OXFORD DOCTORAL COURSE IN CLINICAL PSYCHOLOGY


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A thesis submitted in partial fulfilment of the requirements of the degree of Doctor of Clinical Psychology (DClinPsych), comprising:

**Critical Review of the Literature***:* How effective are family therapies for the treatment of substance abuse in young people? A systematic review and meta-analysis.

**Service Improvement Project:** Understanding dropout from CBT for first episode psychosis.

**Main Research Project***:* Modifying appraisals of control in relatives of people with a first episode of psychosis: Development and piloting of a digital intervention.

# Word counts by component

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| Connecting Narrative | 987 |
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# Abstracts


## Critical review of the literature

Family therapies have been proposed as efficacious at reducing substance abuse in young people. There are no NICE guidelines for psychological interventions in this population. Previous reviews have generally focused on substance abuse as the only outcome for this research rather than looking at other outcomes. This review consists of meta-analyses and a systematic review of the literature for family therapies for substance abuse in young people. Outcome measures used include, in addition to use of substances, internalising behaviours, externalising behaviours and measures of family functioning. The quality of the literature is assessed and a narrative overview of the state of the literature provided. The review concludes that there is evidence that family therapies outperform other treatments at reducing use of substance, but do not appear to perform significantly better at improving internalising behaviours, externalising behaviours or family functioning. Recommendations for future research and policy are made.

## Service Improvement Project

Psychosis is a mental health problem that has a lifetime prevalence of 0.7%. Cognitive behavioural therapy for psychosis (CBTp) is one of the NICE recommended psychological therapies for first episode psychosis. It should be offered to clients as part of the NHS Access and Waiting Time standards. NICE guidelines recommend at least 16 sessions of CBTp for maximum benefit. This study aimed to understand the reasons for dropout from CBTp in two early intervention for psychosis services and to make service recommendations for reducing dropout.

Two studies were conducted. The first investigated whether demographic and clinical variables from routinely collected service data predicted dropout from CBTp. The second used thematic analysis of semi-structured interviews with therapists and clients to obtain their views of why dropout occurs. The quantitive analysis indicated that gender significantly predicted dropout, with males being twice as likely as females to drop out of therapy. No other variable was predictive. A number of themes of why people dropout from treatment were extracted by the thematic analysis, broadly grouped under therapy and personal factors.

In conclusion, dropout appears to be influenced by different factors, including client gender, timing of therapy, and understanding of therapy. Recommendations include increasing flexibility of treatment delivery, increasing client's understanding of CBTp prior to the beginning of treatment, and improving how routine feedback is sought from those who have dropped out of CBTp.

## Main research project

Appraisals of psychosis in carers of people with first episode psychosis have been linked to a number of health outcomes. Appraisals of control, how much a carer can affect the mental health of the person with psychosis, have been associated with positive outcomes, however no study thus far has attempted to demonstrate this link causally.

This study aimed to develop and test an online module to modify appraisals of control in carers of people experiencing a first episode of psychosis. This pilot study focused on the development and initial testing of the module, ahead of potential future studies to investigate causal links between changing appraisals and positive psychological outcomes.

An online module was developed alongside carer representatives. This was piloted on 3 participants and then tested on a sample of 10 participants using a consecutive, phasic case series design, taking daily measures of illness perceptions.

The results showed that the module was broadly acceptable to participants, but that it is likely to be more useful to individuals earlier in their experience of caring for someone with psychosis. The module did not lead to a significant shift in any measure of illness perceptions. Further testing is needed on this module in order to understand how it impacts illness appraisals. Testing in a larger sample, closer to the onset of psychosis is likely to be a useful next step.

# Critical Review of the Literature

## How effective are family therapies for the treatment of substance abuse in young people? A systematic review and meta-analysis.

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**Internal supervisor:** Dr Rebecca Knowles Bevis

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**Target journal**: This paper is targeted towards the Journal of Family Therapy as this journal focuses on publishing articles on theory, research, practice and training related to systemic theory and family therapies, including systematic reviews and meta-analyses such as this paper describes.

# Embedded abstract

Family therapies have been proposed to be efficacious at reducing substance abuse in young people. There are no NICE guidelines for psychological interventions in this population. Previous reviews have generally focused on use of substance as the only outcome for this research rather than looking at other outcomes. This review consists of meta-analyses and a systematic review of the literature for family therapies for substance abuse in young people. Outcome measures used include, in addition to use of substances, internalising behaviours, externalising behaviours and measures of family functioning. The quality of the literature is assessed and a narrative overview of the state of the literature provided. The review concludes that there is evidence that family therapies outperform other treatments at reducing use of substances, but do not appear to perform significantly better at improving internalising behaviours, externalising behaviours or family functioning. Recommendations for future research and policy are made.

Suggested running head: Family therapy for adolescent substance abuse: A meta-analysis

Practitioner Points:

- Five types of family therapy make up the majority of research trials on family therapy for adolescent substance abuse.
- This meta-analysis shows family therapy is more effective than alternative treatments at reducing adolescent use of substances, both in the short-term and at longer-term follow ups.

- It is less clear whether family therapies are more efficacious for other outcome measures such as internalising behaviours, externalising behaviours and family functioning.
- Future research should focus on expanding the use of alternative measurements of treatment success beyond drug use, and increasing research in a wider range of geographical and cultural contexts.

# Introduction

Substance abuse can be defined as the use of any substance which alters mood or cognition, including alcohol, tobacco, drugs or medication, in a way which has a significant impact on multiple aspects of life and is chronic and repetitive. Substance abuse in young people remains a significant problem in the UK. Although numbers in substance abuse treatment programmes have declined by 35% since 2008/9 (Public Health England, 2018), there is some evidence that the use of drugs in young people is increasing, with 15% of school-age children reporting drug use in the past year in 2016, up from 10% in 2014 (NHS Digital, 2017).

Adolescence is a time of significant change in a young person's life and is a time when a substantial proportion of mental health and significant social problems first develop (Kessler et al., 2005). Family environments have been shown to be predictive of the development of substance abuse problems in young people (Epstein et al., 2013), particularly if the young person experiences traumatic life events within this environment such as sexual or physical abuse or neglect (Bellis et al., 2014). As such, interventions focused on modifying the systemic aspects of a young person's environment can be expected to be effective at reducing the incidence of drug use in young people.

Family therapies are underpinned by systemic theories, which propose that human behaviour and emotions cannot be understood by looking at an individual alone but must be understood by in context of the wider system (Adams et al., 2013). Systemic psychotherapy is a nondirective, multifaceted treatment approach that focuses on the roles, emotions and behaviour of different members of a system and how this affects the group and relationships within the group. Earlier approaches such as structural (Minuchin, 1974) and strategic (Haley, 1987) therapies positioned the therapist as an expert, providing direction and modifying unhelpful relational patterns which might be keeping the problem 'stuck'. Later approaches such as social constructionist approaches take a more 'not knowing' rather than directive therapeutic stance and

have a greater focus on reflection as the mechanism for change (Anderson & Goolishian, 1992). All systemic approaches move focus away from an individual problem to a relational perspective. Systemic approaches have been shown in research trials to be effective for a number of difficulties including anxiety, depression and eating disorders (Stratton, 2010).

