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A Feasibility Study of a Novel Work-focused Relational Group CBT Treatment Programme for Moderate to Severe Recurrent Depression.

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A Feasibility Study of a Novel Work-focused Relational Group CBT Treatment Programme for Moderate to Severe Recurrent Depression

Abstract

Purpose: No current psychotherapeutic intervention is designed to enhance job retention in employees with moderate-severe recurrent depression. The aim of this study was to test the feasibility of a new, interdisciplinary Work-focused Relational Group CBT Treatment Programme for moderate-severe depression.

Design: The programme was based on a theoretical integration of occupational stress, psychological, social/interpersonal, and bio-medical theories. It consisted of (i) up to four 1:1 psychotherapy sessions; (ii) twelve work-focused, full-day, weekly CBT sessions facilitated by a cognitive behavioural therapist and occupational therapist; and (iii) up to four optional 1:1 sessions with an occupational therapist. Depression severity (primary outcome) and a range of secondary outcomes were assessed before (first CBT session) and after (twelfth CBT session) therapy using validated instruments.

Findings: Eight women (26-49 years) with moderate-severe depression participated. Five were on antidepressant medication. While there was no statistically significant change in HAM-D depression scores after therapy (n=5; p=0.313), BDI-II depression scores significantly decreased after therapy (n=8; -20.0 median change, p=0.016; 6/8 responses, 7/8 minimal clinically important differences, two remissions). There were significant improvements in the secondary outcomes of overall psychological distress, coping self-efficacy, HRQoL, and interpersonal difficulties after therapy. All clients in work at the start of therapy remained in work at the end of therapy. The intervention was safe and had 100% retention.

Originality: While limited by a recruitment shortfall, missing data, and client heterogeneity, this study showed promising immediate positive outcomes for the new programme in terms of depressive symptoms, interpersonal difficulties, and job retention that warrant exploration in a definitive study.

Keywords: Cognitive behavioural therapy; depression; interpersonal difficulties; job retention

Article classification: Research Paper

Introduction

Depression is associated with limitations in work functioning and work participation that may result in exit from permanent employment on health grounds (Lagerveld *et al.*, 2010, van Rijn *et al.*, 2014). The National Institute of Health and Care Excellence recommends combining antidepressant medication concurrently or sequentially with psychological therapy such as cognitive behavioural therapy (CBT) or interpersonal psychotherapy (IPT) to treat severe depression, as well as providing active support and advice on self-management (National Institute for Clinical Excellence, 2009). Vocational rehabilitation is also recommended for people who have lost their job due to chronic moderate-severe depression.

However, there is currently only one specific clinical guideline for chronic depression (Jobst *et al.*, 2016), which recommends combining pharmacological treatment with an interpersonally focused psychotherapy. Cognitive behavioural analysis system of psychotherapy (CBASP) should be offered as a first-line treatment and IPT as a second-line treatment based on the conceptualisation of recurrent depression as causally and dynamically related to interpersonal excesses and deficits, which might make establishing a therapeutic alliance problematic (Weck *et al.*, 2013).

This study focuses on employed service users of UK Community Mental Health Teams (CMHTs) with moderate-severe recurrent depression or with long-standing depression plus a high degree of chronicity, complexity, and comorbidity causing work dysfunction. For CMHT service users, Care Programme Approach guidance recommends that employment problems should be addressed as part of the care plan (Agnew, 2004). However, only 27% of service users reported that NHS mental healthcare services 'definitely' gave them any support with finding work or maintaining employment in the previous twelve months (Care Quality Commission, 2020), suggesting that gaps exist in the care delivered to these individuals.

In terms of the prevalence, quality, and effectiveness of work-focused interventions for depression, several studies have evaluated face-to-face psychotherapeutic interventions and reported both clinical and work outcomes. Indeed, several meta-analyses evaluating interventions to support people with or at risk of developing mental health problems found that they are effective at reducing sickness absence and reducing levels of anxiety and depression compared to doing nothing at all (Doki *et al.*, 2015, Mikkelsen and Rosholm, 2018, Nieuwenhuijsen *et al.*, 2020, Nigatu *et al.*, 2016, Tan *et al.*, 2014), including a Cochrane review describing specific components in detail (Nieuwenhuijsen *et al.*, 2020). Another recent systematic review of work-based depression programmes found that a

primary preventative CBT-informed psychotherapeutic intervention, 'Be Well At Work', was 'promising' for American organisations, but no study focused on employees with moderate-severe recurrent depression (Bond *et al.*, 2019). Universal and targeted CBT-based interventions that promote adaptive coping, delivered in the workplace and mostly in a group format, also appear to be effective in reducing depressive symptoms in employees (Yunus *et al.*, 2018).

In terms of the types of interventions that might help to prevent work disability in employees with depression, Cullen *et al.* (2018), in their systematic review, found that 'multi-domain interventions' integrating 'healthcare provision, service coordination, and work accommodation components' were beneficial because CBT alone was ineffective in improving return-to-work outcomes for employees with mental health problems. Two other systematic reviews found evidence that CBT-based interventions with a work focus and that included problem-solving return-to-work strategies (Joyce *et al.*, 2016) improved work (i.e., duration of sickness absence) and clinical outcomes at the tertiary (indicated) prevention level. Psychological treatments were found to be more effective than care as usual with a small effect size in reducing the length of sickness absence and in reducing symptoms of common mental health disorders (Finnes *et al.*, 2019, Salomonsson *et al.*, 2018). However, psychological treatments were found to be no more effective than other clinical interventions (Finnes *et al.*, 2019).

