and Social Adjustment Scale (WSAS) were more likely to dropout rather than complete scheduled treatment. Within the single-level model, patient expectancy was not a significant predictor of dropout with an OR (95% CI) of 0.99 (0.95, 1.02). There were no significant interactions between significant predictor variables at the single level.

Table 3.

Odds ratios for significant predictor variables of dropout and expectancy in the logistic regression model (level 1), with 95% confidence intervals (CIs).

	β	Standard Error	Odds ratio	Lower 95% CI	Upper 95% CI	*p*
Age-grand mean centred	-0.025	0.003	0.98	0.97	0.98	<.001
Unemployed	0.271	0.068	1.31	1.15	1.50	<.001
Baseline PHQ-9 – grand mean centred	0.038	0.007	1.04	1.02	1.05	<.001
Baseline WSAS – grand mean centred	0.016	0.005	1.02	1.01	1.03	0.001
Expectancy-grand mean centred	-0.014	0.018	0.99	0.95	1.02	0.433

Note. Patient Health Questionnaire-9 (PHQ-9); Work and Social Adjustment Scale (WSAS).

Sensitivity analysis was undertaken on a sample of (n = 3806), representing patients who had attended assessment and at least one therapy session and been assessed by a therapist with a caseload of 30 patients or more. A single-level logistic regression model produced by this smaller sample found the same significant predictors of dropout (see Appendix I). An additional variable (baseline GAD-7 score) was a significant predictor of dropout within this analysis. There were minimal differences between ORs from the primary and sensitivity analyses for the four predictor variables present in both analyses (age, unemployment, baseline PHQ-9, baseline WSAS). Comparable with the primary analysis, the sensitivity analysis found patient expectancy at the single-level was not a significant predictor of dropout with OR (95% CI) of 0.99 (0.95, 1.03).

3.6 Therapist effects for dropout

The model was then extended to a multilevel model to assess therapist variability. Significant predictor variables of dropout within the single-level model remained significant in the multilevel model. Expectancy, which was not a significant predictor of dropout at the single-level was also non-significant in the multilevel model (OR = 0.98; 95% CI = 0.95, 1.02). Table 4 displays the ORs and CIs for all significant variables and expectancy. There were no significant interactions between variables in the multilevel model.

Table 4.

Odds ratios for significant predictor variables of dropout and expectancy in the multilevel model, with 95% confidence intervals (CIs) using 2nd order PQL.

	β	Standard Error	Odds ratio	Lower 95% CI	Upper 95% CI	*p*
Age-grand mean centred	-0.025	0.003	0.98	0.97	0.98	<.001
Unemployed	0.269	0.069	1.31	1.14	1.50	<.001
Baseline PHQ-9 – grand mean centred	0.039	0.007	1.04	1.03	1.05	<.001
Baseline WSAS – grand mean centred	0.015	0.005	1.02	1.01	1.03	0.001
Expectancy – grand mean centred	-0.017	0.019	0.98	0.95	1.02	0.376

Note. Patient Health Questionnaire-9 (PHQ-9); Work and Social Adjustment Scale (WSAS).

There was a significant therapist effect of 2.08% using the default estimation procedure 1st order MQL. Using 2nd order PQL, a significant therapist effect was found of 2.14% suggesting that individual therapists had a varying impact on patient dropout once patient level

predictors were controlled for. Calculations for therapist effects using 1st order MQL and 2nd order PQL can be found in Appendix J. Multilevel models for 1st order MQL (see Appendix K) and 2nd order PQL (see Appendix L) are reported. Due to the small therapist effect observed, a Wald test (Rasbash et al., 2020) was conducted to determine whether adding the therapist improved the data fit to the model. A chi squared analysis demonstrated the therapist effect for 2nd order PQL was significant X^2 (1, N = 4633) = 7.063, p = 0.008.

Sensitivity analysis of therapist effects using data from only therapists who had seen 30 patients or more (n = 3806) found significant therapist effects with 1st order MQL (1.64%) and 2nd order PQL (1.67%). Calculations for therapist effects can be found in Appendix M. A Wald test was conducted due to the small size of the therapist effect and demonstrated this was significant X^2 (1, N = 3806) = 4.725, p = 0.030. The variable 'baseline GAD-7' which was a significant predictor of dropout in the single-level sensitivity analysis, remained a significant predictor in the multilevel model sensitivity analysis. As 'baseline GAD-7' variable was not a significant predictor of dropout within the primary analysis, no further analysis was undertaken. There were no significant interactions between variables within the multilevel model sensitivity analysis. Sensitivity analysis multilevel models for 1st order MQL (see Appendix N) and 2nd order PQL (see Appendix O) are reported. ORs and CIs for the sensitivity analysis using 2nd order PQL can be found in Appendix P.

3.7 Hypothesis 3: There will be systematic variability in outcome expectancy ratings across therapists' assessment caseloads after controlling for case mix variables.

The original sample (n = 6051) was used for the analysis for hypothesis 3. The sample comprised (n = 148) therapists including psychological wellbeing practitioners (PWP; n = 62), cognitive behavioural therapists (CBT; n = 54), primary care mental health practitioners (MHP;

n = 31) and counsellors (*n* = 1). The mean (SD) size of caseload for therapists was 79.98 (51.31).

3.8 Expectancy model development

A single-level linear regression model containing significant predictors of expectancy was developed first (see Appendix Q). This was then extended to a multilevel model assessing therapist effects. Table 5 shows the significant patient level variables which were predictors of expectancy. There were no significant interactions between variables in the model. Female patients, and those with higher pre-treatment anxiety severity had higher than average expectancy scores reported at the end of their initial assessment. While unemployed patients, and those with higher pre-treatment depression and functional impairment (WSAS) had lower than average expectancy scores. The largest associations were observed for gender and employment status. Compared to males, females' expectancy scores were 0.24 points higher. Compared to others (employed, retired, students), unemployed patients' expectancy scores were 0.27 points lower.

Sensitivity analysis was conducted on a sample (*n* = 5022) of therapists who had seen 30 patients or more. A single-level linear regression included the same significant predictor variables as the primary analysis (see Appendix R). Coefficients and confidence intervals for the single-level linear regression sensitivity analysis can be found in Appendix S.

Table 5.
Significant predictors of expectancy in the linear regression model with 95% confidence intervals (CIs).

	β	Standard Error	95% CI	*p*
Fixed Part[a]				
Constant[b]	7.255	0.043	7.171 – 7.339	<.001
Female	0.243	0.050	0.144 – 0.342	<.001
Unemployed	-0.272	0.049	-0.369 - -0.175	<.001
Baseline PHQ-9 – grand mean centred	-0.021	0.006	-0.032 - -0.010	<.001
Baseline GAD-7 – grand mean centred	0.024	0.006	0.012 – 0.037	<.001
Baseline WSAS – grand mean centred	-0.008	0.003	-0.015 - -0.002	.013
Patient-level Variance (*n* = 5989)	3.397	0.062		
-2*loglikelihood:	24319.450			

Note. Patient Health Questionnaire-9 (PHQ-9); Generalised Anxiety Disorder Assessment (GAD-7); Work and Social Adjustment Scale (WSAS).

[a] Case-mix model

[b] Expectancy measure collected at the end of the first assessment session

3.9 Therapist effects for expectancy

Individual therapists had varying impact on patient outcome expectations after controlling for patient-level predictors. Table 6 displays the results of the multilevel model analysis. Multilevel model analysis revealed female patients, and those with higher pre-treatment anxiety severity had higher than average expectancy scores. While unemployed patients and those with higher pre-treatment depression had lower than average expectancy scores. It should be noted that the variable 'baseline WSAS' was no longer a significant predictor of expectancy once the therapist was controlled for in the model and so was removed. The largest associations were observed for gender and employment status. Compared to males,

females' expectancy scores were 0.24 points higher. Compared to others (employed, retired, students), unemployed patients' expectancy scores were 0.21 points lower when controlling for the effect of the assessing therapist. There were no significant interactions between variables in the model.

Data regarding therapist characteristics were not available within the dataset; therefore, the final expectancy model contains patient variables only. Primary multilevel model analysis is reported in Appendix T. There was a significant therapist effect of 15.87% within the primary analysis and a similar therapist effect within the sensitivity analysis of more of 18.74%. Calculations for therapist effects can be found in Appendix U.

Sensitivity analysis on the smaller dataset of therapists who had seen a minimum of 30 patients or more found that the variable ‘baseline WSAS’ was still a significant predictor of expectancy within the multilevel model (see Appendix V). All other variables not included in the model were non-significant. There were no significant interactions between variables in the model used for the sensitivity analysis. Coefficients and confidence intervals for the multilevel model sensitivity analysis can be found in Appendix W.