Family therapies for substance abuse conceptualise the substance abuse as a problem which affects all members of the system, and propose that emotional distress, of which problematic substance abuse may be one manifestation, is often maintained or exacerbated by the important relationships in one's life. By working with the problems in this context, systemic family therapies intervene with relational patterns in order to bring about beneficial change for the whole family. There are differing opinions as to how to define family, whether emotionally, biologically or socially. For adolescents, a primary definition of family is likely to revolve around living arrangements. By acknowledging the presence and contribution (both through physical proximity and emotional support) of family members and relational dynamics to problematic use of substance in young people, it may be expected that interventions focused on the family will be helpful in reducing substance abuse.

The National Institute for Health and Care Excellence (NICE) guidelines for alcohol use disorder in young people include brief strategic family therapy, functional family therapy, and multidimensional family therapy (NICE, 2011). However, as of yet there are no specific guidelines governing psychosocial interventions for young people with drug abuse problems. Recommendations for adults with drug abuse also include a systemic intervention (behavioural couples therapy) (NICE, 2007). Taken together, these two published NICE guidelines suggest that family interventions for drug abuse in young people may well be an effective form of intervention, particularly given the social and familial factors influencing drug abuse.

Baldwin et al., (2012) performed a meta-analysis to investigate the effectiveness of family therapies for substance abuse problems and delinquency in adolescents. They

identified four family therapies to include in their analysis. These were multidimensional family therapy (MDFT; Liddle, 2002), functional family therapy (FFT; Alexander & Parsons, 1982), brief strategic family therapy (BFST; (Szapocznik et al., 2012) and multisystemic treatment (MST; Henggeler et al., 1998). They found statistically significant, moderate effects for these systemic therapies compared to treatment as usual and alternative therapies. However, this paper combined the effects of trials focusing on use of substances and on delinquent behaviour into the same analyses. As such, it is not clear to what extent their finding is true for either use of substances or delinquency alone. Therefore, the present meta-analysis will include an analysis on use of substances only, along with separate analyses on additional psychological outcomes. In addition, there has been increased awareness and focus on intervention development for substance abuse since the publication of Baldwin et al.'s paper and therefore there is likely to be additional research to be included in a review.

Van der Pol et al., (2017) performed a meta-analysis on the use of multi-dimensional family therapy (MDFT) for adolescents with substance abuse or behaviour problems. This showed a small but significant effect size for MDFT on a combined measure of substance use, internalising behaviours, externalising behaviours and family functioning. Filges et al., (2015) also performed a meta-analysis investigating the efficacy of MDFT on non-opioid use of substances in young people. This showed that MDFT reduced use of substances more effectively than alternative treatments in the short-term but not in the long-term. Both of these studies, whilst helpful, have a focus on a very particular form of family therapy. Including a wider range of family therapies and separate analyses on outcomes can allow for a clearer understanding of the efficacy of family therapies for substance abuse problems.

Due to the absence of focused, up-to-date systematic reviews, there is a gap in the literature that would help us to determine whether family therapies are in fact an effective treatment for substance abuse in young people, and whether they are more effective than other intervention approaches such as CBT, psychoeducation or peer

support. A meta-analysis on the efficacy of family therapies for adolescent substance abuse will enhance our understanding of the effective treatments in this area and support the development of evidence-based clinical guidelines and treatment provision. When selecting outcome measures by which to measure the success of a given treatment, use of substances is a common and relatively objective measure. However, given that family therapy has a non-symptom-based, relationship-focused foundation, it is also important to measure other aspects of functioning, both for the young person and the family. As such, in addition to use of substances, this meta-analysis will consider the impact of family therapy on internalising and externalising behaviour more broadly as well as on family functioning as these are common measures reported by studies in addition to use of substances which give an understanding of the impact of the therapy on the individual and the family system.

## Objectives

- To evaluate the quality of the literature in this area
- To investigate the effectiveness of family therapies at reducing use of substances in young people compared to treatment as usual or alternative individual or group treatments.
- To establish whether family therapies have a significantly greater impact than other treatments on additional factors of internalising behaviours, externalising behaviours and family functioning.

## Inclusion Criteria

**Participants**

Participants were required to be aged 10-24 in order to match the World Health Organisation definition of a young person. All genders, ethnicities and nationalities

were included. The young person was required to have been identified as having a problem with substances. This could either be defined by objective measures (e.g. meeting DSM IV criteria for a diagnosis of substance abuse disorder) or by more subjective identification of having a problem with drugs assessed by the research team as meeting sufficient levels for inclusion. At least one parent or parental figure needed to be able to participate in treatment. As the focus of the study is on abuse of illicit substances, trials were not included if the target population had primary problems with other addictive targets such as alcohol, tobacco, gambling or sex.

**Interventions**

In order to be included, the family therapy under evaluation had to meet the criteria for well-established and probably efficacious interventions created by Chambless & Hollon, (1998). From the literature search, five family therapies were identified as meeting these criteria and therefore were included in this review. These were multisystemic treatment (MST, Henggeler et al., 1998), multidimensional family therapy (MDFT, Liddle, 2002), functional family therapy (FFT, Alexander & Parsons, 1982), brief strategic family Therapy (BSFT, Szapocznik et al., 2012) and ecologically based family therapy (EBFT, Slesnick & Prestopnik, 2005). A full description of these therapies is included in Appendix A.

The five family therapies included in this review, whilst with their own unique approaches, have considerable similarities. All draw from the structural and strategic schools of systemic psychotherapy. All focus on behaviour patterns within the family relationships and intervene by changing these patterns. All are carried out in a relatively time-limited way, with weekly sessions conducted either in the office, home or other location. There are differences between the treatments, such as MST offering increased availability of the therapist and FFT incorporating cognitive behavioural principles. However, overall it was judged that these therapies have enough similarity in theory and delivery to warrant them being considered collectively as 'family therapy for substance abuse' in this review.

**Comparators**

Included comparators were any psychological therapy or pharmaceutical intervention, treatment as usual (TAU) or no intervention.

**Outcomes**

The primary outcome for this review was frequency of use of substances. This is the conventional primary outcome measure in this field and reflects a reduction in the problem behaviour which is the specific focus of the included interventions. Frequency was chosen rather than amount of substances used, which is difficult to quantify accurately, particularly retrospectively. To be included in the review, studies were required to report a measure of frequency of substance use at the beginning and end of the intervention period. This measure could be self-reported by the adolescent, reported by a family member or objectively measured, for example, by urinalysis. In cases where multiple sources of data were provided, adolescent self-report was prioritised as this was the most commonly used and allowed for greater homogeneity of results for comparison.

Although use of substances is clearly an important outcome, it was felt that additional outcomes were required to investigate fully whether the interventions were effective. Therefore, data were also extracted for internalising behaviour, externalising behaviour and measures of family functioning. Externalizing behaviour incorporates a variety of disinhibited or externally-focused behavioural symptoms including aggression, conduct problems, delinquent behaviour, oppositionality, hyperactivity, and attention problems, whereas the internalizing spectrum includes internally-focused symptoms including anxiety, fear, depression, social withdrawal, and somatic complaints (Willner et al., 2016).