However, most studies have concentrated on interventions designed to improve return-to-work or reduce absenteeism rather than preventing exit from work in people with mild-moderate depression, common mental health conditions, and work-related stress or burnout. Most excluded people with more severe and enduring mental health problems. Only five studies met inclusion criteria for this study (Vlasveld *et al.*, 2012, Wang *et al.*, 2007, Schoenbaum *et al.*, 2002, Burnand *et al.*, 2002, Knekt *et al.*, 2008). Therefore, while the impact of psychotherapeutic interventions on work-related outcomes has been examined, there is still a gap in terms of work-focused psychotherapeutic interventions specifically designed to enhance job retention in employees with more severe mental health problems. To our best knowledge, there is currently no psychotherapeutic intervention specifically designed to enhance job retention in employees with moderate-severe recurrent depression.

We therefore hypothesized that interdisciplinary, work-focused psychotherapy would have the triple benefits of alleviating the symptoms of depression, improving interpersonal difficulties, and enhancing job retention. Using Medical Research Council (MRC) guidance for developing, evaluating, implementing and reporting on complex health and social care interventions (Campbell *et al.*, 2000, Craig *et al.*, 2008, Moore *et al.*, 2015), we tested the feasibility of implementing and evaluating a new Work-focused Relational CBT Treatment

Programme for moderate to severe depression. The new programme was based on a theoretical integration of occupational stress, psychological, social/interpersonal, and bio-medical theories and consisted of (i) 1:1 sessions with a psychotherapist; (ii) a work-focused, twelve-week group CBT programme; and (iii) optional 1:1 sessions with an occupational therapist. The balance of content, process and job retention components, and the high intensity and high dose of therapy differentiated this intervention from other interventions such as Work-Related Interpersonal Group Psychotherapy (W-IPT) (Niedermoser *et al.*, 2020), which targets employees depressed due to work-related stress and excludes those on medication or with personality disorder traits, i.e., common CMHT service users with longstanding and/or treatment-resistant mental health problems. Using a series of validated instruments to assess the severity of depression, coping and self-efficacy, health-related quality of life, interpersonal difficulties, and work and social functioning, we show that the new intervention had a positive impact on most of these domains by the end of group therapy, paving the way for a definitive clinical trial.

Method

Ethical statement

The University [redacted] Research Ethics Committee, the NHS Local Research Ethics Committee (LREC) via IRAS, and the NHS Trust's Research and Innovation department approved the study protocol. The study conformed to the Declaration of Helsinki (World Medical Association, 1996) and Good Clinical Practice (Medicines and Healthcare products Regulatory Agency, 2012). The study was indemnified by the University of [redacted]. All participants provided written informed consent.

Study setting, design, participant recruitment, and inclusion and exclusion criteria

This feasibility study was a single-centre, quasi-experimental study with a pre-post design and non-blinded outcome assessment conducted in an NHS secondary mental healthcare service in the UK using an established conceptual framework and recommended format for carrying out feasibility studies (Eldridge *et al.*, 2016). The study is reported using the Transparent Reporting of Evaluations with Nonrandomized Designs (TREND) statement checklist (Des Jarlais *et al.*, 2004).

Potential participants were adult service users of several inner-city and rural CMHTs. Inclusion criteria were: adults aged between 18-64 years; met the service threshold for moderate to severe recurrent depression (BDI-II >20); able to communicate in English; employed either full-time/part-time or on short-term sickness absence due to recurrent

depression; intended to maintain or resume employment; and were willing to participate in group therapy and abide by group ground rules. Following screening with the BDI-II, potential participants were assessed by [redacted], a qualified psychotherapist, using a structured clinical interview to confirm a diagnosis of moderate-severe recurrent depression (ICD-10 F33.1 or F33.2). Axes II disorders were not assessed. Exclusion criteria were: an intellectual disability (IQ <70); severe medical illness or physical disability that would significantly interfere with participation in group therapy; a recent history of interpersonal violence, which is contraindicated for group therapy; symptoms of an acute psychotic illness, organic brain disorder, an anxiety or eating disorder as the main presenting problem; substance misuse as the main presenting problem; current, frequent and serious self-harm (requiring medical intervention ≥ once a week); and/or had not worked in the previous 12 months. Clients on psychotropic medication and showing mild-moderate Axes II personality disorder traits were not excluded, as these features are common in UK CMHT service users.

Different strategies were used to elicit referrals and self-referrals, with the most successful strategy being a direct referral from the CMHT at intake and the least successful strategy being writing to clients on psychotherapy waiting lists offering information about the study.

The intervention

The programme theory of the new intervention was further refined through consultation with key stakeholders in eight focus groups. The treatment programme had triple foci: (i) presenting problems (such as symptoms of depression), (ii) work issues (such as occupational stress), and (iii) underlying issues (such as trauma, core beliefs and maladaptive coping). There were three main components (individual sessions, group sessions, and optional occupational therapy sessions), as well as a discharge-planning session. No incentives were provided to increase compliance or adherence, although a range of strategies were used to engage and motivate clients to attend sessions and persist with treatment such as case tracking and between-session outreach (see **Table 1** and **Supplementary** for complete details of the intervention).

[insert Table 1 here]

Clients received up to four 1:1 sessions with a psychotherapist for assessment and formulation prior to the group sessions so that each client's problems could be personalised and contextualised taking into consideration intrapersonal, interpersonal, and work factors. A work-focused care plan was developed in collaboration with the participant based on the person-environment-occupation (PEO) model (Law *et al.*, 1996) with the bio-psychosocial-ecological (BPE) model of mental health (Lehman *et al.*, 2017) such that the care plan was compliant with the Trust's Care Programme Approach (CPA) policy. 1:1 assessment

sessions took place either in a CBT clinic based at a mental health hospital or at an outpatient psychotherapy service.