Table 6
Multilevel model with significant predictors of expectancy, with 95% confidence intervals (CIs).

	β	Standard Error	95% CI	*p*
Fixed Part[a]				
Constant[b]	7.135	0.076	6.987 - 7.283	<.001
Female	0.236	0.046	0.145 - 0.327	<.001
Unemployed	-0.213	0.046	-0.302 - -0.123	<.001
Baseline PHQ-9 – grand mean centred	-0.028	0.005	-0.037 - -0.018	<.001
Baseline GAD-7 – grand mean centred	0.020	0.006	0.008 - 0.031	.001
Random Part[c]				
Patient-level Variance (*n* = 6007)	2.815	0.052		
Therapist-level Variance (*n* = 148)	0.531	0.077		
ICC	0.159			
-2*loglikelihood:	23533.806			

Note. Patient Health Questionnaire-9 (PHQ-9); Generalised Anxiety Disorder Assessment (GAD-7); Intraclass correlation (ICC).

[a] Case-mix model

[b] Expectancy measure collected at the end of the first assessment session

[c] Multilevel model

Analysis of whether the multilevel model was a better fit for the data compared to the single-level model was conducted by comparing the difference in -2*loglikelihood ratios from the single and multilevel models and conducting chi squared analysis. This found that the multilevel model was a better fit for the data compared to the single-level model. The q-q plots at the patient level and therapist level were fairly linear, suggesting that normality can be assumed.

Figure 3 displays the therapist intercept residuals with 95% CIs produced by the multilevel model. Therapists are ranked from worst on the left, to best on the right in terms of

patient expectations. The figure shows that most therapists (70.9%) had patient expectancy ratings that were not significantly different to the average therapist (shown by the dashed line with the residual of zero). A total of 23 (15.5%) therapists on the left of the figure had significantly lower than average patient expectations and 21 therapists (14.2%) on the right of the figure had significantly higher than average patient expectancy ratings. The mean (SD) expectancy rating for below average therapists was 6.12 (.42) and for above average therapists 8.37 (.65). Sensitivity analysis of therapist residuals using only therapists who had a caseload of 30 patients or more can be found in Appendix X.

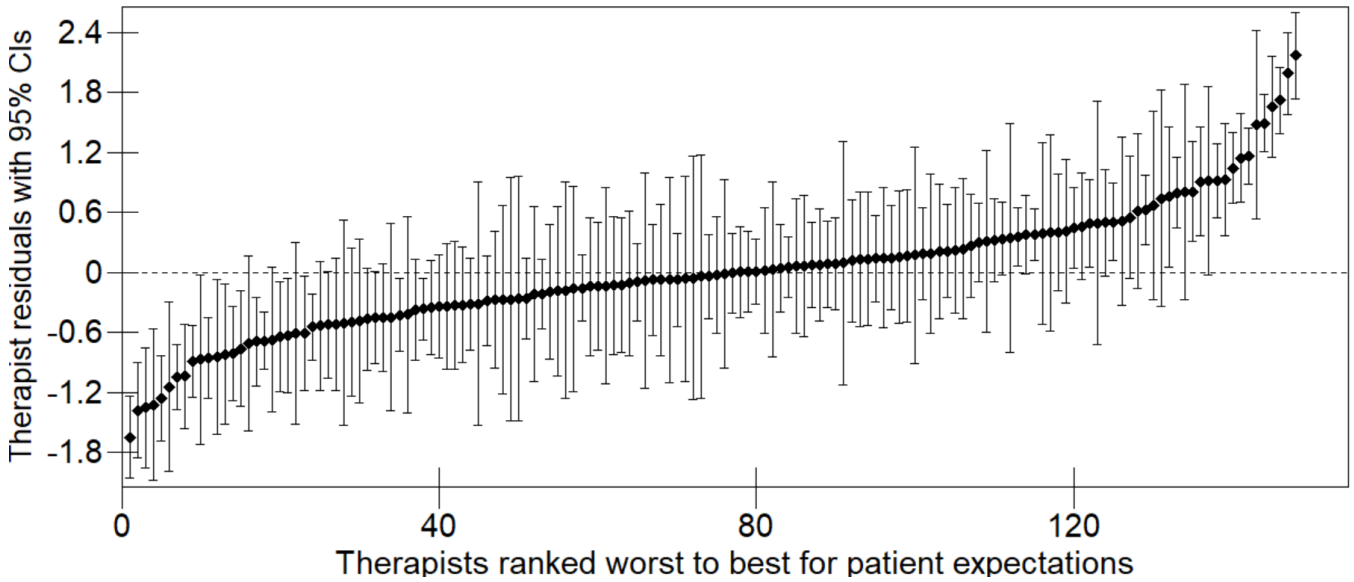

Figure 3. Plot of therapist residuals, with 95% confidence intervals (CIs) for patient expectations.

4. Discussion

4.1 Summary of main findings

This study aimed firstly to investigate whether pre-treatment outcome expectations predict attendance at subsequent psychological therapy appointments, and dropout from therapy. Secondly, it aimed to determine whether variability in patient pre-treatment

expectancy is attributable to the assessing therapist after controlling for case-mix. Three hypotheses were tested in this study, the results of which are described below. Overall, the results indicate that patients with higher pre-treatment expectations are more likely to start therapy after an initial assessment and that their level of expectancy is partly explained by variability between assessing therapists. This means that some therapists are more likely to induce a sense of positive expectations in patients who they assess, which influences treatment initiation, but does not have an effect on dropout once patients start their therapy. Given that the therapy sessions in the service were most often with therapists (other than the assessing therapist), it is possible that dropout is more strongly influenced by processes that occur within the treatment and related to the therapist-patient dyad. In what follows, the findings related to each of the three hypotheses will be discussed with reference to the wider literature.

4.2 Early attendance

Patient expectancy was not a significant predictor of attendance at subsequent therapy sessions within a single-level model, supporting the findings from previous studies including Norberg et al. (2011) and Swift et al. (2012). However, unlike these studies, the present study investigated the impact of therapist effects on attendance and patient outcome expectations. When the model was extended to a multilevel model, a significant therapist effect of 10.65% was found, suggesting that individual therapists had varying impact on attendance once patient level predictors of attendance were controlled for. These results support findings from Xiao et al. (2017) who found therapist effects of 1.1 – 1.4% for early non-attendance (up to the third appointment) and Kivlighan et al. (2019) who found therapists accounted for 14% of the variability in patients' non-attendance. Additionally, Firth et al. (2020) found a significant therapist effect of 9.9% for qualified therapists on attendance at a follow-up appointment after an initial assessment, comparable with the current study findings.

In summary, results of this study support the hypothesis that patients with more optimistic outcome expectations have a higher probability of attending the first therapy session, however, this is only when the effect of the therapist is controlled for. Findings support previous studies in this area, suggesting that the assessing therapists are having an influence on attendance and that outcome expectations are impacting on the likelihood that a patient attends subsequent therapy appointments.

4.3 Treatment dropout

Within the multilevel model, expectancy did not significantly predict treatment completion compared to treatment dropout. This may be due to patients with low expectancies having already dropped out of the service by not attending their first scheduled therapy session after initial assessment. Therefore, the dropout subsample used for testing hypothesis two may have less variability in expectancy ratings, resulting in non-significant findings. There was a small but significant therapist effect of 2.14%, which is lower than previous studies which reported therapist effects on dropout at 5.7% (Zimmermann et al., 2016) and 12.6% (Saxon et al., 2016). However, the results of the present study suggest individual therapists have a varying impact on patient dropout once patient level predictors were controlled for.

Results are comparable to research by Berke et al. (2019) who found expectancy did not significantly predict dropout in veterans with post-traumatic stress disorder. However, results of the present study contrast those of Schindler et al. (2013) who found that dropout from a cognitive behavioural therapy (CBT) intervention for depression in adults was predicted by less positive outcome expectancies. Furthermore, Snippe et al. (2015) replicated findings from Schindler et al. (2013) and found low outcome expectations increased the likelihood of dropout before the last treatment session of CBT or mindfulness-based cognitive therapy (MBCT) for depressive symptoms in patients with diabetes. However, patient expectations were not

associated with dropout before the sixth treatment session in the study, due to too few patients dropping out before session six to be able to observe an association. These results support the hypothesis that expectancy did not significantly predict dropout within the present study as patients with low expectancies had already dropped out of the service by not attending the first appointment after an initial assessment, resulting in less variability in expectancy ratings within the dropout subsample.

