Title: Effectiveness of Interpersonal Psychotherapy for Community Living Depressed Women Involved with the Justice System.

Short title: *IPT for Women in Justice System*

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The data that support the findings of this study are available from the corresponding author upon reasonable request.

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Abstract:

Background: Despite the prevalence of depression among women in the justice system, and its potentially significant consequences, there is a dearth of studies investigating psychological treatments for depression in this context, especially outside prison.

Aims: Our aim was to gather preliminary data on whether individual *interpersonal psychotherapy* (IPT) is an acceptable and effective treatment for depression in women at an early stage in the justice system.

Method: In this pilot study, IPT was offered to 24 depressed women following their first or second contact with the justice system. The women were assessed using a range of scales to quantify depression, anxiety, PTSD and social support. Multi-level models were used to explore interactions between change in depression and other features given the multiplicity and complexity of problems. Details on engagement and attrition were also collected.

Results: Therapy attrition was low, despite challenging life-circumstances and depression scores followed a linear trajectory with scores significantly decreasing over the time (β= -0.59, SE= 0.07, $p<0.001$). Participants with more adverse life events, attachment related anxiety and lower social support had poorer outcomes.

Conclusions and Implications: Results are encouraging. More than half of the hard-to-reach women who were eligible did engage, and retention rates suggest the therapy was acceptable to them. Depression scores improved, and potential factors affecting treatment outcome were identified. A randomised controlled trial is now warranted, ensuring adequate supplementary support for women with dependents living on their own and without employment.

Introduction

There is strong evidence that the majority of women who offend have multiple and complex needs. These generally include at least one, often more, of the following: experience of trauma; poor interpersonal relationships; difficulties with emotion regulation; insecure attachments; substance use problems or disorders; losing care of children; poverty, homelessness, and unequal access to healthcare (Angiolini et al, 2012; Corston, 2007; Gelsthorpe et al, 2007). Many of these issues have been associated with poorer treatment outcomes (Falkenström et al., 2013; Huibers at al., 2015; Nanni et al., 2012).

Mental health problems are particularly prevalent, with one of the most common diagnoses being depression (Hooks et al., 2011, unpublished; Tyler et al, 2019). A Ministry of Justice study (2018) found that 49% of female prisoners report symptoms of depression with a further study suggesting close to three quarters of women in prison meet criteria for depressive disorder (Tyler et al, 2019). Local evidence from Edinburgh's Women's Community Justice Centre found 87% of attendees presented with clinically significant depressive symptoms (Balfour, 2018).

Depression is associated with a decrease in an individual's ability to cope with complex life challenges (Johnson and Zlotnick, 2012). Evidence on desistence from offending indicates that the key factors which help women move away from offending are the development of positive interpersonal relationships, meaningful roles, and alternative pro-social identities (Rumgay, 2004; National Offender Management Service, 2015; Sharpe, 2015; Worral & Gelsthorpe, 2009). An inability to make such changes increases the likelihood that depressive symptoms will be maintained, but

also exacerbates the risk of repeated victimization and reoffending (Freudenberg et al, 2005; Johnson and Zlotnick, 2012). Depression has been found to be a stronger predictor of recidivism for women than for men (Benda, 2005).

Despite the prevalence and potentially significant consequences of depression, there is currently a lack of research investigating the effects of psychological treatments for women in the justice system. This may be a consequence of the difficulties experienced by women from this population in accessing and engaging with mental health services (Walsh et al., 2011; Leaman 2016; Carswell et al., 2017).

The limited available evidence suggests that *Interpersonal Psychotherapy* (IPT) might be a particularly effective treatment for this client group. IPT is a time-limited psychological therapy (12 – 16 sessions) developed as a treatment for depression. It is designed to alleviate symptoms, improve interpersonal functioning and increase use of interpersonal networks (Klerman et al, 1984). The explicit focus of IPT is on roles within relationships and identifying whether recent or future role changes should be the focus of therapy. Individuals are encouraged to consider alternative roles and identities through social network development. IPT may therefore be an appropriate therapy for women offenders due to the interpersonal nature of some of their difficulties (Johnson & Zlotnick, 2008).

IPT has repeatedly been shown to be effective as a treatment for major depressive disorder (Elkin et al, 1989; Markowitz & Weissman, 2012). It is included in numerous treatment guidelines for depression (American Psychiatric Association, 2010;

American Psychological Association, 2010; NICE, 2009; SIGN, 2010) and has been adapted for a wide range of populations.