The group CBT sessions were co-facilitated by a group psychotherapist [redacted] accredited in CBT and by an OT [redacted] with a postgraduate qualification in Vocational Rehabilitation. This component consisted of twelve weekly sessions (10 am to 3 pm). The intervention incorporated job retention goals prescribed for each client every week during group sessions and the opportunity to discuss an 'interpersonal situation' at work (or at home) which had triggered distress using the 'double donut' exercise. The psychoeducation content included basic CBT concepts and skills, whilst the interpersonal process of the group sessions included the skilful facilitation of peer interaction for the purposes of behavioural activation, cognitive restructuring, problem-solving, and emotional co-regulation.

In addition, clients were offered up to four 1:1 sessions with an OT to undertake an occupational analysis in terms of 'the worker, their work, and the workplace' (Cameron *et al.*, 2012) and to intervene in helping the client maintain, gain, or change employment, including low-key liaison with the workplace for some clients as necessary.

Fidelity to the model was promoted by setting aside time before, during, and after each group session for briefing and de-briefing, whereby both facilitators provided feedback to the other after each session using a group CBT competencies checklist. Quality assurance was similarly provided by a Consultant Psychologist, a specialist in CBT, who provided live supervision through close observation of one group session and scored fidelity using the same checklist.

Hypotheses

The primary hypothesis was that participation in a new Work-focused Relational Group CBT Treatment Programme would result in statistically and clinically significant changes in symptoms of depression and in interpersonal functioning and that these changes would help participants maintain their employment.

The secondary hypothesis was that participation would also result in statistically and clinically significant changes in: 1) overall psychological distress, 2) workplace stress, 3) quality of life, 4) coping self-efficacy, and 5) interpersonal skills compared to baseline.

The null hypothesis was that participation would not result in statistically or clinically significant changes in any of the above measures and that participants would lose their jobs.

Outcome measures

The primary outcome depression measured using the Hamilton Rating Scale for Depression (HAM-D 21-item: clinician-rated) (Moberg *et al.*, 2001, Hamilton, 1986). Independent

outcome assessors (OAs) were trained to administer the HAM-D over the telephone. Secondary outcomes measures were: the Beck Depression Inventory-II (BDI-II 21-item: self-rated) (Beck *et al.*, 1996); the Work and Social Adjustment Scale (WSAS 5-item: self-rated) (Mundt *et al.*, 2002); the Coping Self-Efficacy Scale (CSES 26-item: self-rated) (Chesney *et al.*, 2006); the Inventory of Interpersonal Problems (IIP-32-item: self-rated) (Horowitz *et al.*, 1988); the Health and Safety Executive Management Standards Indicator Tool (35-item: self-rated) (Edwards *et al.*, 2008); Clinical Outcomes in Routine Evaluation (CORE 34-item: self-rated) (Evans, 2000); Agnew Relationship Measure-5 (ARM 5-item: self-rated) (Agnew-Davies *et al.*, 1998); quality of life (EQ-5D 5-item: self-rated) (Herdman *et al.*, 2011); Client Satisfaction Questionnaire (CSQ 8-item: self-rated) (Attkisson and Zwick, 1982). Job retention was assessed using a dichotomous two-point scale (Yes/No) on a bespoke weekly questionnaire which also determined the proportion (expressed as %) of agreed hours at work in the last week and intention-to-quit (expressed as %). The CORE-OM was used weekly as a case tracking tool.

Economic evaluation

An economic evaluation was undertaken to estimate the total direct and indirect costs of providing the intervention using Healthcare Financial Management Association (HFMA, 2014) guidance. The total direct cost was calculated by working out how much each practitioner was paid by the hour (plus 22% uplift for on-costs) multiplied by how much time they spent on direct clinical contact, and the total indirect cost was calculated by working out how much time each practitioner spent on non-clinical activity such as clinical supervision, preparation, brief/debrief, and administration, multiplied by each practitioner's hourly rate.

Sample size, data collection, and statistical analysis

The sample size was pragmatically determined by the number of participants recruited in the time available. Nevertheless, some assumptions were made about the power calculation based on detecting a difference of 4.0 units on the HAM-D total score, a standard deviation (SD) of 8, an alpha level of 5%, and a power of 80%. This indicated that the required number of subjects based on these figures would be 45 per treatment group or 90 subjects in total in a future definitive trail.

Quantitative data were collected at the first CBT group session (pre-treatment) and after the twelfth CBT group session (post-treatment) for all instruments except CORE and BDI-II, which were collected at enrolment (pre-treatment) and after the twelfth CBT group session (post-treatment). Quantitative data were managed in SPSS v14 (IBM Statistics, Armonk, NY). Group scores for the primary and secondary outcomes (mean scores, confidence

intervals, and effect sizes) were compared before and after treatment using the Wilcoxon matched-pairs signed rank test. A p-value <0.05 was considered statistically significant.

Results

Participant demographics and baseline clinical characteristics

Several different recruitment strategies were used: writing to clients on psychotherapy waiting lists, eliciting referrals from clinicians, encouraging self-referrals, and canvassing third sector organisations. Of 79 potential participants invited in two sites, fifteen asked for more information, eleven gave consent, and eight finally entered treatment. Baseline demographics are summarised in **Table 2**. All participants were female and aged between 36-49 years; seven were White-British and one was African-British. Seven women were married or co-habiting, one was single, and four had children.