4.4 Therapist effects on patient expectancy

Multilevel model analysis revealed that gender and baseline anxiety were predictive of more optimistic expectancy ratings, whilst baseline depression and unemployment predicted lower than average expectancy. A substantial therapist effect of 15.87% on patient outcome expectations was found, suggesting therapists conducting the initial assessment influence patient expectancy after just one session. Analysis of therapist residuals showed that 15.5% therapists produced below average expectancy ratings whilst 13.5% were above average. This equates to a difference of approximately four points between the least and most effective therapists on an expectancy scale ranging from 0 to 10. These findings have important implications as therapists who are below average in terms of consistently lower patient outcome expectations may not be aware that these early interactions influence outcome expectations and subsequent attendance at therapy. Therefore, remedial action should be taken by offering support, training and supervision to least effective therapists with the aim of improving outcome expectations for the patients they assess.

Currently, there is little known about the characteristics of the highly effective therapists. It may be that these therapists are able to foster hope, which is one determinant of outcome expectations (Goldfarb, 2002). Swift et al (2012) found that outcome expectations are positively related to higher levels of hope. These results suggest that a patient's positive or negative views

about their ability to reach their goal are in turn associated with positive or negative beliefs about how likely therapy will help them to achieve this goal. The positive relationship between hope and optimistic outcome expectations is linked to later therapy outcomes (Constantino et al., 2011; Constantino et al., 2018). This process can be understood using the phase model for psychotherapy (Howard et al., 1993), which posits that an increased sense of subjective well-being (remoralization) occurs early in therapy as patients become more hopeful about recovery. Following remoralization, there is a decrease in symptoms (remediation) and an increase in functioning (rehabilitation). Alternatively, it may be that outcome expectations are influenced by treatment credibility, which are beliefs about how logical and convincing a treatment is perceived to be (Kazdin & Wilcoxon, 1976; Mooney et al., 2014). Currently, the mechanisms of how outcome expectations are influenced by therapists is unclear. Once the therapy has commenced however, patient expectancy is no longer a significant predictor of treatment completion or dropout. It may be that from this point onwards, the treating therapist and the quality of the alliance influence the likelihood of treatment completion or dropout over and above outcome expectations.

The findings of the present study demonstrated that females are significantly more likely to have optimistic outcome expectations compared to males. This may explain in part the observed differences between genders regarding help-seeking behaviour. There is established literature documenting that men are more reluctant to seek help than women (Thom, 1986), that male attitudes towards help-seeking are less favourable than female (Elhai et al., 2008; Kessler et al., 2005; Wang et al., 2005) and that these gender differences may be due in part to perceptions of masculinity (Levant et al., 2009; Nam et al., 2010). The results of this study suggest that there are also gender differences in terms of outcome expectations established as early as an initial assessment session, with males having lower than average expectations compared to females. These results can be interpreted through goal theory (Austin

& Vancouver), which suggests people will devote more resources to achieve a goal if they believe they have a chance of attaining it. Therefore males, who have lower than average outcome expectations and believe that engaging in therapy will not result in improvement are less likely to devote resources to achieve their goal compared to females.

4.5 Study limitations

A limitation of the current study is that outcome expectations were measured at the end of an initial assessment using a single question "At this point in time how confident are you that this kind of treatment will work for you on a scale of 0 to 10?" This measure of outcome expectations has been found to be associated with clinical outcomes (Delgadillo et al., 2016; Lutz et al. 2007) suggesting it has prognostic validity. However, it may not be as reliable as multiple-item measures of expectancy including the Credibility/ Expectancy Questionnaire (CEQ; Devilly & Borkovec, 2000); Outcome Expectancy Scale (OES; Ogrodniczuk & Sochting, 2010) and Expectations About Counselling-Brief Form (EAC-B; Tinsley et al., 1980).

Further limitations include the lack of available information about the therapists within the sample. Other than a therapist unique identifier, the dataset had no further information about therapist characteristics which may influence patient expectations. This limits the extent of the conclusions that can be drawn from the data. Whilst there is evidence to suggest that different clinicians influence patient outcome expectations in remarkably different ways, the results are unable to establish which therapist features contribute to this phenomenon. Additionally, there were no available session audio recordings as these were not used during the initial assessment appointments, resulting in a lack of process data. Currently, very little is known about the processes that occur between highly effective therapists and their patients which results in higher patient expectations after one assessment.

4.6 Future research

Currently, research using large datasets from IAPT services tends to include patient variables only. There is a lack of available data pertaining to therapist characteristics which might explain why some therapists are more capable of fostering credibility and instilling hope in their patients. Future research in this area would benefit from collecting data regarding therapist characteristics and process data from these initial assessments so that the skills of highly effective therapists can be observed and good practice guidelines for mental health assessments developed.

4.7 Clinical implications

The findings from this study suggest that initial assessments within IAPT services may be more than an information gathering exercise which focus on risk management and clinical recommendations for treatment. Instead, findings indicate that early interactions can influence patient outcome expectations which has a subsequent impact on attendance at the first therapy session. However, this study is not able to determine which therapist characteristics or processes contribute to some therapists having patients with higher-than-average outcome expectations.

These research findings show that outcome expectations influence attendance in therapy, therefore clinicians may wish to assess outcome expectations within an assessment to clarify these (Constantino, Coyne et al., 2020). Patients with more pessimistic outcome expectations may benefit from remedial action. There is emerging evidence to suggest steps can be taken to increase patient's outcome expectations. Pre-treatment preparation or induction training is based on psychoeducation principles and is one way of clarifying outcome

expectations alongside other patient expectations to decrease the risk of dropout and increase the benefit derived from therapy (Walitzer et al., 1999). Evidence suggests that CBT interventions with pre-treatment induction training improves patient retention in therapy and reduces unscheduled dropout (Delgadillo & Groom, 2017). Pre-treatment preparation within IAPT services may be one way that therapists can improve patient outcome expectations.

Furthermore, practice recommendations for improving patient outcome expectations suggest that therapists express confidence that an intervention will work and discuss with the patient about the efficacy of psychotherapy for their mental health problem (Constantino et al., 2011). Meanwhile, DeFife and Hilsenroth (2011) suggest outcome expectations can be influenced by the therapeutic alliance, specifically through collaborative understanding of the patients presenting problems, and agreement on therapy goals and tasks. Therefore, assessing and responding to feedback about the alliance may be another way of influencing patient outcome expectations.

4.8 Conclusions

In conclusion, patients' outcome expectations assessed at an initial (pre-treatment) assessment appointment significantly predicted attendance at the first therapy session. These findings can be interpreted through goal theory (Austin & Vancouver, 1996) which suggests patients will devote more resources to achieve their goal of recovery, if they believe they have a chance of attaining it. Contrastingly, pre-treatment outcome expectations did not predict subsequent dropout from treatment. This may be due to patients with lower outcome expectancies having already dropped out of the service by not attending the first scheduled session after an initial assessment; resulting in less variability in expectancy ratings within the dropout subsample. There was significant variability in patient outcome expectations across assessing therapists, suggesting that some therapists are able to instil a greater sense of positive

expectation compared to others. The exact mechanism for how this occurs remains unclear and should be the focus of future research. It may be that highly effective therapists are able to instil a greater sense of hope or treatment credibility, resulting in more optimistic outcome expectations. Overall, this study illustrates that the assessment process is more than an information gathering exercise and that initial interactions between patient and therapist influences patient expectations for treatment and subsequent attendance to therapy.

References

Abouguendia, M., Joyce, A. S., Piper, W. E., & Ogrodniczuk, J. S. (2004). Alliance as a mediator of expectancy effects in short-term group psychotherapy. *Group Dynamics: Theory, Research, and Practice, 8*(1), 3–12. https://doi.org/10.1037/1089- 2699.8.1.3

Arnkoff, D.B., Glass, C.R., & Shapiro, S.J. (2002). Expectations and preferences. In J.C. Norcross (Ed.), *Psychotherapy relationships that work: Therapist contributions and responsiveness to patients* (pp. 335-356). Oxford University Press.

Aubuchon-Endsley, N. L., & Callahan, J. L. (2009). The hour of departure: Predicting attrition in the training clinic from role expectancies. *Training and Education in Professional Psychology, 3*(2), 120–126. https://doi.org/10.1037/a0014455

Austin, J. T., & Vancouver, J. B. (1996). Goal constructs in psychology: Structure, process, and content. *Psychological Bulletin, 120*(3), 338–375. http://dx.doi.org/10.1037/0033-2909.120.3.338

Baekeland, F., & Lundwall, L. (1975). Dropping out of treatment: A critical review. *Psychological Bulletin, 82*(5), 738–783. https://doi.org/10.1037/h0077132

Baldwin, S. A., & Imel, Z. E. (2013). Therapist effects: Findings and methods. In M. J. Lambert (Eds.), *Bergin and Garfield's Handbook of Psychotherapy and Behavior Change* (pp.258-297). Wiley.