Internalising behaviours are defined here as negative behaviours directed inwards towards the self. This includes anxiety, low mood or social withdrawal. Externalising behaviours are problem behaviours directed outwards towards the external environment. This includes anger, violence and crime. Measures of family functioning were included if the report identified them as measuring the functioning or capability of the family structure and how it might change following therapy. All measures used were required to have demonstrated good psychometric qualities. As with use of substances, when measures were obtained from both the adolescent and from parents, the adolescent self-report was prioritised.

**Additional criteria**

Studies were also required to be randomised controlled trials as these represent the 'gold standard' evidence for intervention effectiveness (Cochrane Collaboration, 2013). Studies had to be focused on active treatment rather than on prevention, as any NICE guidelines produced in this area would be focused on treating rather than preventing substance abuse. Studies were also required to be accessible in English so that the contents could be understood by the research team. Where possible, study authors were contacted to access translations of papers published in foreign languages.

## Search Strategy

A systematic search was conducted on the PsyInfo, Medline and CINAHL databases on 4th February 2021. Search terms included a combination of key words and MESH terms associated with the terms 'young person', 'family therapy', 'trial' and 'substance abuse.' The full search strategy is included in Appendix B. The reference lists of

included papers and review articles were also hand-searched for additional studies. Prior to conducting the search, this review was registered with PROSPERO (ID. CRD42020155449).

# Results

## Search results

The search identified a total of 1,134 studies and hand searches identified an additional 10 studies. After removing duplicates, 945 articles were screened using their title and abstract by one rater (EG) and a second independent rater (RKB) additionally screened 10% of the total number of papers. Cohen's Kappa (Cohen, 1960) was calculated on the proportion of agreement regarding the inclusion or exclusion of each study and evaluated using the guideline provided by Landis & Koch, (1977). There was substantial agreement between the two raters ($k$= .704, $p$< .001). Following this step, 212 articles remained for full-text screening. These articles were checked by two independent reviewers (EG & HJ) for eligibility. Any disagreements were presented to a third reviewer (RKB) to resolve the dispute. The Cohen's Kappa for this comparison was .572 ($p$< .001) indicating moderate agreement. Following this process, 20 articles were identified as being eligible for inclusion in this review. Figure 1 presents a PRISMA flow diagram (Moher et al., 2009) of this search process.

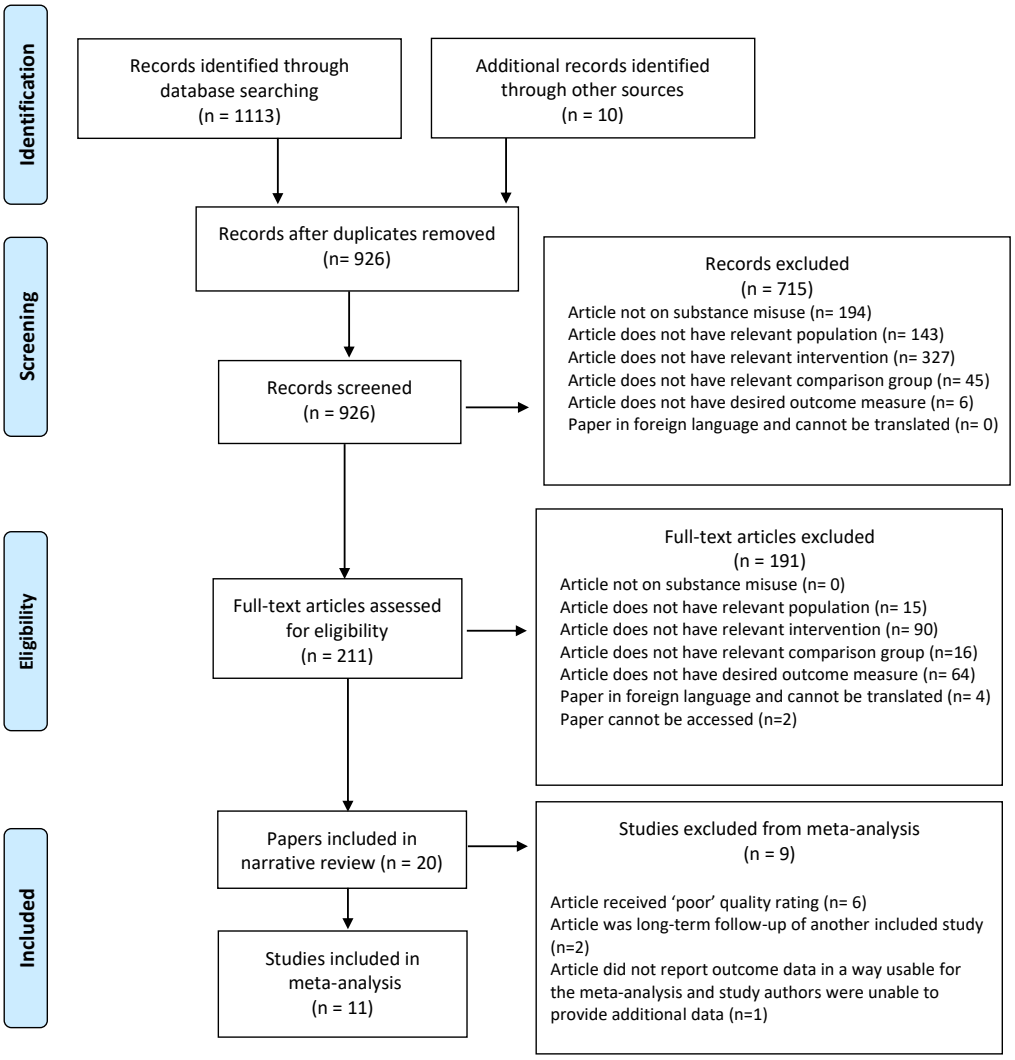



*Figure 1. A Flow Diagram of the Search Process.*

## Data extraction

Data was extracted using a form adapted from the Cochrane Collaboration Data Extraction template (Cochrane Collaboration, 2014 - see Appendix C).

## Quality Assessment

The overall quality rating is an indication of the degree to which there is a risk of bias in the study design and reporting. The National Institute for Heath (NIH) Quality Assessment Tool for Controlled Intervention Studies (2014) was used to assess this (See Appendix D). The tool contains 14 items. As the interventions in this review were talking therapies, item 4 'were study participants and providers blind to treatment group' could not be achieved and was therefore removed. The remaining items were: study design, method of randomisation, blinding of allocation, blinding of assessors, group similarity at baseline, overall drop-out rate, differential drop-out rate, adherence to intervention protocols, additional interventions, quality of outcome measures, power, prespecified analyses and the use of intention to treat analyses.

The assessment tool suggested that studies should have 20% drop out or less to receive a satisfactory rating on this item. However, this is likely to be an unrealistically low rate of attrition for this particular population. A previous meta-analysis (Brorson et al., 2013) indicated that approximately 47% of participants drop out of substance abuse treatment. Although Brorson et al. (2013) focused on an adult population, in the absence of additional evidence specific to adolescence, it was assumed that dropout rates were likely to be similar in adolescent treatment trials and thus a 50% dropout rate was used as the cut-off.

Once rated, studies were given a total score on the quality assessment tool. The overall categorisation was subjective, but rough guidelines were used. Generally, studies were categorised as 'good' if they had a score of 75% or more, 'fair' if they scored between 50-75% and poor if they scored below 50%. In addition, if any study had a 'fatal flaw' it was automatically given a poor rating. The fatal flaws were (i) if the differential

dropout rate between treatment arms was higher than 15%, or (ii) if an intent-to-treat or equivalent statistical design was not used. Any studies that were rated 'poor' for quality were excluded from the meta-analyses but were included in the narrative review.