All clients were either currently or recently in employment. The inclusion criteria were relaxed so that two clients who had lost their jobs while on the waiting list for CBT were included. Of those working at the start of CBT, three worked part-time, three worked full-time, one was in voluntary work, and one was unemployed. Two women were in skilled jobs and were professionally qualified, while three women were in low paid unskilled jobs. One woman was in a semi-skilled job and was also a self-employed shopkeeper. One woman recently lost an unskilled job, and one woman was volunteering but previously in a skilled job that required specific training. Three women were off sick at enrolment and one was claiming welfare benefits.

Clients had a high degree of complexity, comorbidity, chronicity, and complicating risks; all clients reported childhood trauma, adversity and/or abuse (data not shown). However, all except one also reported a high level of occupational stress.

[insert Table 2 here]

Outcome evaluation

Prior to the intervention, the median scores were in the severe range for self-rated depression, psychological global distress, interpersonal problems, and work-related stress. For health-related quality of life, work and social adjustment, and coping self-efficacy, mean scores were in the moderately poor, lower, or unhealthy range (**Table 3**).

With respect to the primary outcome of depression severity, while there was no statistically significant change in HAM-D scores after therapy (n=5; p=0.313), most likely due to missing data, BDI-II scores significantly decreased after therapy (n=8; -20.0 median change,

p=0.016). There were significant reductions in overall psychological distress and interpersonal difficulties, and significant improvements in coping self-efficacy and HRQoL after therapy measured using the CORE, IIP-32, CSES, and EQ-VAS instruments, respectively.

[insert Table 3 here]

Individual changes in instrument scores are illustrated in **Figure 1**. Reflecting the group statistics, therapy had a positive effect on the majority of clients for most metrics. With respect to BDI-II scores, 6/8 clients showed responses (>50% reduction), 7/8 clients showed minimal clinically important differences (>30% reduction), and two clients were deemed in remission after group sessions (scores ≤9). Only one client had an increase in depression severity (HAM-D and BDI-II) and overall psychological distress (CORE), although this client showed stability or mild improvements in all the other instruments. At the end of the treatment programme, five clients had significant improvements in IIP-32 scores.

[insert Figure 1 here]

The EQ-VAS scores were used to compare client quality of life data with the UK general population (EuroQol Group, 2009). While there was a significant improvement in EQ-VAS after therapy (p = 0.031), there was a highly significant difference between the clients' quality of life and the general population's quality of life after treatment (p=0.002).

Work status – qualitative analysis

The pre- and post-treatment employment statuses of the study participants are shown in **Table 4**. Overall, all clients used their job retention goals to effect positive changes with regards to their employment status. Of the clients in employment at enrolment, no-one lost their job during the intervention. Of the clients on short-term sickness absence due to physical health problems at enrolment, by the end of the group CBT programme, both clients had returned to their part-time contracted hours. One client had returned to her full-time contracted hours from restricted duties having negotiated reasonable adjustments. The client in voluntary work had increased her voluntary hours

Of the clients who were working their contracted hours at baseline, by the end of the group CBT programme, one had maintained her contracted hours and was coping much better at work, and one had maintained her employment but was considering other jobs that would be better suited to her interest and skills.

[insert Table 4 here]

Recruitment, utility of the outcome measures, intervention delivery, therapeutic alliance, client satisfaction, and economic analysis

The most effective recruitment strategy was through direct contact with CMHT practitioners so that the researchers could explain the study and describe the intervention. In future, more time would be required to engage potential participants, preferably at intake, bearing in mind possible barriers to recruitment of men and members of minority groups.

The new intervention was delivered successfully and safely as planned. There were two adverse events during group CBT: one client took a parasuicidal overdose (without suicidal intent) that required hospital treatment; she was discharged the following day and attended the next group session. The other client made use of the 24/7 crisis helpline on one occasion. Both clients' mental health had improved by the end of group CBT.

There was a 100% client retention rate. The group programme was well attended [mean number of sessions attended 10.63 (SD 1.87); mean number of clients per session 7.08 (SD 0.95)]. Adherence was high, with the majority of out-of-session assignments completed by most clients. Whilst some clients struggled to attempt all of their goals, everyone attempted at least one goal every week.

As assessed by the ARM-5 after each session, the mean therapeutic alliance per session was 34.4 (SD 0.68) and the mean therapeutic alliance per client was 34.4 (SD 1.14), suggesting a positive bond and partnership with the co-facilitators and confidence in the treatment. The mean client satisfaction measured by the CSQ-8 was 27.0 (SD 2.08), suggesting that clients were highly satisfied with their overall treatment.

The mean direct cost per client was calculated as £4,552, with mean total costs per client of £6,457.

Discussion

Depression is associated with an increased risk of job loss and subsequent adverse outcomes, and individuals with depression are less likely or able to access available occupational help (Lagerveld *et al.*, 2010, van Rijn *et al.*, 2014). Current solutions tend to focus on returning to work rather than preventing exit from work. While depressed clients may therefore benefit from work-focused interventions to address the specific effects of depression that contribute to workplace limitations, there have been few attempts to develop work-focused psychotherapeutic interventions for moderate-severe recurrent depression.