Previous studies have found group IPT reduces depressive symptoms and increases positive social support in female prisoners with substance use disorder (Johnson & Zlotnick, 2008; 2012; 2015). An RCT also found that participants who received group IPT experienced more rapid symptomatic improvement than a control group (Johnson & Zlotnick, 2012). However, there are currently no studies examining the use of individual IPT in this population, or in community based women at an earlier stage of involvement with the criminal justice system.

Our aim, therefore, was to conduct an uncontrolled trial to assess the feasibility of delivering individual IPT to community-based women who were at an early stage of their involvement with the justice system, with a view to informing the development of a controlled study in the future. Additional aims were to provide preliminary data on the effectiveness of IPT for depression in in such women identify factors which may influence treatment engagement and outcomes.

Method

Ethical approval was obtained from NHS South East Scotland Research Ethics Committee (IRAS ref: 135787)

Participants

Participants were attendees at the Willow service, a women's Community Justice Centre in Edinburgh. Willow is a partnership between the City of Edinburgh Council

and NHS Lothian and provides trauma informed interventions to women at any stage of their involvement with the justice system.

Women were eligible to participate in the study if they met criteria for major depressive disorder (MDD), they were in current contact with the justice system as a result of their first or second offence, the offence was of a nature for which a court had not imposed a custodial sentence, and they were having current regular contact with their Community Justice Social Worker (CJSW).

Women were excluded from the study if they were experiencing a psychotic episode, had a diagnosed learning disability, were assessed as requiring an intensive group programme, or were not consistently engaging with their CJSW. Women were not excluded because of mental health co-morbidities, prescribed psychotropic medication or alcohol or illicit drug use.

Procedure

All women referred to Willow between September 2013 and April 2015 were considered for inclusion. Referred individuals' offending history was initially screened by the Senior Social Worker. Those who met offence related inclusion criteria were allocated to an IPT informed CJSW for full assessment. IPT informed workers had completed a half day training in IPT.

The initial CJSW assessment covered a broad range of issues including offending, finances, housing, education/employment, experience of trauma and substance use. As part of this process women were asked to complete the Patient Health

Questionnaire-9 (PHQ-9) to screen for depressive symptoms. Only women who scored 10 or above on the PHQ-9 were considered as potentially qualifying for inclusion and were given an information leaflet about IPT which their CJSW discussed with them. If interested, individuals were then asked to complete pre-intervention assessments with a female research psychologist.

Measures

Depressive symptoms were measured at the pre-treatment assessment and at each clinical session using the 9-item self-report Patient Health Questionnaire (PHQ-9; Kroenke, Spitzer, & Williams, 2001). Studies have shown the PHQ-9 to be acceptable, reliable and valid (Kroenke et al, 2001; Gilbody et al, 2007; Wittkampf et al, 2009) with the ability to detect change over time (Lowe et al, 2004). Cronbach's alpha (α) is a statistic which indicates the internal consistency of a measure, representing how reliably it measures the construct of interest. Acceptable scores are 0.70-0.95 (Tavakol & Dennick, 2011). In our study α was 0.90.

The Structured Clinical Interview DSM IV (SCID; First, 1997) was used at pre-treatment to confirm whether participants met criteria for MDD, PTSD and Substance Abuse Disorder (both current and lifetime). This was repeated at end of treatment to assess which participants still met criteria for their original diagnoses.

The following measures were used at pre and post treatment assessments to measure change:

- *Beck Depression Inventory* (revised) (BDI-II; Beck, Steer, & Brown, 1996). Self-reported severity of depressive symptoms.

- *Hamilton Rating Scale Revised* (HAM-D; Hamilton, 1960). Clinician-administered self-report scale indicating frequency and intensity of depressive symptoms.

- *Multidimensional Scale of Perceived Social Support* (MSPSS; Zimet et al, 1988). Self-reported measure of perceived social support.

- *Generalised Anxiety Disorder* scale (GAD-7; Spitzer et al, 2006). Self-reported symptoms of generalised anxiety disorder.

- *PTSD Checklist* – Civilian version (PCL-C; Weathers et al, 1994). Self-reported experience of symptoms in response to traumatic life experiences.

- *Experiences in Close Relationships* (ECR; Brennan, Clark & Shaver, 1998). Self-reported experiences of adult attachment relationships on two subscales – anxious and avoidant.