21 papers were identified from the literature search, representing 18 separate studies/populations. Each of these studies was assessed using the adapted NIH quality rating tool. Two reviewers (EG & SG) independently rated each of the included studies using this quality appraisal tool. Inter-rater reliability for this agreement was moderate ($k$= .45, $p$< .001). Where the two raters disagreed on the quality rating, a third rater (RKB) reviewed and arbitrated the decision.

Overall, nine studies were given 'good' ratings for quality or risk of bias, three were given 'fair' ratings, and six were given 'poor' ratings and therefore were not included in the meta-analysis. Table 1 shows an overview of quality ratings and the full tool is included in Appendix D. Data were extracted from the papers using a data extraction tool included in Appendix E. A further descriptive overview regarding studies' ratings on the quality assessment tool is included in Appendix F.

| | Criterion number | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | **1** | **2** | **3** | **4** | **5** | **6** | **7** | **8** | **9** | **10** | **11** | **12** | **13** | **Overall rating** |
| Szapocznik 1983 | Y | Y | NR | NA | N | Y | NR | NR | Y | Y | NR | Y | N | Poor |
| Szapocznik 1986 | Y | Y | NR | NR | N | NR | NR | NR | NR | Y | NR | Y | N | Poor |
| Friedman 1989 | Y | Y | NR | NR | N | Y | NR | Y | Y | Y | NR | Y | N | Poor |
| Henggeler 1999 | Y | Y | NR | NR | N | Y | Y | N | Y | Y | Y | Y | NR | Fair |
| Liddle 2001 | Y | Y | Y | Y | N | Y | N | NR | NR | Y | NR | Y | N | Poor |
| Waldron 2001 | Y | Y | Y | NR | Y | Y | Y | Y | NR | Y | NR | Y | Y | Good |
| Liddle 2004 | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | NR | Y | Y | Good |
| Dennis, 2004 | Y | Y | Y | Y | NR | Y | Y | NR | Y | Y | NR | Y | Y | Good |
| Slesnick 2005 | Y | Y | Y | NR | NR | Y | Y | NR | N | Y | NR | Y | Y | Fair |
| Henggeler 2006 | Y | Y | Y | NR | N | Y | Y | Y | Y | Y | NR | Y | Y | Good |
| Liddle 2008 | Y | Y | Y | NR | Y | Y | Y | Y | Y | Y | NR | Y | Y | Good |
| Henderson 2010 | Y | Y | Y | NR | NR | Y | N | NR | Y | Y | NR | Y | Y | Poor |
| Robbins 2011 | Y | Y | Y | Y | Y | Y | Y | Y | N | Y | Y | Y | Y | Good |
| Valdez 2013 | Y | Y | Y | NA | N | Y | Y | NR | N | Y | NR | Y | N | Poor |
| Slesnick 2013 | Y | Y | Y | NR | Y | Y | Y | Y | Y | Y | N | Y | Y | Fair |
| Rigter 2013 | Y | Y | Y | Y | Y | Y | Y | Y | NR | Y | NR | Y | Y | Good |
| Dakof 2015 | Y | Y | Y | Y | Y | Y | Y | Y | NR | Y | Y | Y | Y | Good |
| Liddle 2018 | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | Good |

*Table 1. Quality assessment ratings for included studies. Y= yes, N= no, NR= not reported, NA= not applicable.*

Overall, the quality of studies in the area of family therapies for substance abuse are mixed. Earlier studies tended to have poorer quality ratings, which may be the result of increasing methodological rigour and research interest over time. Aspects of research design and integrity such as reporting on power and using intent-to-treat analyses are expectations which have only become firmly embedded in more recent years and so are not always reported in earlier studies. It is recommended that any future studies in this area attend to these factors. Additionally, many studies did not take appropriate and available steps to ensure high fidelity to the intervention or that background treatments were equivalent across conditions. These studies can often be commended for their efforts to increase ecological validity by using therapists working in the community rather than highly trained research trial therapists, and by delivering treatment in real-world settings rather than in tightly controlled research laboratory environments. However, the potential to draw clear and robust conclusions from these studies is compromised if these elements are not controlled or at least systematically measured and reported.

## Study characteristics

Table 2 shows a summary of the 20 included papers representing 18 distinct studies. These papers reported on a total 3549 participants. Of these, 6 studies had poor quality ratings, and 1 study did not report extractable outcome data, thus 11 studies were included in the meta-analysis. These represented a total of 2717 participants. Table 3 shows further characteristics of each study, and a narrative report of these characteristics follows.

| Report ID | Study ID | Title | Therapy | Comparator | Sample | Population | Included in Meta-analysis? |
|---|---|---|---|---|---|---|---|
| Szapocznik 1983 | Szapocznik 1983 | Conjoint versus one-person family therapy: Some evidence for the effectiveness of conducting family therapy through one person | BSFT | One person family therapy | 37 | Families with a drug using family member aged 12-20 | No (Poor quality) |
| Szapocznik 1986 | Szapocznik 1986 | Conjoint versus one-person family therapy: Further evidence for the effectiveness of conducting family therapy through one person with drug-abusing adolescents | BSFT | One person family therapy | 35 | Families with a drug using family member aged 12-20 | No (Poor quality) |
| Friedman 1989 | Friedman 1989 | Family therapy vs. parent groups: Effects on adolescent drug abusers | FFT | Parent group | 135 | Youth referred for community drug abuse treatment | No (Poor quality) |
| Henggeler 1999 | Henggeler 1999 | Multisystemic treatment of substance-abusing and dependent delinquents: outcomes, treatment fidelity, and transportability. | MST | TAU | 118 | Juvenile offenders | Yes |
| Waldron 2001 | Waldron 2001 | Treatment outcomes for adolescent substance abuse at 4- and 7-month assessments | FFT | CBT v CBT+FT v group intervention | 114 | Youth referred for community drug abuse treatment | Yes |

| Report ID | Study ID | Title | Therapy | Comparator | Sample | Population | Included in Meta-analysis? |
|---|---|---|---|---|---|---|---|
| Liddle 2001 | Liddle 2001 | Multidimensional family therapy for adolescent drug abuse: results of a randomized clinical trial. | MDFT | Adolescent group therapy / multifamily educational intervention | 182 | Youth referred for community drug abuse treatment | No (Poor quality) |
| Henggeler 2002 | Henggeler 1999 | Four-year follow-up of multisystemic therapy with substance-abusing and substance-dependent juvenile offenders | MST | TAU | 80 (of 118) | Juvenile offenders | No (Follow-up) |
| Liddle 2004 | Liddle 2004 | Early Intervention for Adolescent Substance Abuse: Pretreatment to Posttreatment Outcomes of a Randomized Clinical Trial Comparing Multidimensional Family Therapy and Peer Group Treatment | MDFT | Peer group treatment | 83 | Youth referred for community drug abuse treatment | Yes |