To address this gap, we performed a feasibility study of a new complex intervention, the Work-focused Relational Group CBT Treatment Programme. The balance of content, process and job retention components, and the high intensity and high dose of therapy differentiated this intervention from other interventions such as Work-Related Interpersonal

Group Psychotherapy (W-IPT) (Niedermoser *et al.*, 2020), which targets employees depressed due to work-related stress and excludes those on medication or with personality disorder traits. The programme theory for the new intervention was based on the interpersonal theory of depression. Group processes were used deliberately and purposefully to target patterns of aversive, rejection-eliciting, and stress-inducing relational behaviour which are thought to perpetuate depression (Hammen, 2006, Horowitz and Vitkus, 1986, Joiner and Coyne, 1999, McCullough Jr, 2003, Starr and Davila, 2008).

Despite the small number of clients, we detected significant improvements in depression severity (BDI-II), overall psychological distress, coping self-efficacy, HRQoL, and interpersonal difficulties after therapy. Furthermore, all clients in work at the start of therapy remained in work at the end of therapy, with two having returned from sick leave and one having progressed from restricted to full duties. Although relatively expensive, the intervention was safe, had 100% retention, and clients were confident and satisfied with their treatment. These findings provide a promising platform for the initiation of a larger-scale clinical trial to assess the full effects of this intervention over the longer term.

A few RCTs have evaluated work-focused CBT interventions in different client populations. Most concentrated on return-to-work rather than job retention and involved clients off sick with mild-moderate common mental disorders, work-related stress, or burnout (Dalgaard *et al.*, 2017b, de Weerd *et al.*, 2016, Lagerveld, 2017, Noordik *et al.*, 2013, Reme *et al.*, 2015). One RCT evaluated individual placement and support enhanced with work-focused CBT for CMHT service-users in the UK, but the clients were unemployed and 77% were diagnosed with psychosis (Schneider *et al.*, 2016). Only two studies included some employees at work (Lagerveld, 2017, Reme *et al.*, 2015), and whilst a return-to-work plan was usually formulated, only three liaised directly with the workplace (Dalgaard *et al.*, 2017b, de Weerd *et al.*, 2016, Reme *et al.*, 2015). Overall, results were disappointing, with five studies reporting unexpected or negative results and the intervention being associated with a similar or longer time to the full resumption of normal duties than waiting list or care-as-usual (Dalgaard *et al.*, 2017a, de Weerd *et al.*, 2016, Lagerveld, 2017, Noordik *et al.*, 2013) or number of hours worked (Schneider *et al.*, 2016). Non-randomised studies of work-focused CBT have included clients off sick with mild-moderate depression (Brenninkmeijer *et al.*, 2019, Gjengedal *et al.*, 2020) and clients off sick with moderate-severe depression (Ito *et al.*, 2019). The interventions were in the 1:1 format except for one that used a group-based intervention (Ito *et al.*, 2019). Only one study was based in the UK, and none of the interventions was designed specifically for employed service-users accessing CMHTs for moderate-severe recurrent depression.

Our intervention appeared to have a positive impact on clinical status. While there was no significant difference in median HAM-D scores pre- and post-treatment, there were significant changes in median BDI-II values. These discrepancies may have been due to statistical and/or methodological reasons. Pre- and post-treatment HAM-D data were only available for five of the eight participants, reducing the statistical power of the analysis; regardless, four clients showed post-treatment improvements in symptoms. Furthermore HAM-D is designed to detect changes in somatic symptoms (Hamilton, 1960), whereas the BDI-II is designed to detect changes in affective and cognitive symptoms (Beck *et al.*, 1961); therefore, physical health problems may have had a disproportionate impact on HAM-D scores.

However, not every client benefitted, which may have been related to their individual contexts. The two women who achieved remission on the BDI-II were in stable, committed relationships, which may have been beneficial to both their mental health and their capacity to work. For women, being married or cohabiting is associated with a better therapeutic outcome (Meyers *et al.*, 2002, Thase *et al.*, 1992) and improved job satisfaction and engagement at work (Burnett *et al.*, 2012). These women were also in skilled or semi-skilled jobs, and this occupational context may have had a beneficial effect both on their mental health and their capacity to work. Conversely, the woman who had a limited or negative response to the new intervention was in an unstable relationship. This context may have had a deleterious effect both on mental health (Whisman, 2001) and work performance (Burnett *et al.*, 2012); dissatisfaction and discord in marital relationships are associated with worse depression (Whisman *et al.*, 2002) and vice versa (Najman *et al.*, 2014, Whisman and Uebelacker, 2009), and being single is also a risk factor for a limited or negative response to group CBT (Gelhart and King, 2002). Of the clients in unskilled low paid jobs, one deteriorated and scored worse than baseline. Lower socio-economic status is associated with less improvement in psychotherapy for depression (Falconnier, 2009) and lower educational achievement predicts partial or non-response to CBT (Stiles-Shields *et al.*, 2015). Some employment may be worse for mental health than unemployment (Chandola and Zhang, 2018), and, in one small study, employed clients were more symptomatic at the end of a group CBT skills-building programme for depression than unemployed clients (Gelhart and King, 2002). The relationships between these potential confounders and treatment effect need examining in a larger cohort of clients.

Suboptimal treatment responses may also have been due to an inadequate dose of therapy. Risk factors for relapse include experiencing residual symptoms at the end of treatment and having prior episodes of depression (Bockting *et al.*, 2015, Buckman *et al.*, 2018). For clients who have completed a course of CBT for prior episodes of depression, residual symptoms

predicted both short-term relapse and long-term recurrence (Wojnarowski *et al.*, 2019). In a study of clients completing a 16- or 20-week course of CBT for depression, 9% of those who fully recovered and 52% of those that partially recovered relapsed in the following twelve months (Thase *et al.*, 1992). Keeping clients in therapy for longer so that they achieve full remission and targeting affective reactivity, cognitive and information processing biases, and interpersonal stress may be required for recovery (Buckman *et al.*, 2018). Any future trial of our intervention requires long-term follow-up to examine the persistence of treatment effects.