Information on life events and offending history was gathered to characterise the sample. Life events were measured using a 25 item self-report questionnaire developed for the study which included the 21 items from the List of Threatening Experiences (Brugha et al., 1990); plus 4 additional items selected from the Life Events Questionnaire (Johnson and Zlotnick, 2012) created for use with female prisoners. Participants indicated which events had occurred over the past year, and highlighted which, if any, was still affecting them. Offending was measured using a self-report measure which recorded the type and frequency of offending over the past 6 months.

Treatment

Women were offered 12 weekly sessions of individual IPT delivered by a female IPT therapist. Treatment was delivered in accordance with the manual "A Comprehensive Guide to Interpersonal Psychotherapy," (Weissman et al, 2000). It was anticipated that participants might find it difficult to engage consistently with therapy and therefore 12, out of the usual range of 12 – 16 sessions, was offered. A proactive engagement model was adopted involving strategies such as text reminders for appointments, phone calls following missed appointments, and assistance with transport and childcare was provided where possible/required to encourage adherence to therapy.

The 12 sessions consisted of 4 initial, 6 middle and 2 ending sessions. In IPT, an individual and their therapist choose 1 out of 4 focal areas (interpersonal disputes, interpersonal transition, complicated grief or interpersonal sensitivities) to structure therapy. The initial sessions consist of an assessment of the interpersonal problem area and an agreement regarding which focal area fits best. During the middle sessions, the woman and therapist work together on the focus area using strategies specifically aimed to alleviate depressive symptoms. The final sessions focus on planning for the end of treatment, acknowledging the work that has taken place and considering how a woman can use her interpersonal network to continue working on her goals.

IPT was offered in addition to treatment as usual (TAU). For all participants this included regular sessions with a CJSW where they were supported to resolve practical crises. These sessions continued to be offered after completing the study. A

number of participants were taking antidepressant medication and had contact with wider health and social services.

To ensure fidelity to the IPT model the therapist received weekly supervision from an experienced IPT supervisor. All therapy sessions were recorded and a random selection were rated using the IPT UK competency scale.

Analytic plan

SPSS (version 23), and R (version 3.4.3) were used for the statistical analysis. Missing data on questionnaires were replaced with case-mean substitution if less than 20% of the items were missing; this has been found to be a robust way of handling item-level missing data (Fox-Wasylyshyn and El-Masri, 2005).

Wilcoxon Signed Rank tests were used to compare the means of repeated measures (here the pre- and post- intervention scores) where data did not follow a normal distribution. This non-parametric test was chosen because of the small sample size and repeated-measures nature of the design (Field, 2009).

Multilevel modelling (MLM) was used to explore change in depressive symptoms over time using the session by session PHQ-9 data. MLM analysis has increasingly been used in the analysis of small samples or case series data (Collins and Sayer, 2001; Singer and Willet, 2003; Twisk, 2010), with good effect (e.g. Moeyaert et al., 2014; Rindskopf and Ferron, 2014; Shadish et al., 2013). The method is considered appropriate for the assessment of change over time as it handles missing data and accounts for repeated measures data points collected from the same individuals at

different time points (Baek et al., 2011). Unlike many statistical techniques, MLM does not assume that observations are independent. Here, measures are taken from the same individuals across multiple time points, and therefore would be expected to correlate. The visual output slope was used to inspect trends (i.e. the average slope, direction of the dependent variables and individual variance across time).

Results

Characteristics of the sample

Figure 1 outlines data on sample recruitment. Twenty-four women agreed to IPT, although two did not start. Nineteen completed all 12 sessions (see Fig. 1). Sample characteristics are displayed in Table 1. Figures were too small for statistical comparisons between completers and non-completers, but data suggested a higher proportion of non-completers experienced disadvantages. Four out of five currently lived alone, were unemployed, and had no qualifications.

[Insert Fig. 1 here]

[Insert Table 1 here]

Overall, sixty-seven percent of women met criteria for more than one DSM diagnosis. Half of the sample met criteria for a diagnosis of PTSD (Table 2). Most women had experienced some form of sexual, physical or emotional abuse (79%) and an even higher proportion had high levels of attachment related difficulties (88% had an insecure attachment style) and lower than average levels of social support.

All women reported experiencing at least one significant life event in the past year which included death of a significant other, losing the care of a child, experiencing abuse and relationship break down. The mean number of events was 8.0 (SD 4.0).

[Insert Table 2 here]

Preliminary analysis

All preliminary analyses were performed on pre- and post-treatment data from 17 of the 19 therapy completers. Two women completed treatment but did not attend post-treatment assessment. Data did not follow a normal distribution so Wilcoxon Signed Rank analyses for nonparametric data were therefore used to assess change between pre- and post- intervention scores.