Barrett, M. S., Chua, W.-J., Crits-Christoph, P., Gibbons, M. B., & Thompson, D. (2008). Early withdrawal from mental health treatment: Implications for psychotherapy practice. *Psychotherapy: Theory, Research, Practice, Training, 45*(2), 247–267. https://doi.org/10.1037/0033-3204.45.2.247

Berke, D. S., Kline, N. K., Wachen, J. S., McLean, C. P., Yarvis, J. S., Mintz, J., Young-McCaughen, S., Peterson, A. L., Foa, E., Resick, P. A., & Litz, B. T. (2019). Predictors of attendance and dropout in three randomized controlled trials of PTSD treatment for active duty service members. *Behaviour Research and Therapy*, *118*, 7–17. https://doi.org/10.1016/j.brat.2019.03.003

Berrigan, L. P., & Garfield, S. L. (1981). Relationship of missed psychotherapy appointments to premature termination and social class. *British Journal of Clinical Psychology, 20*(4), 239–242. https://doi.org/10.1111/j.2044-8260.1981.tb00524.x

Bower, P., & Gilbody, S. (2005). Stepped care in psychological therapies: Access, effectiveness and efficiency. Narrative literature review. *British Journal of Psychiatry, 186,* 11–17. https://doi. org/10.1192/bjp.186.1.11

Cahill, J., Barkham, M., Hardy, G., Rees, A., Shapiro, D. A., Stiles, W. B., & Macaskill, N. (2003). Outcomes of patients completing and not completing cognitive therapy for depression. *British Journal of Clinical Psychology*, *42*(2), 133-143. http://doi.org/10.1348/014466503321903553

Charlton, C., Rasbash, J., Browne, W. J., Healy, M., & Cameron, B. (2020). *MLwiN* (Version 3.05). Centre for Multilevel Modelling, University of Bristol. http://www.bristol.ac.uk/cmm/software/mlwin/

Clarkin, J.F. & Levy, K.N. (2004). Influence of client variables on psychotherapy. In M.J. Lambert (Ed.), *Handbook of psychotherapy and behavior change* (5th ed., pp. 194-226). Wiley & Sons.

Constantino, M. J., Arnkoff, D. B., Glass, C. R., Ametrano, R. M., & Smith, J. Z. (2011). Expectations. *Journal of Clinical Psychology, 67*(2), 184-192. https://doi.org/10.1002/jclp.20754

Constantino, M. J., Aviram, A., Coyne, A. E., Newkirk, K., Greenberg, R. P., Westra, H. A., & Antony, M. M. (2020). Dyadic, longitudinal associations among outcome expectation and alliance, and their indirect effects on patient outcome. *Journal of Counseling Psychology, 67*(1), 40–50. https://doi.org/10.1037/cou0000364

Constantino, M. J., Coyne, A. E., Goodwin, B. J., Vîslă, A., Flückiger, C., Muir, H. J., & Gaines, A. N. (2020). Indirect effect of patient outcome expectation on improvement through alliance quality: A meta-analysis. *Psychotherapy Research*, 1-15. https://doi.org/10.1080/10503307.2020.1851058

Constantino, M. J., Vîslă, A., Coyne, A. E., & Boswell, J. F. (2018). A meta-analysis of the association between patients' early treatment outcome expectation and their posttreatment outcomes. *Psychotherapy, 55*(4), 473–485. https://doi.org/10.1037/pst0000169

DeFife, J. A., & Hilsenroth, M. J. (2011). Starting off on the right foot: Common factor elements in early psychotherapy process. *Journal of Psychotherapy Integration, 21*(2), 172–191. https://doi.org/10.1037/a0023889

Delgadillo, J., & Groom, M. (2017). Using psychoeducation and role induction to improve completion rates in cognitive behavioural therapy. *Behavioural and Cognitive Psychotherapy*, *45*(2), 170-184. http://doi.org/10.1017/S1352465816000643

Delgadillo, J., McMillan, D., Lucock, M., Leach, C., Ali, S., & Gilbody, S. (2014). Early changes, attrition, and dose–response in low intensity psychological interventions. *British Journal of Clinical Psychology*, *53*(1), 114-130. https://doi.org/10.1111/bjc.12031

Delgadillo, J., Moreea, O., & Lutz, W. (2016). Different people respond differently to therapy: A demonstration using patient profiling and risk stratification. *Behaviour Research and Therapy*, *79*, 15-22. http://doi.org/10.1016/j.brat.2016.02.003

Devilly, G. J., & Borkovec, T. D. (2000). Psychometric properties of the credibility/ expectancy questionnaire. *Journal of Behavior Therapy and Experimental Psychiatry, 31*(2), 73-86. https://doi.org/10.1016/s0005-7916(00)00012-4

Elhai, J. D., Schewinle, W., & Anderson, S. M. (2008). Reliability and validity of the Attitudes Toward Seeking Professional Psychological Help Scale-Short Form. *Psychiatry Research, 159*(3), 320–329. http://doi.org/10.1016/j.psychres.2007.04.020

Firth, N., Bone, C., & Holt, R. (2020). Health psychology attendance: A multilevel analysis of patient-level predictors and therapist effects. *Health Psychology, 39*(11), 945–955. https://doi.org/10.1037/hea0001021

Garfield, S.L. (1994). Research on client variables in psychotherapy. In A.E. Bergin & S.L. Garfield (Eds.), *Handbook of psychotherapy and behavior change* (4th ed., pp. 190-228). Wiley & Sons

Goldfarb, D. E. (2002). College counseling center clients' expectations about counseling: How they relate to depression, hopelessness, and actual-ideal self-discrepancies. *Journal of College Counseling, 5*(2), 142–152. https://doi.org/10.1002/j.2161-1882.2002.tb00216.x

Greenberg, R.P., Constantino, M.J., & Bruce, N. (2006). Are patient expectations still relevant for psychotherapy process and outcome? *Clinical Psychology Review, 26*(6), 657-678. http://doi.org/10.1016/ j.cpr.2005.03.002.

Hatchett, G. T., Han, K., & Cooker, P. G. (2002). Predicting premature termination from counseling using the Butcher Treatment Planning Inventory. *Assessment, 9*(2), 156-163. https://doi.org/10.1177/10791102009002006

Hatchett, G. T., & Park, H. L. (2003). Comparison of four operational definitions of premature termination. *Psychotherapy: Theory, Research, Practice, Training, 40*(3), 226–231. https://doi.org/10.1037/0033-3204.40.3.226

Howard, K. I., Lueger, R. J., Maling, M. S., & Martinovich, Z. (1993). A phase model of psychotherapy outcome: Causal mediation of change. *Journal of Consulting and Clinical Psychology, 61*(4), 678–685. https://doi.org/10.1037/0022-006X.61.4.678

IBM Corp. (2017). *IBM SPSS Statistics for Windows*. Armonk, NY: IBM Corp. Retrieved from https://hadoop.apache.org

Johansson, P., Høglend, P., & Hersoug, A. G. (2011). Therapeutic alliance mediates the effect of patient expectancy in dynamic psychotherapy. *British Journal of Clinical Psychology*, *50*(3), 283-297. https://doi.org/10.1348/014466510X517406

Joyce, A. S., Ogrodniczuk, J. S., Piper, W. E., & McCallum, M. (2003). The alliance as mediator of expectancy effects in short-term individual therapy. *Journal of Consulting and Clinical Psychology, 71*(4), 672–679. https://doi.org/10.1037/0022006X.71.4.672

Kadera, S. W., Lambert, M. J., & Andrews, A. A. (1996). How much therapy is really enough? A session-by-session analysis of the psychotherapy dose-effect relationship. *Journal of Psychotherapy Practice & Research, 5*(2), 132–151.