In terms of mediator variables such as interpersonal problems (IPPs), all clients identified at least one IPP matching the top 5-10% of an outpatient sample (Leach *et al.*, 2004), suggesting that they had serious difficulties in relationships in at least one IIP-32 domain. By the end of the treatment programme, five clients had significant improvements in IIP-32 scores (overall p=0.016). A systematic review of different types of psychotherapy for depression that included IPPs as an outcome reported that clients showed an improvement in IPPs after brief psychotherapy (McFarquhar *et al.*, 2018). Similarly, a study evaluating IPT found that solving IPPs was correlated with an improvement in symptoms (Markowitz *et al.*, 2006). Other studies have shown that clients with more severe pre-treatment IIPPs had a poorer outcome in 1:1 cognitive therapy for depression (Renner *et al.*, 2012), and specific IPPs predicted less reduction in depression regardless of whether they received 1:1 CBT or 1:1 IPT for depression (Quilty *et al.*, 2013). Conversely, another study found that more severe pre-treatment IPPs were unrelated to post-treatment depressive symptoms in 1:1 CBT but predicted less symptom change in group CBT for depression (McEvoy *et al.*, 2014). Whilst our group-based therapeutic approach appeared to have a positive impact on IPPs, non-relational group CBT may not provide adequate support for vulnerable clients to relate effectively with each other in group sessions or might dilute the therapeutic relationship, limiting opportunities to target IPPs and personalise treatment.

For clients who had a positive work outcome, employment support and low-key liaison provided by an OT may have been a useful component of a work-focused psychotherapeutic intervention. However, it seemed to have only limited impact on occupational stress. For clients who did not access OT, it is unclear why they did not seek help. However, a possible drawback to involving an OT for 1:1 employment support and low-key liaison with the workplace was that clients who opted for this component had to disclose their mental health problem to their employer, which some may have been unwilling to do. In one study, only 21% of over 400 people with depression had ever disclosed it or asked their manager for help (Heinz *et al.*, 2018). One client was already receiving employment support through the Work Programme as a condition of her welfare benefit claim, which may have limited the

appeal of adjunctive OT. The exact impact of the OT component of the intervention is, therefore, uncertain.

The high and concentrated dose of therapy was well tolerated. Although the sample was small, the finding that all clients persisted with treatment despite various barriers is encouraging (Barrett *et al.*, 2008). For example, pooled results from a review comparing outcomes for 1:1 CBT and group CBT (Hans and Hiller, 2013) found that approximately 25% of all participants dropped out of CBT, with the attrition rate twice as high for 1:1 CBT compared to group CBT, perhaps because group CBT programmes generally have fewer sessions. Other studies have shown that the type and format of therapy do not affect drop-out rates (Swift and Greenberg, 2012). Our results also compare favourably to other psychotherapeutic interventions where attrition rates are high: for CBT outpatients in 1:1 psychotherapy drop-out is approximately 40% (Bados *et al.*, 2007); 25% for chronically depressed clients (Arnow *et al.*, 2007); and 50% for group CBT for mood disorders (Oei and Kazmierczak, 1997). A range of factors might influence decisions to attend, but our positive results are likely to be because we aimed to identify drop-out early through various methods of case tracking; different strategies were used to enhance engagement; group cohesion was created by the skilful facilitation of peer interaction; and the therapeutic alliance was strengthened by incorporating 1:1 sessions before and during group sessions.

The costs of delivering the intervention were relatively high, with the mean total per client estimated at £6,457, which compares to £2,895 per average course of treatment for people with mild-moderate symptoms in Improving Access to Psychological Therapies (Radhakrishnan *et al.*, 2013) and £4,418 for a complete course of 1:1 CBT (16 sessions plus two booster sessions) as mono-therapy for people with moderate-severe depression in secondary mental healthcare (Koeser *et al.*, 2015). The intervention was relatively expensive since it was labour-intensive, multi-modal, and delivered by a Cognitive Behavioural Therapist and an OT. Nevertheless, most clients remain on the caseloads of CMHTs for between 1-5 years (Care Quality Commission, 2020), so while reducing the dose and shortening the psychotherapeutic intervention may reduce immediate costs, it is possible that interventions are not long or focused enough to prevent re-referral, readmission, and the consequent economic burden. Clients who have responded to treatment but not fully remitted may subsequently relapse and seek further psychotherapy (Buckman *et al.*, 2018), and some clients frequently re-refer themselves because they need or want more help (Bouras *et al.*, 2018, Lousada *et al.*, 2015) due to complex environmental, historical, psychological problems (Cairns, 2014). However, according to the dose-effect model, clients might not necessarily need longer treatment programmes but rather a higher dose of therapy to achieve clinically meaningful change (Haase *et al.*, 2008).