[Insert Table 3 here]

Treatment outcomes

Thirteen of the 17 treatment completers (77%) no longer met SCID-I criteria for major depressive disorder at post intervention assessment. As a group, they showed a significant decrease in depression severity on both the BDI-II ($Z= -3.43$; $p = 0.001$) and HAM-D ($Z = -3.62$; $p = 0.000$). Mean scores on both measures indicate a decrease from severe to mild levels of depression. The women also showed significant reductions in symptoms of anxiety ($Z = -2.93$; $p = 0.003$) and post-traumatic stress ($Z= -3.00$; $p = 0.003$).

Social support and life events

Analysis of MSPSS scores indicated participants reported a significant increase in their perceived levels of social support ($Z = -2.80$; $p = 0.005$) (see table 3). Completers also reported a mean of 4.5 further adverse life events which occurred during the therapy period.

Multilevel Modelling analysis

Multilevel modelling was performed on pre-treatment and session by session PHQ9 data. Available data were used from all (22) women who started IPT, regardless of whether they completed the course of therapy or not (see table 4).

[Insert Table 4 here]

In the unconditional model (**Model 1**) only variance in baseline PHQ-9 (depression) scores was tested. The intra-class correlation coefficient (ICC) was 0.68), indicating that there was adequate variance in depressive symptoms between participants (approximately 68%) to apply more complex models.

In **Model 2** scores over time were tested. This model showed a significant reduction between pre- and post-treatment PHQ-9 scores. Figure 2 shows the trajectories for each individual participant, demonstrating that each experienced some reduction in depression according to this measure. Subsequent models explored the potential influence of other variables.

Model 3 tested the effect of including insecure attachment as a baseline predictor in the model. This improved model fit and revealed a strong relationship between attachment-related anxiety and depression, suggesting that greater changes in

depressive symptoms over time were linked to lower anxious attachment scores at baseline. Adding social support to the model ***(Model 4)*** further improved model fit, suggesting that higher initial social support was predictive of greater symptom improvement.

[Insert Fig. 2 here]

The multi-level modelling therefore indicated that all of the change variables investigated here were predictive of changes in depression over time, during a period of interpersonal psychotherapy. Participants with higher trauma scores and higher anxious attachment at baseline improved less over the course of treatment. Participants with higher social support at baseline experienced greater improvement over the treatment duration.

Discussion

This is the first study to investigate the acceptability and effectiveness of individual IPT for depression in community based women following a first or second criminal charge. Our findings indicate that IPT was both acceptable and effective in this sample.

Treatment drop out was low, with only 3 of the 22 women who started, not completing the intervention. Prior to the study, less than half of participants had successfully engaged with, or maintained contact with mental health services. Given that most of these women continued to experience adverse life events during therapy (mean = 4.5 new events) their consistent engagement is encouraging. Retention and engagement suggest that IPT might be an acceptable and feasible intervention for this population.

This aligns with other research with women prisoners (Johnson & Zlotnick, 2008; 2012; 2015), however these studies delivered group rather than individual IPT. Krupnick et al (2018) also found group IPT reduced depressive symptoms in a non-justice involved sample of women with PTSD, who had similar demographics and trauma histories to those in our study. All of these studies demonstrated impressive therapy retention rates, with up to 89% of women completing treatment (Johnson & Zlotnick, 2008).

IPT may be particularly engaging for populations who have experience of complex and interpersonal trauma because it is an attachment-informed intervention which explicitly emphasises the building of trust between the patient and therapist (Anderson & Alexander, 1996; Cloitre et al., 2002; Scarvalone et al., 1995; Talbot et al., 2008). The remodelling of interpersonal interactions within the safety of the therapeutic environment can begin to improve an individual's interpersonal confidence and skills which in turn may increase her ability to engage with therapy and other forms of social support (Campanini et al., 2010, Markowitz et al., 2017).

Our findings suggest that IPT was an effective treatment for depression in this sample. At the end of treatment over three quarters of therapy completers no longer met criteria for major depressive disorder. Our statistical modelling must be interpreted with caution, but it suggests that the improvement in depression was associated with attachment and social support.

These findings are important because the sample included women with severe recurrent depression who had experienced multiple traumatic events. Many had

symptoms of PTSD, insecure attachment, poor social support and problematic substance/alcohol use. Given that depression is an established predictor of reoffending in women (Benda, 2005), it is possible to hypothesise that offering an acceptable and engaging treatment such as IPT may also help divert individuals away from the justice system.