| Report ID | Study ID | Title | Therapy | Comparator | Sample | Population | Included in Meta-analysis? |
|---|---|---|---|---|---|---|---|
| Dennis 2004 | Dennis 2004 | The Cannabis Youth Treatment (CYT) Study: Main findings from two randomized trials | MDFT | Motivational enhancement therapy plus CBT vs. community reinforcement approach | 600 | Youth referred for community drug abuse treatment | Yes |
| Slesnick 2005 | Slesnick 2005 | Ecologically based family therapy outcome with substance abusing runaway adolescents. | EBFT | TAU | 124 | Youth living at 'runaway shelter' | No (no extractable data) |
| Henggeler 2006 | Henggeler 2006 | Juvenile drug court: Enhancing outcomes by integrating evidence-based treatments | MST | Family court, drug court, drug court plus MST, and drug court plus MST plus CM | 161 | Juvenile offenders | Yes |

| Report ID | Study ID | Title | Therapy | Comparator | Sample | Population | Included in Meta-analysis? |
|---|---|---|---|---|---|---|---|
| Liddle 2008 | Liddle 2008 | Treating adolescent drug abuse: A randomized trial comparing multidimensional family therapy and cognitive behavior therapy | MDFT | CBT | 224 | Youth referred for community drug abuse treatment | Yes |
| Liddle 2009 | Liddle 2004 | Multidimensional family therapy for young adolescent substance abuse: Twelve-month outcomes of a randomized controlled trial | MDFT | Peer group treatment | 83 | Youth referred for community drug abuse treatment | Yes |
| Henderson 2010 | Henderson 2010 | Effectiveness of Multidimensional Family Therapy With Higher Severity Substance-Abusing Adolescents: Report From Two Randomized Controlled Trials (study 2) | MDFT | Enhanced TAU | 154 | Juvenile offenders. | No (Poor quality) |
| Robbins 2011 | Robbins 2011 | Brief strategic family therapy versus treatment as usual: Results of a multisite randomized trial for substance using adolescents | BSFT | TAU | 480 | Youth referred for community drug abuse treatment | Yes |

| Report ID | Study ID | Title | Therapy | Comparator | Sample | Population | Included in Meta-analysis? |
|---|---|---|---|---|---|---|---|
| Horigan 2015 | Robbins 2011 | A cross-sectional assessment of the long term effects of brief strategic family therapy for adolescent substance use. | BSFT | TAU | 261 (out of 480) | Youth referred for community drug abuse treatment | No (Follow-up) |
| Valdez 2013 | Valdez 2013 | An Adapted Brief Strategic Family Therapy for Gang-Affiliated Mexican American Adolescents. | BSFT | No intervention | 200 | Gang affiliated youth identified through worker's outreach | No (Poor quality) |
| Slesnick 2013 | Slesnick 2013 | Intervention with substance-abusing runaway adolescents and their families: results of a randomized clinical trial. | EBFT | Community reinforcement approach, motivational interviewing | 179 | Youth living at a runaway shelter | Yes |
| Rigter 2013 | Rigter 2013 | Multidimensional family therapy lowers the rate of cannabis dependence in adolescents: A randomised controlled trial in Western European outpatient settings | MDFT | Individual psychotherapy (varied depending on site- mostly CBT) | 450 | Youth referred to secondary level addiction, youth and forensic care centres | Yes |

| Report ID | Study ID | Title | Therapy | Comparator | Sample | Population | Included in Meta-analysis? |
|---|---|---|---|---|---|---|---|
| Dakof 2015 | Dakof 2015 | A randomized clinical trial of family therapy in juvenile drug court. | MDFT | AGT (adolescent group therapy) | 112 | Youth referred to juvenile drug court | Yes |
| Liddle 2018 | Liddle 2018 | Multidimensional Family Therapy as a community-based alternative to residential treatment for adolescents with substance use and co-occurring mental health disorders | MDFT | Residential treatment | 113 | Youth identified as needing substance abuse treatment | Yes |

*Table 2. Studies included in the review of literature and meta-analysis. Please note that Liddle 2004 and Liddle 2009 are reporting on the same study. Liddle 2004 includes the methodology and baseline data, Liddle 2009 includes the end of treatment and follow-up data. The study is referred to as Liddle 2004 henceforth*

| | | | | Ethnicity | | | | Age | | |
|---|---|---|---|---|---|---|---|---|---|---|
| **Report ID** | **Study ID** | **State/ Country of study** | **% male** | **Hispanic** | **White** | **Black** | **Other** | **Mean** | **Range** | **Included in Meta-analysis?** |
| Szapocznik 1983 | Szapocznik 1983 | Florida, USA | 78.3% | 100% | 0% | 0% | 0% | 17 | 12y-20y | No |
| Szapocznik 1986 | Szapocznik 1986 | Florida, USA | Not stated | 100% | 0% | 0% | 0% | 17 | 12y-20y | No |
| Friedman 1989 | Friedman 1989 | Unclear, USA | 60% | NR | 89% | NR | 11% | 17.9 | 14y-21y | No |
| Henggeler 1999 | Henggeler 1999 | South Carolina, USA | 79% | 1% | 47% | 50% | 2% | 15.7 | 12y-17y | Yes |
| Liddle 2001 | Liddle 2001 | Unclear, USA | 80% | 15% | 51% | 18% | 16% | 15.9 | 13y-18y | No |
| Waldron 2001 | Waldron 2001 | New Mexico, USA | 80% (FFT) | 47% | 38% | NS | 15% | 15.4 (FFT) | 13y-17y | Yes |
| Henggeler 2002 | Henggeler 1999 | South Carolina, USA | NR | NR | NR | NR | NR | NR | 12y-17y | No |
| Liddle 2004 | Liddle 2004 | Florida, USA | 74% | 42% | 3% | 49% | 4% | 13.7 | 11y-15y | Yes |
| Dennis 2004 | Dennis 2004 | Connecticut, Florida, Illinois, Pennsylvania, USA | 83% | 4% | 61% | 30% | 5% | 15/16 (mode) | 13y-18y | Yes |

| | | | | Ethnicity | | | | Age | | |
|---|---|---|---|---|---|---|---|---|---|---|
| **Report ID** | **Study ID** | **State/ Country of study** | **% male** | **Hispanic** | **White** | **Black** | **Other** | **Mean** | **Range** | **Included in Meta-analysis?** |
| Slesnick 2005 | Slesnick 2005 | New Mexico, USA | 41% | 41% | 37% | 7% | 10% | 14.8 | 12y-17y | No |
| Henggeler 2006 | Henggeler 2006 | South Carolina, USA | 83% | 0% | 31% | 67% | 2% | 15.2 | 12y-17y | Yes |
| Liddle 2008 | Liddle 2008 | Unclear, USA | 81% | 10% | 18% | 72% | 0% | 15.4 | 12y-17.5y | Yes |
| Liddle 2009 | Liddle 2004 | Florida, USA | 74% | 42% | 3% | 49% | 4% | 13.7 | 11y-15y | Yes |
| Henderson 2010 | Henderson 2010 | Florida, USA | 82% | 22% | 17% | 60% | 1% | 15.4 | 13y-17y | No |
| Robbins 2011 | Robbins 2011 | Unclear, USA and Puerto Rico- | 80% (BSFT) | 44% | 31% | 23% | 2% | 15.5 (BSFT) | 13y-17y | Yes |
| Horigan 2015 | Robbins 2011 | Unclear, USA and Puerto Rico | 79.30% | 46% | 32% | 21% | 1.50% | 16 | 13y-17y | No |
| Valdez 2013 | Valdez 2013 | Texas, USA | 49% (BSFT) | 100% | 0% | 0% | 0% | 15.3 | 12y-17y | No |