This study has a number of limitations. Only a few clients were recruited, some data were missing, the client population was heterogeneous, no men were recruited, and the study was single-centre and unblinded. The referral rate was particularly low, which may be due to a research-resistant culture in mental health services, research being a low priority when services are being cut (Borschmann *et al.*, 2014), negative attitudes to psychotherapy (Denman, 2007), or unconscious biases such as referring fewer men (Talbot *et al.*, 2014). Some clients would not even consider taking part in research; some think they are ineligible, or that they do not need therapy; or that there are disadvantages to taking part in depression trials (Hughes-Morley, 2017). Clients may be put off by lengthy leaflets (Locock and Smith, 2011); some may not be able to access necessary travel expenses or childcare (Woodall *et al.*, 2010). Some may have had previous negative experience of CBT (Barnes *et al.*, 2012) or may have preferred a different modality (Liddon *et al.*, 2018, Seidler *et al.*, 2018). Clients prefer 1:1 psychotherapy over group psychotherapy (Haugh *et al.*, 2019, Strauss *et al.*, 2015) due to worries about confidentiality, fear of being criticised, or of losing control in front of others (Piper, 2008). In any future trial, the sample would need to be larger and more representative. The high rate of missing data for the HAM-D may have been because it can be time-consuming and may have been burdensome to clients (D'Avanzato and Zimmerman, 2017) or due to problems in collecting data over the telephone; clients may have found telephone calls from Outcome Assessors inconvenient or intrusive, especially if other family members were present, although other research shows that collecting questionnaire data over the telephone is acceptable (Aneshensel *et al.*, 1982, Simon *et al.*, 1993). Finally, our study only assessed immediate post-treatment outcomes, and further follow-up is necessary to establish whether the positive outcomes persist over time.

While these limitations do not allow us to draw unambiguous structural conclusions, this feasibility study of a new complex intervention, the Work-focused Relational Group CBT Treatment Programme for moderate to severe recurrent depression, showed promising immediate post-treatment outcomes in terms of depressive, interpersonal difficulties, and job retention that warrant further exploration in a larger-scale, longer-term, definitive study.

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Figure Legend

Figure 1. Individual changes in instrument scores before and after therapeutic intervention.

Table 1. An overview of the Work-focused Relational Group CBT Treatment Programme.

	Content components	Process components
1	**The Ability to REFLECT** The three feeling systems Types of thoughts **The donut model:** Inner me and outer me How the brain works (Video 1)	**MORNING** Icebreaker Experiential exercise: • *What is a thought, feeling, behaviour experiment* Skills practice: • *Abdominal breathing* • *Superman pose*
		AFTERNOON Small group discussion (two groups) Goal planning in reciprocating pairs Feedback in plenary
2	**The Ability to REGULATE** The threat system Types of feelings **The ABC model:** Triggers and past-present link How the brain works (Video 2)	**MORNING** Icebreaker Goal review in reciprocating pairs Feedback in plenary Experiential exercise: • *Symptom provocation, panic induction* Skills practice: • *Worry time* • *Appraisal and reappraisal*
		AFTERNOON As above.
3	**The Ability to RESOLVE** The motivation system Types of behaviour **The behaviour change model:** Vicious and virtuous cycles How the brain works (Video 3)	**MORNING** As above plus: Experiential exercise: • *My journey and overcoming obstacles to progress* • *One small change* Skills practice: • *Goal setting*
		AFTERNOON As above.
4	**The Ability to RELATE** The affiliation system Types of relationships **The double donut model:** Stress-reducing communication How the brain works (Video 4)	**MORNING** As above plus: Experiential exercise: • *Animal metaphor cards* • *What does the IIP-32 say about me?* Skills practice: • *Sharing my thoughts and feelings safely*
		AFTERNOON As above
5-10	Ad hoc content based on subjects / issues raised by clients on the day	**MORNING** As above plus: Double donut exercise: interpersonal problem-solving The Hot Seat or Telling My Story
		AFTERNOON As above
11	As above plus relapse prevention planning as a between-session goal	**MORNING** As above

		AFTERNOON As above
12	As above plus ending celebration event	**MORNING** As above
		AFTERNOON Relapse prevention planning in reciprocating pairs. Feedback and goodbyes in plenary