Previous studies have found evidence for a number of factors which affect treatment outcomes. Individuals with increased life stress and greater experience of adverse events often suffer more persistent or relapsing depressive symptoms (Brown et al, 1987; Emmerson et al., 1989; Goodyer et al., 1987; Paykel, 2003). Those with higher levels of attachment anxiety experience poorer outcomes (Tasca et al., 2007; Illing et al., 2010; Keating et al., 2014) and those reporting higher levels of social support (Trivedi et al, 2005); and greater availability of social relationships (Hallgren et al, 2017) respond better to treatment. In this study individuals with fewer recent life events benefitted the most from treatment, as did those with higher levels of perceived social support and lower attachment anxiety. Completion appeared to be more likely where women were not living alone or unemployed. Extra targeted social support in conjunction with treatment could potentially enhance outcomes.

The predictive factors identified here suggest the importance of assessing and working with the current interpersonal context of an individual with depression. Theoretically, IPT views relational change as a mechanism for recovery and as such, therapy is designed to incite interpersonal changes. However, further empirical evidence, generated by controlled trials is required to negate the possibility of non-

therapeutic treatment effects and to fully understand the utility of IPT to this population.

Limitations

Our study has clear limitations including the small sample size and the lack of control group. There was neither control nor measurement of interventions amounting to 'treatment as usual' and no process evaluation. No longer-term follow up assessment was undertaken. This was, however, designed as a preliminary study in part to determine whether an intervention could be successfully delivered to a complex and often difficult to engage population. No other studies have tested individual IPT in this population at all. As our findings suggest that the treatment is deliverable, probably effective and widely acceptable, a controlled trial is now indicated. Since improvements also occurred in other areas in addition to depression, future studies may wish to expand their areas of investigation to include other potentially relevant variables, or to a wider group of justice involved community-based women.

Conclusion

This pilot is the first to investigate the effectiveness of individual IPT for depression among community-living female offenders - an often neglected and under-studied group of women. As the treatment proved to be deliverable and acceptable to most of the women found eligible for it and more than four in five of the women completed with benefit and apparently without adverse effects, a full clinical trial is warranted.

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Table 1: Characteristics of 24 women obtained at pre-intervention assessment.

Characteristic	Whole sample (24)	% Sample	Completers (19)	Non completers (5)
Age	Mean 36.3	Range 21.4 – 51.2 years	33.7 (range 21.4 – 45.6)	38.04 (range 25.3 -51.6)
Ethnicity				
White British	21	87.4	16	5
Black British	1	4.2	1	0
Black African	1	4.2	1	0
White European	1	4.2	1	0
Significant others				
One child or more	16	66.6	12	4
Child or children under 16	7	29.2	6	1
Had child removed from their care	4	25 (of those with children)	3	1
Living alone	10	41.7	6	4
Living with partner (no children)	4	16.6	4	0
Living with partner and child	2	8.3	2	0
Living with adult children (no partner)	3	12.6	2	1
Living with children under 16 (no partner)	5	20.8	5	0
Highest education level				
Left school with no qualifications	14	58.4	10	4
Standard/O level	4	16.6	3	1
Higher/A level	5	20.8	5	0
Undergraduate degree	1	4.2	1	0

Current employment				
Unemployed	13	54.2	9	4
Paid employment	7	29.2	6	1
Sex worker	2	8.3	1	1
Unpaid voluntary work	2	8.3	2	0
Mental health history				
Previous depressive episode	24	100	19	5
Current anti-depressant prescription	14	58.3	9	5
Referral to mental health service in last 10 years	15	62.5	13	2
Sustained contact mental health service in last 10 years†	10	41.7	7	3
Index Offence				
Assault	8	33.3	7	1
Fraud	5	20.8	4	1
Threatening/abusive behaviour	3	12.5	3	0
Breach of the peace	3	12.5	2	1
Driving offence	2	8.3	1	1
Theft	2	8.3	1	1
Prostitution	1	4.2	1	0

†Defined as attended three or more appointments

Table 2: Number of participants (n=24) meeting criteria for SCID-I Diagnoses at Pre-therapy Assessment

SCID–I Diagnosis	Number	Percentage of the Sample
Major Depressive Disorder	23	95.8
Dysthymic Disorder	1	4.2
Post-Traumatic Stress Disorder	11	50†
Lifetime Alcohol Abuse	15	62.5
Lifetime Substance Abuse	12	50

†2 women did not complete PTSD interview because of distress associated with discussions about previous trauma events