| | | | | Ethnicity | | | | Age | | |
|---|---|---|---|---|---|---|---|---|---|---|
| **Report ID** | **Study ID** | **State/ Country of study** | **% male** | **Hispanic** | **White** | **Black** | **Other** | **Mean** | **Range** | **Included in Meta-analysis?** |
| Slesnick 2013 | Slesnick 2013 | Unclear, USA | 47.5% | NR | 26% | 66% | 8% | 15.4 | 12y-17y | Yes |
| Rigter 2013 | Rigter 2013 | Belgium, France, Germany, Netherlands, Switzerland | 85% | NR | NR | NR | NR | 16.3 | 13y-18y | Yes |
| Dakof 2015 | Dakof 2015 | Florida, USA | 89% | 59% | NR | 35% | 6% | 16 | 13y-18y | Yes |
| Liddle 2018 | Liddle 2018 | Florida, USA | 75% | 68% | 13% | 18% | 0% | 15.4 | 13y-18y | Yes |

*Table 3. Demographics of participants from the included studies*

Across all 18 studies, the age of participants ranged from 11-21 years old with the median age for study participants being 15.5. Treatment duration varied from 2-9 months and from 8-50 sessions (see Appendix G for more details regarding treatments used in each study). Follow-up measurement time-points ranged from 7 months to 7 years following randomisation. The proportion of participants who did not complete treatment varied from 2% (Henggeler 1999) to 41% (Liddle 2008). The mean proportion of treatment non-completers across all 18 studies was 26%. A substantial majority of the studies were conducted in the USA, with just one exception (Rigter 2013), which was conducted across 5 European countries: France, Germany, Belgium, the Netherlands and Switzerland.

All studies included participants who were identified as having a clinically significant problem with substances. Six studies required participants to meet DSM IV criteria for either substance abuse or dependence, one study used DSM III-R diagnostic criteria as the threshold, and one study required eligible participants to endorse one or more criteria for the DSM IV diagnosis of substance abuse or dependence. The rest used idiosyncratic measures, with three specifying a minimum amount of drug use in the recent past, and the remaining seven applying the broader criterion of having been being referred for specialist treatment and assessed by the research team as appropriate. Appendix H includes a table showing the criteria used for use of substances and the measures used for each outcome variable. Table 4 below includes further detail about the studies.

| Category | Factor | All studies (% or no. of studies) | Studies in meta-analysis only (% or no. of studies) |
|---|---|---|---|
| Gender | Male | 79% | 76% |
| | Female | 11% | 14% |
| | Other/not reported | 0% | 0% |
| Ethnicity | White | 34% | 34% |
| | Black | 34% | 40% |
| | Hispanic | 29% | 22% |
| | Other | 3% | 4% |
| Population | Community substance abuse treatment services | 12 | 8 |
| | Juvenile offenders | 4 | 3 |
| | 'Runaway' youth | 2 | 1 |
| | Gang-affiliated youth | 1 | 0 |
| Family therapy type | Multi-dimensional family therapy | 9 | 7 |
| | Brief strategic family therapy | 4 | 1 |

| Category | Factor | All studies (% or no. of studies) | Studies in meta-analysis only (% or no. of studies) |
|---|---|---|---|
| | Ecologically based family therapy | 2 | 1 |
| | Functional family therapy | 2 | 1 |
| | Multisystemic treatment | 2 | 2 |
| Comparator * | 'Treatment as usual' (TAU) | 6 | 2 |
| | Peer group therapy | 5 | 3 |
| | Individual CBT | 3 | 3 |
| | Residential treatment | 1 | 1 |
| | Community reinforcement approach ((A)CRA) | 2 | 2 |
| | Motivational interviewing (MI) | 1 | 1 |
| | Motivational enhancement therapy and CBT | 1 | 1 |
| | No intervention | 1 | 0 |
| | One-person family therapy | 2 | 0 |
| | Parent group | 1 | 0 |

| Category | Factor | All studies (% or no. of studies) | Studies in meta-analysis only (% or no. of studies) |
|---|---|---|---|
| | Drug court (DC)** | 1 | 1 |
| | Family court (FC)** | 1 | 1 |
| | Drug court, family therapy and contingency management (DC/MST/CM) ** | 1 | 1 |

*Table 4. Further descriptive statistics from included studies.*

** some studies contained more than one comparator and so total number is greater than 18.*

*** Family court consisted of appearing in front of a judge and 12-week attendance to a group treatment theoretically oriented to cognitive– behavioural and systems theory. Drug court included the same services with additional regular urine screenings associated with punishments/rewards*

## Meta-analyses

Meta-analyses were conducted to assess the difference between the effect of family therapy and the comparator conditions on the identified outcomes of use of substances, internalising behaviours, externalising behaviours and family functioning. For each intervention, separate analyses were conducted to compare outcomes between baseline and end of treatment (B-ET), and outcomes between baseline and

follow-up (B-FU). Follow-ups were only included if they were measured between 6 and 18 months from baseline to increase homogeneity of data and to match previous meta-analyses (van der Pol et al., 2017). Where multiple follow-ups were conducted during this time period, the latest one was used in the analysis. Where required, scales were adjusted by multiplying the mean score by -1 so that higher scores indicated poorer outcomes in all cases (Cochrane Collaboration, 2019b).

The meta-analyses were conducted in R (R Core Team, 2013) and used the standardised mean difference as the unit for analysis. This is used when performing a meta-analysis on continuous data when studies have measured the same outcome but have used different instruments (Joanna Briggs Institute, 2019). In this approach, the standard deviations are used to standardise the mean differences in each study to a single scale. The results are expressed in units of standard deviation. Hedge's adjusted g was used for effect sizes, as this corrects for smaller sample sizes more effectively than Cohen's d and performs equally well in larger sample sizes (Deeks et al., 2008). 95% confidence intervals are also reported which reflect the range of results in which we can be 95% sure that the true value lies. The width of this interval varies depending on the sample size of the study and the variability of the outcome measurements. When the confidence interval does not cross the null value, this reflects a significant *p*-value and therefore a significant difference in effect of the two interventions.

A random effects model was used as the true effect size was expected to vary from study to study based on differences in participants, recruitment or intervention (Borenstein, 2015). Rather than assuming that the true effect of the intervention is the same across each study, a random effects model assumes that intervention effects follow a distribution and that differences amongst results occur due a combination of chance and true variation in the size of intervention effects (Cochrane 2019). A random effects model accounts for variation both within and between studies. (Borenstein et al., 2007).