Table 2. Demographic and clinical characteristics of the study population

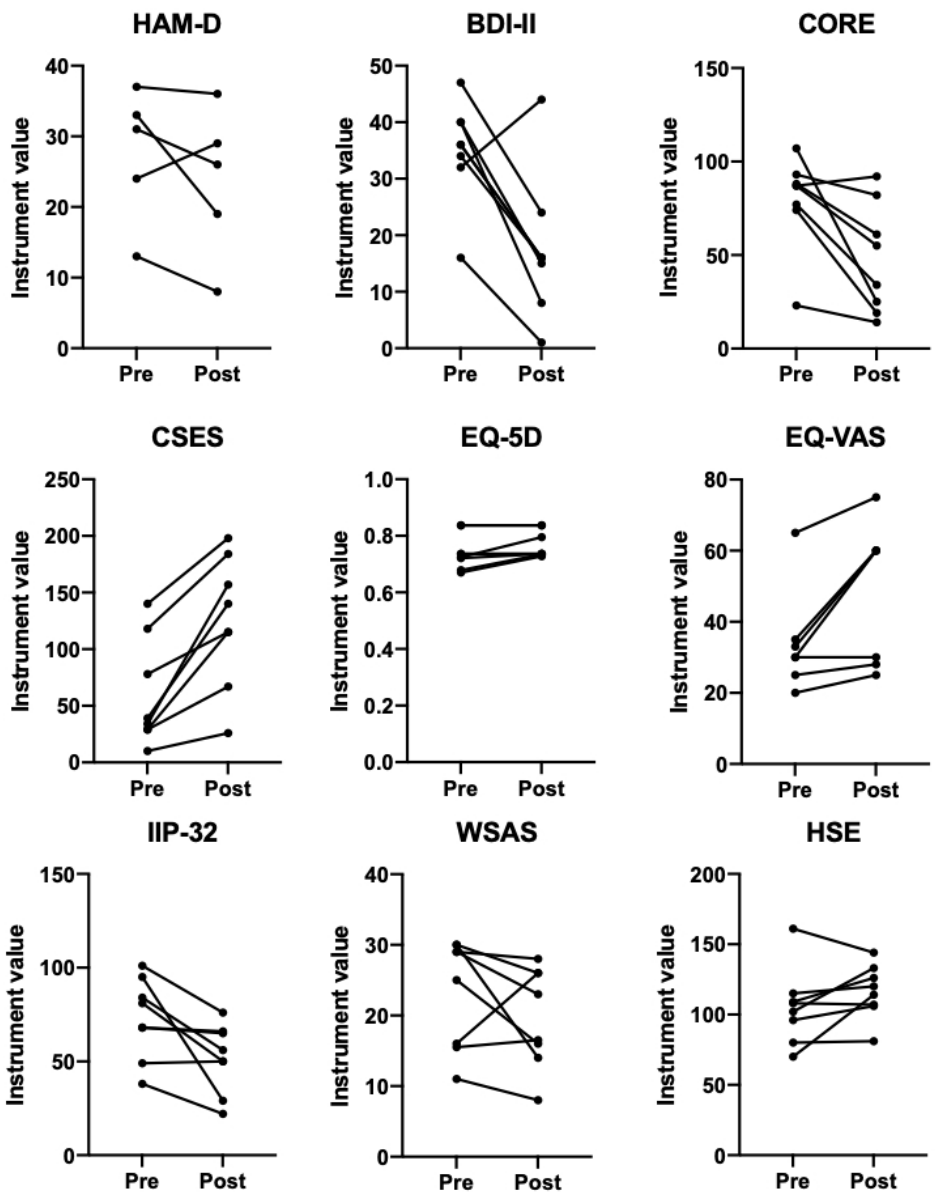
Characteristic	% (n)
Gender	
Male % (n)	0% (0)
Female % (n)	100% (8)
Age: mean (SD)	43.5 (4.42)
Number of children at home: mean (SD)	1 (1.12)
Ethnic Group	
White % (n)	87.5% (7)
Non-white % (n)	12.5% (1)
Marital Status	
Single % (n)	12.5% (1)
Married % (n)	50% (4)
Co-habiting % (n)	37.5% (3)
Divorced or separated % (n)	0% (0)
Accommodation	
Owner-occupier % (n)	75% (6)
Secure tenancy % (n)	0% (0)
Private landlord % (n)	25% (2)
Receiving state welfare benefits	
Not claiming benefits % (n)	87.5% (7)
Statutory Sick Pay % (n)	0% (0)
Employment Support Allowance % (n)	0% (0)
Disability Living Allowance % (n)	12.5% (1)
Work status	
Full-time paid % (n)	37.5 (3)
Part-time paid % (n)	37.5 (3)
Voluntary work % (n)	12.5 (1)
Unemployed % (n)	12.5 (1)

Table 31. Outcomes before and after therapeutic intervention

Outcome	Instrument	N	Before treatment Median (Range)	Clinical status	After treatment Median (Range)	Change Median (95% CI)	p-value
HAM-D	Depression	5	31 (13, 37)	Severe (>24)	26 (8, 36)	-5 (-14, 5)	0.313
BDI-II	Depression	8	36.0 (16, 47)	Severe (29-63)	16.0 (1, 44)	-20.0 (-27, -6)	**0.016**
CORE	Clinically-relevant psychological distress	8	87.0 (23, 107)	Severe (85-136)	44.5 (14, 92)	-29.5 (-64, -4)	**0.016**
CSES	Coping self-efficacy	8	36.5 (10, 40)	Unhealthy range (<150)	127.5 (26, 198)	62.0 (30, 108)	**0.008**
EQ-5D	Health-related quality of life	8	0.73 (0.67, 0.83)	Moderately poor (Mann, Gilbody, & Richards, 2009)	0.74 (0.73, 0.84)	0.007 (0.00, 0.07)	0.125
EQ VAS	Health-related quality of life	7	30.0 (20, 65)	Lower range	60.0 (25, 75)	10.0 (0, 28)	**0.031**
IIP-32	Interpersonal difficulties	8	74.5 (38, 101)	Most severe range (Horowitz et al., 1988)	53.0 (22, 76)	-20.5 (-42, -1)	**0.016**
WSAS	Work and social functioning	8	27.0 (11, 30)	Moderately severe (>20)	19.8 (8, 28)	-3.5 (-11, 4)	0.211
HSE	Experience of working conditions	8	105.0 (70, 161)	Low-moderate occupational stress (Cousins et al., 2004)	117.0 (81, 144)	7.5 (-6, 35)	0.156

Table 4. Changes in employment status before and after group therapy.

Client	Employment before therapy	Employment after therapy	Comments
1	Unemployed (recently dismissed)	Unemployed	Used job retention goals to tackle avoidance of seeking work through anxiety
2	Full-time, restricted duties	Full-time, full duties	Disclosed mental health problems, improved communication at work, positive changes to work behaviour
3	Part-time, off sick	Part-time	Used job retention goals to tackle avoidance of communicating with work
4	Part-time, off sick	Part-time	Used job retention goals to improve teamwork
5	Full-time	Full-time	Disclosed mental health problems, improved communication at work, but struggling to maintain employment
6	Voluntary work	Voluntary work, extra hours	Used job retention goals to write CV and reprocess trauma of previous job loss
7	Full-time	Full-time	Disclosed mental health problems, improved communication at work
8	Part-time	Part-time	Coping better at work after treatment, improved time management skills, and asked for colleague support when needed



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