Table 3: Results of Wilcoxon Signed Rank Analysis for 17 treatment completers

Measure	Pre mean	Pre SD	Post mean	Post SD	Effect size	P Value
BDI II	38.1	8.9	19.2	14.8	-0.83	0.001
HAM-D	26.4	5.8	12.3	6.4	-0.88	0.000
GAD-7	14.7	5.3	7.9	6.8	-0.73	0.003
PCL-C	56.9	11.1	38.4	17.7	-0.75	0.003
MSPSS	46	12.2	60.5	16.8	-0.67	0.005

BDI-II – Beck depression Inventory; HAM-D – Hamilton Depression Rating Scale; GAD-7 – Generalised Anxiety Disorder 7; PCL-C – PTSD Checklist-Civilian; MSPSS - Multidimensional Scale of Perceived Social Support

Table 4: Summary parameters with Depression (PHQ-9) as dependent variable

	Model 1	Model 2	Model 3	Model 4
Intercept	27.81(1.20)***	18.68(1.29)***	9.37(3.39)**	13.82(3.25)***
Time		-1.58(.60)***	-1.27(0.04) ***	-1.21(0.06)***
Attachment related anxiety			4.79(0.47)***	3.51(0.47)***
Attachment related avoidance			-1.55(0.60)	-1.91(0.59)
Recent adverse life events				1.33 (0.17)***
Social support				
Personality Difficulties				
-2LL (Explained variance)	857.90	812.15	841.63	815.26

Parentheses values = standard errors; ***p<.001, **p<.01, *p<.05

Figures

Fig. 1 Recruitment flowchart

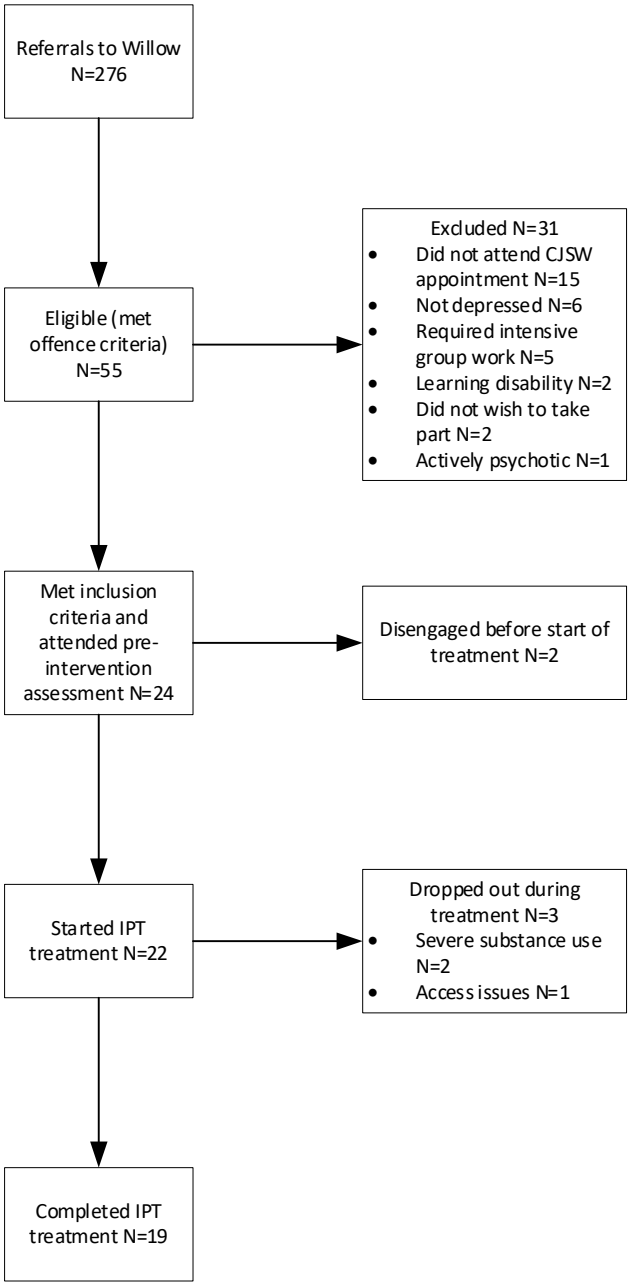

Fig 2: Improvements in depression as measured by PHQ-9 over time. Data points represent PHQ-9 total score at baseline and each clinical appointment. (Note: the shaded boxes indicate participant ID number)