Kazdin, A. E., & Wilcoxon, L. A. (1976). Systematic desensitization and nonspecific treatment effects: A methodological evaluation. *Psychological Bulletin, 83*(5), 729–758. https://doi.org/10.1037/0033-2909.83.5.729

Kellett, S., Simmonds-Buckley, M., Limon, E., Hague, J., Hughes, L., Stride, C., & Millings, A. (2021). Defining the assessment and treatment competencies to deliver low intensity cognitive behavior therapy: A multi-centre validation study. *Behavior Therapy, 52*(1), 15–27. https://doi.org/10. 1016/j.beth.2020.01.006

Kessler, R. C., Demler, O., Frank, R. G., Olfson, M., Pincus, H. A., Walters, E. E., & Zaslavsky, A. M. (2005). Prevalence and treatment of mental disorders, 1990 to 2003. *New England Journal of Medicine, 352*(24), 2515–2523. http://doi.org/10.1056/NEJMsa043266.

Kivlighan, D. M. III, Jung, A.-K., Berkowitz, A. B., Hammer, J. H., & Collins, N. M. (2019). 'To show or no-show'? Therapist racial-ethnic disparities in clients' nonattendance in therapy. *Journal of College Student Psychotherapy, 33*(1), 1–13. https://doi.org/10.1080/87568225.2018.1424597

Klein, E. B., Stone, W. N., Hicks, M. W., & Pritchard, I. L. (2003). Understanding dropouts. *Journal of Mental Health Counseling, 25*(2), 89–100. https://doi.org/10.17744/mehc.25.2.xhyreggxdcd0q4ny

Kolb, D. L., Beutler, L. E., Davis, C. S., Crago, M., & Shanfield, S. B. (1985). Patient and therapy process variables relating to dropout and change in psychotherapy. *Psychotherapy: Theory, Research, Practice, Training, 22*(4), 702-710. https://doi.org/10.1037/h0085556

Lampropoulos, G. K. (2010). Type of counseling termination and trainee therapist– client agreement about change. *Counselling Psychology Quarterly, 23*(1), 111–120. https://doi.org/10.1080/09515071003721552

Levant, R. F., Wilmder, D. J., Williams, C. M., Smalley, K. B., & Noronha, D. (2009). The relationships between masculinity variables, health risk behaviors and attitudes

toward seeking psychological help. *International Journal of Men's Health, 8*(1), 3–21. http://doi.org/10.3149/jmh.0801.3.

Longo, D. A., Lent, R. W., & Brown, S. D. (1992). Social cognitive variables in the prediction of client motivation and attrition. *Journal of Counseling Psychology*, *39*(4), 447–452. https://doi.org/10.1037/0022-0167.39.4.447

Lutz, W., Leon, S. C., Martinovich, Z., Lyons, J. S., & Stiles, W. B. (2007). Therapist effects in outpatient psychotherapy: A three-level growth curve approach. *Journal of Counseling Psychology, 54*(1), 32–39. https://doi.org/10.1037/0022-0167.54.1.32

Maas, C. J. M., & Hox, J. J. (2005). Sufficient Sample Sizes for Multilevel Modeling. *Methodology: European Journal of Research Methods for the Behavioral and Social Sciences, 1*(3), 86–92. https://doi.org/10.1027/1614-2241.1.3.86

McClintock, A. S., Anderson, T., & Petrarca, A. (2015). Treatment expectations, alliance, session positivity, and outcome: An investigation of a three-path mediation model. *Journal of Clinical Psychology*, *71*(1), 41-49. https://doi.org/10.1002/jclp.22119

Meyer, B., Pilkonis, P. A., Krupnick, J. L., Egan, M. K., Simmens, S. J., & Sotsky, S. M. (2002). Treatment expectancies, patient alliance and outcome: Further analyses from the National Institute of Mental Health Treatment of Depression Collaborative Research Program. *Journal of Consulting and Clinical Psychology*, *70*(4), 1051–1055. https://doi.org/10.1037/0022-006X.70.4.1051

Moller, N. P., Ryan, G., Rollings, J., & Barkham, M. (2019). The 2018 UK NHS digital annual report on the Improving Access to Psychological Therapies programme: a brief commentary. *BMC Psychiatry*, *19*(1), 252. http://doi.org/10.1186/s12888-019-2235-z

Mooney, T. K., Gibbons, M. B. C., Gallop, R., Mack, R. A., & Crits-Christoph, P. (2014). Psychotherapy credibility ratings: Patient predictors of credibility and the relation of credibility to therapy outcome. *Psychotherapy Research*, *24*(5), 565-577. https://doi.org/10.1080/10503307.2013.847988

Nam, S. K., Chu, H. J., Lee, M. K., Lee, J. H., Kim, N., & Lee, S. M. (2010). A meta-analysis of gender differences in attitudes toward seeking professional psychological help. *Journal of American College Health, 59*(2), 110–116. http://doi.org/10.1080/07448481.2010.483714

National Health Service England. (2021, May 5). *Adult Improving Access to Psychological Therapies programme.* https://www.england.nhs.uk/mental-health/adults/iapt/

National Institute for Health and Care Excellence (2011). *Common mental health problems: Identification and pathways to care (CG90).* Retrieved from https://www.nice.org.uk/guida nce/cg123/chapter/1-guidance

Norberg, M. M., Wetterneck, C. T., Sass, D. A., & Kanter, J. W. (2011). Development and psychometric evaluation of the Milwaukee Psychotherapy Expectations Questionnaire. *Journal of Clinical Psychology, 67*(6), 574 –590. http://doi.org/10.1002/jclp.20781

Ogrodniczuk, J. S., & Sochting, I. (2010). *Outcome expectancy scale*. The University of British Columbia.

Rasbash, J., Steele, F., Browne, W.J. and Goldstein, H. (2020) *A User's Guide to MLwiN* (Version 3.05). Centre for Multilevel Modelling, University of Bristol. http://www.bristol.ac.uk/cmm/media/software/mlwin/downloads/manuals/3-05/manual-web.pdf

Sauer-Zavala, S., Boswell, J. F., Bentley, K. H., Thompson-Hollands, J., Farchione, T. J., & Barlow, D. H. (2018). Expectancies, working alliance, and outcome in transdiagnostic and single diagnosis treatment for anxiety disorders: An investigation of mediation. *Cognitive Therapy and Research*, *42*(2), 135-145. https://doi.org/10.1007/s10608-017-9855-8

Saxon, D., Barkham, M., Foster, A., & Parry, G. (2017). The contribution of therapist effects to patient dropout and deterioration in the psychological therapies. *Clinical Psychology & Psychotherapy*, *24*(3), 575-588. https://doi.org/10.1002/cpp.2028

Schiefele, A. K., Lutz, W., Barkham, M., Rubel, J., Böhnke, J., Delgadillo, J., ... & Lambert, M. J. (2017). Reliability of therapist effects in practice-based psychotherapy research: A guide for the planning of future studies. *Administration and Policy in Mental Health and Mental Health Services Research*, *44*(5), 598-613. http://doi.org/10.1007/s10488-016-0736-3

Schindler, A., Hiller, W., & Witthöft, M. (2013). What predicts outcome, response, and drop-out in CBT of depressive adults? A naturalistic study. *Behavioural and Cognitive Psychotherapy*, *41*(3), 365. http://doi.org/ 10.1017/S1352465812001063

Snijders, T.A.B. & Bosker, R.J. (1999). *Multilevel Analysis.* Sage Publishers

Snijders, T. A. B., & Bosker, R. J. (2012). *Multilevel analysis: An introduction to basic and advanced multilevel modeling* (2nd ed.). Sage Publishers.

Snippe, E., Schroevers, M. J., Tovote, K. A., Sanderman, R., Emmelkamp, P. M., & Fleer, J. (2015). Patients' outcome expectations matter in psychological interventions for patients with diabetes and comorbid depressive symptoms. *Cognitive Therapy and Research*, *39*(3), 307-317. http://doi.org/ 10.1007/s10608-014-9667-z

Soldz, S. (2006). Models and meanings: Therapist effects and the stories we tell. *Psychotherapy Research, 16*(2), 173–177. https://doi.org/10.1080/10503300500264937

Swift, J. K., & Callahan, J. L. (2011). Decreasing treatment dropout by addressing expectations for treatment length. *Psychotherapy Research, 21*(2), 193-200. http://doi.org/10.1080/10503307.2010.541294

Swift, J. K., Callahan, J., & Levine, J. C. (2009). Using clinically significant change to identify premature termination. *Psychotherapy: Theory, Research, Practice, Training, 46*(3), 328. http://doi.org/10.1037/a0017003

Swift, J. K., & Greenberg, R. P. (2012). Premature discontinuation in adult psychotherapy: A meta-analysis. *Journal of Consulting and Clinical Psychology, 80*(4), 547–559. https://doi.org/10.1037/a0028226