As these particular analyses were grouping together different specific interventions in the family therapy and alternative conditions, heterogeneity (variation in study outcomes between studies) was highly likely. Statistical investigation of tests for heterogeneity supported this assumption (see Table 5 below). Where heterogeneity was moderate or substantial for particular comparisons, subgroup analyses were conducted to explore this heterogeneity further. The a priori decided characteristics for subgroup comparisons were comparator treatment type (individual vs. group), family therapy type (MDFT, MST, FFT, BSFT or EBFT) and length of follow-up (greater or less than 12 months). These were chosen as they were identified as theoretically relevant to the field and all studies could easily be separated into these groups (Cochrane Collaboration, 2019a).

| Comparison | $I^2$ value | Heterogeneity |
|---|---|---|
| Internalising: B-ET | 77.61% | Substantial |
| Family functioning: B-ET | 62.77% | Moderate |
| Substance us: B-ET | 60.16% | Moderate |
| Substance use: B-FU | 59.70% | Moderate |
| Externalising: B-FU | 46.65% | Low |
| Internalising: B-FU | 45.26% | Low |
| Externalising: B-ET | 35.99% | Low |
| Family functioning: B-FU | 14.72% | Low |

*Table 5. Tests for heterogeneity. Heterogeneity descriptors taken from Higgins et al. 2003*

## Funnel plots

Funnel plots are a form of scatter plot which allow for an inspection of treatment effect (standardised mean difference) compared to measures of study precision (standard error). Visual inspection of these graphs allows for researchers to comment on

systematic heterogeneity or bias in the studies included in a meta-analysis. Figure 2 shows the funnel plots for each of the meta-analyses included in this report.

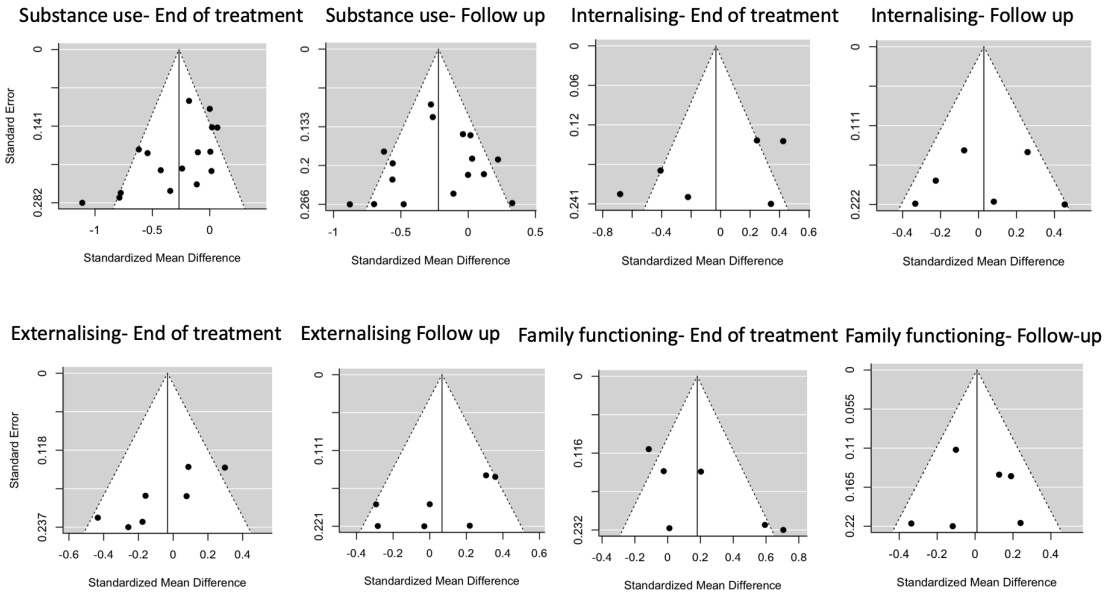


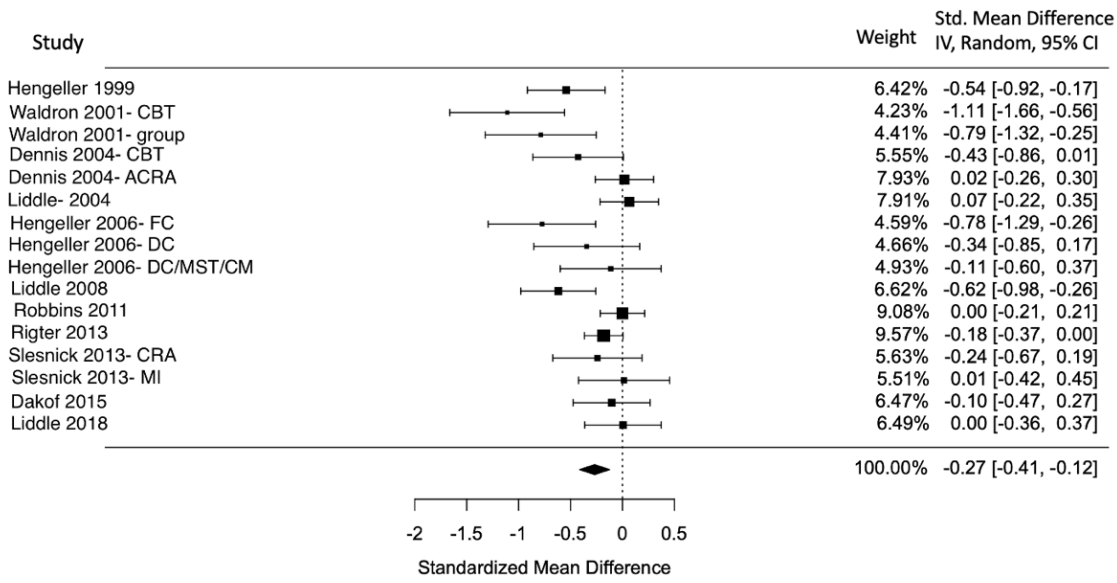

*Figure 2. Funnel plots from each of the meta-analyses conducted in this report*

Visual inspection of the funnel plots appears to generally show good levels of symmetry. Most studies lie within the 95% confidence interval indicated by the dotted lines and where they do not, they are often larger, more powerful studies which might imply design differences rather than publication bias. In accordance with the Cochrane recommendation (Cochrane Collaboration, 2019), formal testing for plot asymmetry was not conducted on analyses with fewer than ten studies. For the measures of substance use, Egger's test (Egger et al., 1997) was used to assess plot asymmetry. This test was significant for Substance use B-ET ($p$= .002) but not for Substance use B-FU ($p$= .469). The plot asymmetry for Substance use B-ET may be due to publication bias, indicating that studies with less statistically significant results have not been published. However, this could also be due to smaller studies having poorer methodological quality or due to study heterogeneity caused by, for example, smaller studies using different populations than larger studies. This bias should be considered when interpreting the results of the analysis.