Swift, J. K., Whipple, J. L., & Sandberg, P. (2012). A prediction of initial appointment attendance and initial outcome expectations. *Psychotherapy, 49*(4), 549–556. https://doi.org/10.1037/a0029441

Thom, B. (1986). Sex differences in help-seeking for alcohol problems: The barriers to help-seeking. *British Journal of Addiction, 81*(6), 777–788. https://doi.org/10.1111/j.1360-0443.1986.tb00405.x

Tinsley, H. E., Workman, K. R., & Kass, R. A. (1980). Factor analysis of the domain of client expectancies about counseling. *Journal of Counseling Psychology, 27*(6), 561–570. https://doi.org/10.1037/0022-0167.27.6.561

Vîslă, A., Constantino, M. J., Newkirk, K., Ogrodniczuk, J. S., & Söchting, I. (2018). The relation between outcome expectation, therapeutic alliance, and outcome among

depressed patients in group cognitive-behavioral therapy. *Psychotherapy Research, 28*(3), 446-456. https://doi.org/10.1080/10503307.2016.1218089

Wakefield, S., Kellett, S., Simmonds-Buckley, M., Stockton, D., Bradbury, A., & Delgadillo, J. (2021). Improving Access to Psychological Therapies (IAPT) in the United Kingdom: A systematic review and meta-analysis of 10-years of practice-based evidence. *British Journal of Clinical Psychology, 60*(1), 1-37. http://doi.org/ 10.1111/bjc.12259

Walitzer, K. S., Dermen, K. H. & Connors, G. J. (1999). Strategies for preparing clients for treatment. *Behavior Modification, 23,* 129–151. https://doi.org/10.1177/0145445599231006

Wampold, B. E., & Brown, G. S. (2005). Estimating variability in outcomes attributable to therapists: A naturalistic study of outcomes in managed care. *Journal of Consulting and Clinical Psychology, 73*(5), 914–923. https://doi.org/10.1037/0022-006X.73.5.914

Wang, P. S., Lane, M., Olfson, M., Pincus, H. A., Wells, K. B., & Kessler, R. C. (2005). Twelve-month use of mental health services in the United States. *Archives of General Psychiatry, 62*(6), 629–640. http://doi.org/10.1001/archpsyc.62.6.629

Westmacott, R., Hunsley, J., Best, M., Rumstein-McKean, O., & Schindler, D. (2010). Client and therapist views of contextual factors related to termination from psychotherapy: A comparison between unilateral and mutual terminators. *Psychotherapy Research, 20*(4), 423–435. http://doi.org/ 10.1080/10503301003645796.

Wierzbicki, M., & Pekarik, G. (1993). A meta-analysis of psychotherapy dropout. *Professional Psychology: Research and Practice, 24*(2), 190–195. https://doi.org/10.1037/0735-7028.24.2.190

Xiao, H., Hayes, J. A., Castonguay, L. G., McAleavey, A. A., & Locke, B. D. (2017). Therapist effects and the impacts of therapy nonattendance. *Psychotherapy, 54*(1), 58–65. https://doi.org/10.1037/pst0000103

Zagorscak, P., Heinrich, M., Schulze, J., Böttcher, J., & Knaevelsrud, C. (2020). Factors contributing to symptom change in standardized and individualized internet-based interventions for depression: A randomized-controlled trial. *Psychotherapy, 57*(2), 237-251. https://doi.org/10.1037/pst0000276

Zimmermann, D., Rubel, J., Page, A. C., & Lutz, W. (2017). Therapist effects on and predictors of non-consensual dropout in psychotherapy. *Clinical Psychology & Psychotherapy, 24*(2), 312-321. https://doi.org/10.1002/cpp.2022

Appendix A

Odds ratios for significant predictor variables of attendance and expectancy in a single-level model, with 95% confidence intervals (CI) for sensitivity analysis

	β	Standard Error	Odds ratio	Lower 95% CI	Upper 95% CI	*p*
Age-grand mean centred	0.015	0.003	1.02	1.01	1.02	<.001
Unemployed	-0.160	0.077	0.85	0.73	0.99	0.039
Prescribed medication	-0.854	0.397	0.43	0.20	0.93	0.031
Expectancy-grand mean centred	0.027	0.020	1.03	0.99	1.07	0.182(ns)

Note. Nonsignificant (ns)

Appendix B

Primary multilevel model analysis including significant predictors of attendance using 1st order MQL

$$\text{Attendance}_{ij} \sim \text{Binomial}(\text{Denom}_{ij}, \pi_{ij})$$

$$\text{logit}(\pi_{ij}) = \beta_{0j}\text{cons} + 0.015(0.003)(\text{Age-gm})_{ij} + \text{-}1.654(0.643)\text{Unemployed (2,4,6)}_{ij} + \text{-}1.403(0.534)\text{Prescribed}_{ij} + 0.050(0.021)(\text{Expectancy-gm})_{ij} + 1.504(0.647)\text{Unemployed (2,4,6).Prescribed}_{ij}$$

$$\beta_{0j} = 3.215(0.532) + u_{0j}$$

$$\left[u_{0j}\right] \sim \text{N}(0,\ \Omega_u)\ :\ \Omega_u = \left[0.413(0.081)\right]$$

$$\text{var}(\text{Attendance}_{ij}|\pi_{ij}) = \pi_{ij}(1 - \pi_{ij})/\text{Denom}_{ij}$$

(5936 of 6051 cases in use)

UNITS:

Worker_ID_@Assessment: 148 (of 148) in use

Appendix C

Primary multilevel model analysis including significant predictors of attendance using 2nd order PQL

$$\text{Attendance}_{ij} \sim \text{Binomial}(\text{Denom}_{ij}, \pi_{ij})$$

$$\text{logit}(\pi_{ij}) = \beta_{0j}\text{cons} + 0.016(0.003)(\text{Age-gm})_{ij} + -1.697(0.684)\text{Unemployed (2,4,6)}_{ij} + -1.440(0.553)\text{Prescribed}_{ij} + 0.052(0.021)(\text{Expectancy-gm})_{ij} + 1.540(0.688)\text{Unemployed (2,4,6).Prescribed}_{ij}$$

$$\beta_{0j} = 3.374(0.552) + u_{0j}$$

$$\left[u_{0j}\right] \sim \text{N}(0,\ \Omega_u)\ :\ \Omega_u = \left[0.392(0.080)\right]$$

$$\text{var}(\text{Attendance}_{ij}|\pi_{ij}) = \pi_{ij}(1 - \pi_{ij})/\text{Denom}_{ij}$$

(5936 of 6051 cases in use)

UNITS:

Worker_ID_@Assessment: 148 (of 148) in use

Appendix D

Therapist effect calculations using a linear threshold model (Snijders & Bosker, 1999) for primary analysis for hypothesis one (attendance)

Primary analysis 1st Order MQL
Patient level variance = 3.29 (see Rasbash et al., 2020)
Therapist level variance = 0.413
3.29 + 0.413 = 3.703 (overall variance)
0.413/3.703 (therapist variance/ overall variance) = answer x 100 = 11.15
11.15% is the therapist effect

Primary analysis 2nd Order PQL
Patient level variance always = 3.29 (see Rasbash et al., 2020)
Therapist variance from model = 0.392
3.29 + 0.392 = 3.682 (overall variance)
0.392/3.682 (therapist variance/ overall variance) = answer x 100 = 10.65
10.65% is the therapist effect

Appendix E

Therapist effect calculations using a linear threshold model (Snijders & Bosker, 1999) for sensitivity analysis for hypothesis one (attendance)

Sensitivity analysis 1st order MQL
Patient level variance = 3.29 (see Rasbash et al., 2020)
Therapist variance from model = 0.234
3.29 + 0.234 = 3.524 (overall variance)
0.234/3.524 (therapist variance/overall variance) = answer x 100 = 6.64
6.64% is the therapist effect

Sensitivity analysis 2nd order PQL
Patient level variance = 3.29 (see Rasbash et al., 2020)
Therapist variance from model = 0.230
3.29 + 0.230 = 3.52 (overall variance)
0.230/3.52 (Therapist variance/ overall variance) = answer x 100 = 6.53
6.53% is the therapist effect

Appendix F

Sensitivity analysis multilevel model using 1st order MQL

$$\text{Attendance}_{ij} \sim \text{Binomial}(\text{Denom}_{ij}, \pi_{ij})$$

$$\text{logit}(\pi_{ij}) = \beta_{0j}\text{cons} + 0.015(0.003)(\text{Age-gm})_{ij} + \text{-}0.155(0.079)\text{Unemployed (2,4,6)}_{ij} + \text{-}0.806(0.445)\text{Prescribed}_{ij} + 0.041(0.022)(\text{Expectancy-gm})_{ij}$$

$$\beta_{0j} = 2.467(0.445) + u_{0j}$$

$$\begin{bmatrix} u_{0j} \end{bmatrix} \sim \text{N}(0,\ \Omega_u)\ :\ \Omega_u = \begin{bmatrix} 0.234(0.059) \end{bmatrix}$$

$$\text{var}(\text{Attendance}_{ij}|\pi_{ij}) = \pi_{ij}(1 - \pi_{ij})/\text{Denom}_{ij}$$

(4940 of 5022 cases in use)

UNITS:

Worker_ID_@Assessment: 71 (of 71) in use

Appendix G

Sensitivity analysis multilevel model using 2nd order PQL

$$\text{Attendance}_{ij} \sim \text{Binomial}(\text{Denom}_{ij}, \pi_{ij})$$

$$\text{logit}(\pi_{ij}) = \beta_{0j}\text{cons} + 0.015(0.003)(\text{Age-gm})_{ij} + \text{-}0.160(0.080)\text{Unemployed (2,4,6)}_{ij} + \text{-}0.827(0.456)\text{Prescribed}_{ij} + 0.042(0.022)(\text{Expectancy-gm})_{ij}$$

$$\beta_{0j} = 2.561(0.456) + u_{0j}$$

$$\begin{bmatrix} u_{0j} \end{bmatrix} \sim \text{N}(0,\ \Omega_u)\ :\ \Omega_u = \begin{bmatrix} 0.230(0.060) \end{bmatrix}$$

$$\text{var}(\text{Attendance}_{ij}|\pi_{ij}) = \pi_{ij}(1 - \pi_{ij})/\text{Denom}_{ij}$$

(4940 of 5022 cases in use)

UNITS:

Worker_ID_@Assessment: 71 (of 71) in use

Appendix H

Odds ratios for significant predictor variables of attendance and expectancy in the sensitivity analysis multilevel model, with 95% confidence intervals (CI) calculated using 2nd order PQL

	β	Standard Error	Odds ratio	Lower CI	Upper CI	*p*
Age-grand mean centred	0.015	0.003	1.02	1.01	1.02	<.001
Unemployed	-1.600	0.080	0.20	0.17	0.24	0.044
Prescribed medication	-0.827	0.456	0.44	0.18	1.07	0.069 (ns)
Expectancy-grand mean centred	0.042	0.022	1.04	1.00	1.09	0.053 (ns)

Note. Nonsignificant (ns)

Appendix I

Odds ratios for significant predictor variables of dropout and expectancy in a single-level sensitivity analysis model, with 95% confidence intervals (CIs).

	β	Standard Error	Odds ratio	Lower 95% CI	Upper 95% CI	*p*
Age-grand mean centred	-0.026	0.003	0.97	0.97	0.98	<.001
Unemployed	0.275	0.075	1.32	1.14	1.53	<.001
Baseline PHQ-9 – grand mean centred	0.026	0.009	1.03	1.01	1.04	0.003
Baseline WSAS – grand mean centred	0.016	0.005	1.02	1.01	1.03	0.001
Baseline GAD-7 – grand mean centred	0.020	0.010	1.02	1.00	1.04	0.047
Expectancy-grand mean centred	-0.011	0.020	0.99	0.95	1.03	0.576

Note. Patient Health Questionnaire-9 (PHQ-9); Work and Social Adjustment Scale (WSAS); Generalised Anxiety Disorder Assessment (GAD-7); Nonsignificant (ns)

Appendix J

Therapist effect calculations using a linear threshold model (Snijders & Bosker, 1999) for primary analysis for hypothesis two (dropout)

Primary analysis 1st order MQL
Patient level variance = 3.29 (see Rasbash et al., 2020)
Therapist variance from model = 0.070
3.29 + 0.070 = 3.36 (overall variance)
0.070/3.36 (Therapist variance/ overall variance) = answer x 100 = 2.08
2.08% is the therapist effect

Primary analysis 2nd order PQL
Patient level variance = 3.29 (see Rasbash et al., 2020)
Therapist variance from model = 0.072
3.29 + 0.072 = 3.362 (overall variance)
Therapist variance 0.072/3.362 (Therapist variance/ overall variance) = answer x 100 = 2.14
2.14% is the therapist effect

Appendix K

Primary analysis multilevel model using 1st order MQL

$$\text{Drop\_Out\_Final}_{ij} \sim \text{Binomial}(\text{Denom}_{ij}, \pi_{ij})$$

$$\text{logit}(\pi_{ij}) = \beta_{0j}\text{cons} + \text{-0.025(0.003)(Age-gm)}_{ij} + \text{0.266(0.068)Unemployed (2,4,6)}_{ij} + \text{0.039(0.007)(PHQ9\_first-gm)}_{ij} + \text{0.015(0.005)(WSAS\_first-gm)}_{ij}$$

$$\beta_{0j} = \text{-1.031(0.052)} + u_{0j}$$

$$\begin{bmatrix} u_{0j} \end{bmatrix} \sim \text{N}(0,\ \Omega_u)\ :\ \Omega_u = \begin{bmatrix} \text{0.070(0.027)} \end{bmatrix}$$

$$\text{var}(\text{Drop\_Out\_Final}_{ij}|\pi_{ij}) = \pi_{ij}(1 - \pi_{ij})/\text{Denom}_{ij}$$

(4600 of 4633 cases in use)

UNITS:

Worker_ID_@Assessment: 148 (of 148) in use

Appendix L

Primary analysis multilevel model analysis using 2nd order PQL

$$\text{Drop\_Out\_Final}_{ij} \sim \text{Binomial}(\text{Denom}_{ij}, \pi_{ij})$$

$$\text{logit}(\pi_{ij}) = \beta_{0j}\text{cons} + \text{-0.025(0.003)(Age-gm)}_{ij} + \text{0.269(0.069)Unemployed (2,4,6)}_{ij} + \text{0.039(0.007)(PHQ9\_first-gm)}_{ij} + \text{0.015(0.005)(WSAS\_first-gm)}_{ij}$$

$$\beta_{0j} = \text{-1.046(0.052)} + u_{0j}$$

$$\begin{bmatrix} u_{0j} \end{bmatrix} \sim \text{N}(0,\ \Omega_u)\ :\ \Omega_u = \begin{bmatrix} \text{0.072(0.027)} \end{bmatrix}$$

$$\text{var}(\text{Drop\_Out\_Final}_{ij}|\pi_{ij}) = \pi_{ij}(1 - \pi_{ij})/\text{Denom}_{ij}$$

(4600 of 4633 cases in use)

UNITS:

Worker_ID_@Assessment: 148 (of 148) in use

Appendix M

Therapist effect calculations using a linear threshold model (Snijders & Bosker, 1999) for sensitivity analysis for hypothesis two (dropout)

Sensitivity analysis 1st order MQL
Patient level variance = 3.29 (see Rasbash et al., 2020)
Therapist variance from model = 0.055
3.29 + 0.055 = 3.345 (overall variance)
0.055/3.345 (Therapist variance/ overall variance) = answer x 100 = 1.64
1.64% is the therapist effect

Sensitivity analysis 2nd order PQL
Patient level variance = 3.29 (see Rasbash et al., 2020)
Therapist variance from model = 0.056
3.29 + 0.056 = 3.346 (overall variance)
0.056/3.346 (Therapist variance/overall variance) = answer x 100 = 1.67
1.67% is the therapist effect

Appendix N

Sensitivity analysis multilevel model using 1st order MQL

$$\text{Drop\_Out\_Binary}_{ij} \sim \text{Binomial}(\text{Denom}_{ij}, \pi_{ij})$$

$$\text{logit}(\pi_{ij}) = \beta_{0j}\text{cons} + \text{-0.026(0.003)(Age-gm)}_{ij} + \text{0.269(0.076)Unemployed (2,4,6)}_{ij} + \text{0.027(0.009)(PHQ9\_first-gm)}_{ij} + \text{0.021(0.010)(GAD7\_first-gm)}_{ij} + \text{0.015(0.005)(WSAS\_first-gm)}_{ij}$$

$$\beta_{0j} = \text{-1.036(0.057)} + u_{0j}$$

$$\left[u_{0j}\right] \sim \text{N}(0,\ \Omega_u)\ :\ \Omega_u = \left[\text{0.055(0.026)}\right]$$

$$\text{var}(\text{Drop\_Out\_Binary}_{ij}|\pi_{ij}) = \pi_{ij}(1 - \pi_{ij})/\text{Denom}_{ij}$$

(3786 of 3806 cases in use)

UNITS:

Worker_ID_@Assessment: 71 (of 71) in use

Appendix O

Sensitivity analysis multilevel model using 2nd order PQL

$$\text{Drop\_Out\_Binary}_{ij} \sim \text{Binomial}(\text{Denom}_{ij}, \pi_{ij})$$

$$\text{logit}(\pi_{ij}) = \beta_{0j}\text{cons} + \text{-0.026(0.003)(Age-gm)}_{ij} + \text{0.272(0.076)Unemployed (2,4,6)}_{ij} + \text{0.028(0.009)(PHQ9\_first-gm)}_{ij} + \text{0.021(0.010)(GAD7\_first-gm)}_{ij} + \text{0.015(0.005)(WSAS\_first-gm)}_{ij}$$

$$\beta_{0j} = \text{-1.048(0.057)} + u_{0j}$$

$$\begin{bmatrix} u_{0j} \end{bmatrix} \sim \text{N}(0,\ \Omega_u)\ :\ \Omega_u = \begin{bmatrix} \text{0.056(0.026)} \end{bmatrix}$$

$$\text{var}(\text{Drop\_Out\_Binary}_{ij}|\pi_{ij}) = \pi_{ij}(1 - \pi_{ij})/\text{Denom}_{ij}$$

(3786 of 3806 cases in use)

UNITS:

Worker_ID_@Assessment: 71 (of 71) in use

Appendix P

Odds ratios for significant predictor variables of dropout in a multilevel model sensitivity analysis, with 95% confidence intervals (CI) using 2nd order PQL

	β	Standard Error	Odds ratio	Lower 95% CI	Upper 95% CI	*p*
Age-grand mean centred	-0.026	0.003	0.97	0.97	0.98	<.001
Unemployed	0.272	0.076	1.31	1.13	1.52	<.001
Baseline PHQ-9 – grand mean centred	0.028	0.009	1.03	1.01	1.05	0.002
Baseline WSAS – grand mean centred	0.015	0.005	1.02	1.01	1.03	0.003
Baseline GAD-7 – grand mean centred	0.021	0.010	1.02	1.00	1.04	0.036

Note. Patient Health Questionnaire-9 (PHQ-9); Work and Social Adjustment Scale (WSAS); Generalised Anxiety Disorder Assessment (GAD-7).

Appendix Q

Primary analysis single-level linear regression model

$$\text{Expectancy}_i = 7.255(0.043) + 0.243(0.050)\text{Female}_i + -0.272(0.049)\text{Unemployed (2,4,6)}_i + -0.021(0.006)(\text{PHQ9\_first-gm})_i + 0.024(0.006)(\text{GAD7\_first-gm})_i + -0.008(0.003)(\text{WSAS\_first-gm})_i + e_i$$

$e_i \sim N(0, \sigma_e^2)$ $\sigma_e^2 = 3.397(0.062)$

*-2*loglikelihood* = 24319.450(5989 of 6051 cases in use)

Appendix R

Sensitivity analysis single-level linear regression model

$$\text{Expectancy}_i = 7.297(0.047) + 0.267(0.055)\text{Female}_i + -0.284(0.054)\text{Unemployed (2,4,6)}_i + -0.018(0.006)(\text{PHQ9\_first-gm})_i + 0.023(0.007)(\text{GAD7\_first-gm})_i + -0.011(0.004)(\text{WSAS\_first-gm})_i + e_i$$

$e_i \sim N(0, \sigma_e^2)$ $\sigma_e^2 = 3.378(0.068)$

*-2*loglikelihood* = 20198.752(4981 of 5022 cases in use)

Appendix S

Significant predictors of expectancy in the linear regression model sensitivity analysis with 95% confidence intervals (CIs).

	β	Standard Error	CI (95%)	*p*
Fixed Part[a]				
Constant[b]	7.297	0.047	7.205 – 7.389	<.001
Female	0.267	0.055	0.159 – 0.376	<.001
Unemployed	-0.284	0.054	-0.390 - -0.178	<.001
Baseline PHQ-9 – grand mean centred	-0.018	0.006	-0.030 - -0.005	.005
Baseline GAD-7 – grand mean centred	0.023	0.007	0.010 – 0.037	.001
Baseline WSAS – grand mean centred	-0.011	0.004	-0.018 - -0.003	.004
Patient-level Variance (*n* = 4981)	3.378	0.068		
-2*loglikelihood:	20198.752			

Note. Patient Health Questionnaire-9 (PHQ-9); Generalised Anxiety Disorder Assessment (GAD-7); Work and Social Adjustment Scale (WSAS).

[a] Case-mix model

[b] Expectancy measure collected at the end of the first assessment session

Appendix T

Primary multilevel model analysis for hypothesis three (expectancy)

$$\text{Expectancy}_{ij} = \beta_{0j} + 0.236(0.046)\text{Female}_{ij} + -0.213(0.046)\text{Unemployed (2,4,6)}_{ij} + -0.028(0.005)(\text{PHQ9\_first-gm})_{ij} + 0.020(0.006)(\text{GAD7\_first-gm})_{ij} + e_{ij}$$

$$\beta_{0j} = 7.135(0.076) + u_{0j}$$

$u_{0j} \sim \text{N}(0, \sigma^2_{u0})$ $\sigma^2_{u0} = 0.531(0.077)$

$e_{ij} \sim \text{N}(0, \sigma^2_e)$ $\sigma^2_e = 2.815(0.052)$

*-2*loglikelihood* = 23533.806(6007 of 6051 cases in use)

UNITS:

Worker_ID_@Assessment: 148 (of 148) in use

Appendix U

Calculation of therapist effects for hypothesis three (expectancy)

Primary analysis for therapy effects

Add together therapist and patient level effects together
0.531 (therapist level variance) + 2.815 (patient level variance) = 3.346 (overall variance)
0.531 (therapist level variance) / 3.346 (overall variance) x 100 = 15.87
15.87% is the therapist effect

Sensitivity analysis for therapist effects

0.631 (therapist level variance) + 2.737 (patient level variance) = 3.368 (overall variance)
0.631 (therapist level variance) / 3.368 (overall variance) x 100 = 18.74
18.74% is the therapist effect

Appendix V

Sensitivity analysis multilevel model for hypothesis three (expectancy)

$$\text{Expectancy}_{ij} = \beta_{0j} + 0.254(0.050)\text{Female}_{ij} + -0.222(0.049)\text{Unemployed (2,4,6)}_{ij} + -0.022(0.006)(\text{PHQ9\_first-gm})_{ij} + 0.018(0.006)(\text{GAD7\_first-gm})_{ij} + -0.007(0.003)(\text{WSAS\_first-gm})_{ij} + e_{ij}$$

$$\beta_{0j} = 7.219(0.104) + u_{0j}$$

$u_{0j} \sim \text{N}(0, \sigma^2_{u0})$ $\sigma^2_{u0} = 0.631(0.114)$

$e_{ij} \sim \text{N}(0, \sigma^2_e)$ $\sigma^2_e = 2.737(0.055)$

*-2*loglikelihood* = 19345.659(4981 of 5022 cases in use)

UNITS:

Worker_ID_@Assessment: 71 (of 71) in use

Appendix W

Sensitivity analysis multilevel model with significant predictors of expectancy, with 95% confidence intervals (CIs).

	β	Standard Error	CI (95%)	*p*
Fixed Part[a]				
Constant[b]	7.219	0.104	7.015 – 7.423	<.001
Female	0.254	0.050	0.155 – 0.352	<.001
Unemployed	-0.222	0.049	-0.318 - -0.125	<.001
Baseline PHQ-9 – grand mean centred	-0.022	0.006	-0.034 - -0.011	<.001
Baseline GAD-7 – grand mean centred	0.018	0.006	0.006 - 0.031	.004
Baselines WSAS – grand mean centred	-0.007	0.003	-0.013 - -0.000	.050
Random Part[c]				
Patient-level Variance (*n* = 4981)	2.737	0.055		
Therapist-level Variance (*n* = 71)	0.631	0.114		
ICC				
-2*loglikelihood:	19345.659			

Note. Patient Health Questionnaire-9 (PHQ-9); Generalised Anxiety Disorder Assessment (GAD-7); Work and Social Adjustment Scale (WSAS); Intraclass correlation (ICC).

[a] Case-mix model

[b] Expectancy measure collected at the end of the first assessment session

[c] Multilevel model

Appendix X

Sensitivity analysis plot of therapist residuals (with 95% CIs) for patient expectations