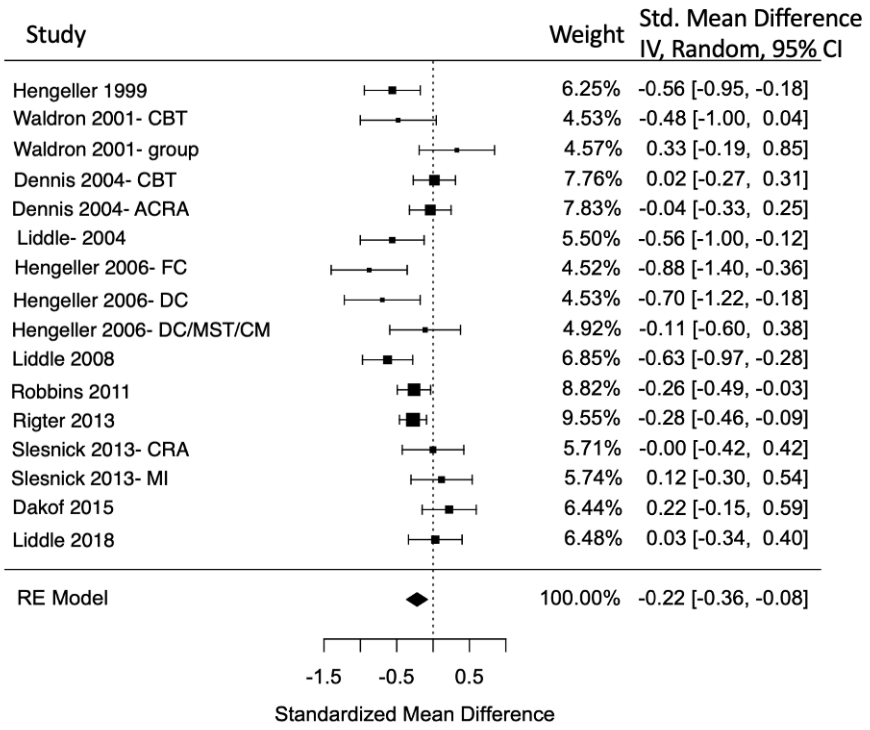
## Forest plots

The below figures show the weighted forest plots for each meta-analysis. Effect sizes for the different studies are indicated under the column labelled 'std. mean difference IV' and can be interpreted as large (>0.8), moderate (0.5-0.8) small (0.2-0.5) and non-significant (<0.2). Studies which provide a greater relative contribution to the analysis (larger weight) are indicated by larger squares. For all outcomes, negative effect sizes indicate a better outcome in the family therapy condition than the alternative condition and positive effect sizes indicate the opposite. On the forest plots, this is reflected in results to the left of the vertical line favouring family therapy and those to the right favouring the comparison condition. Where studies included more than two treatment groups, separate comparisons were conducted in order to compare the family therapy condition against each of the other conditions separately.

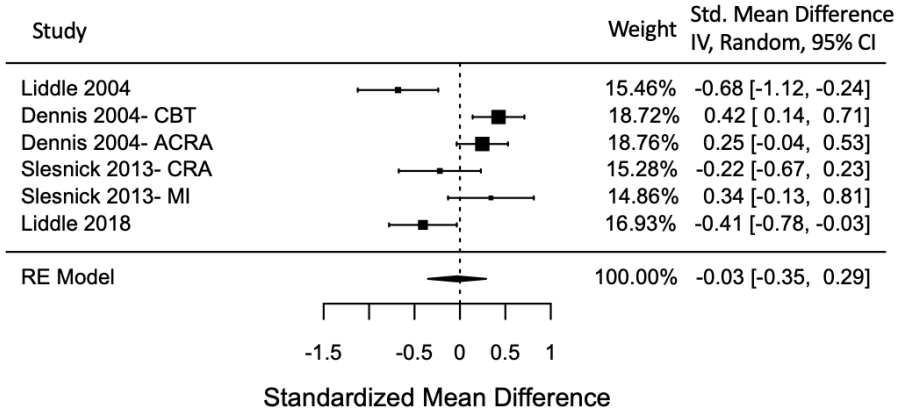
**Substance use: baseline to end of treatment**



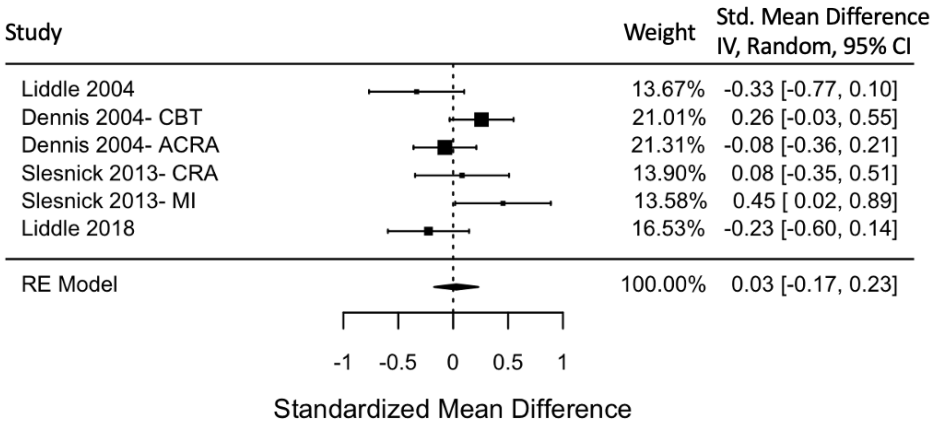
**Substance use: baseline to follow-up**



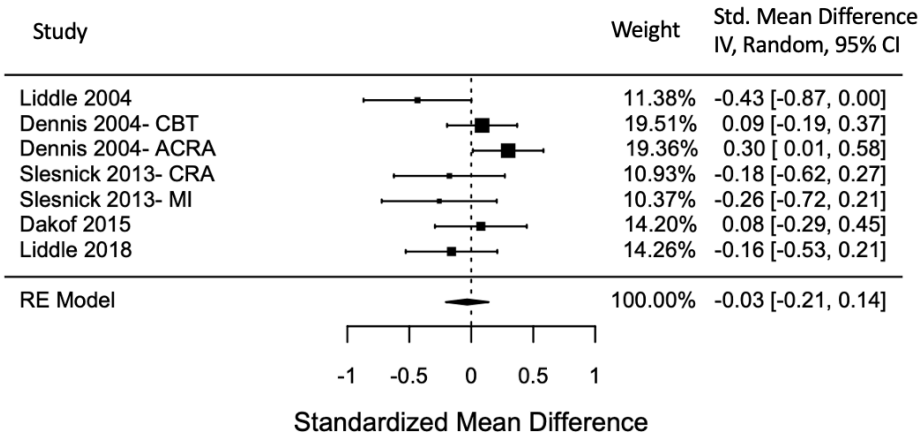

**Internalising behaviour: baseline to end of treatment**



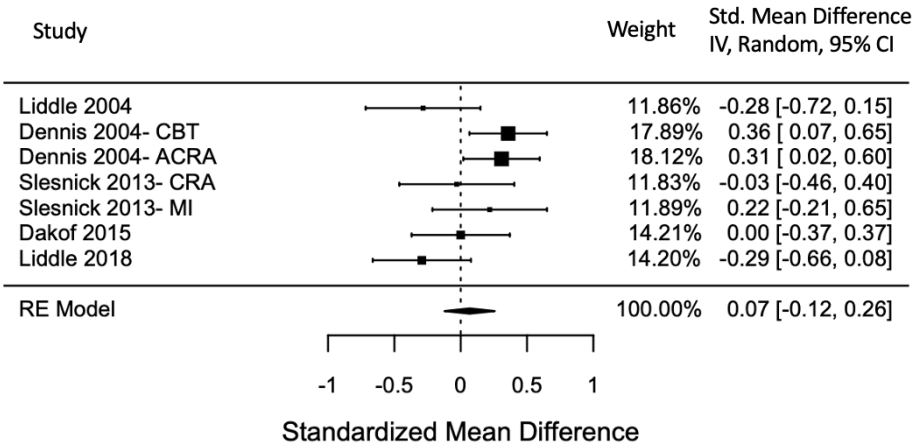
**Internalising behaviour: baseline to follow-up**



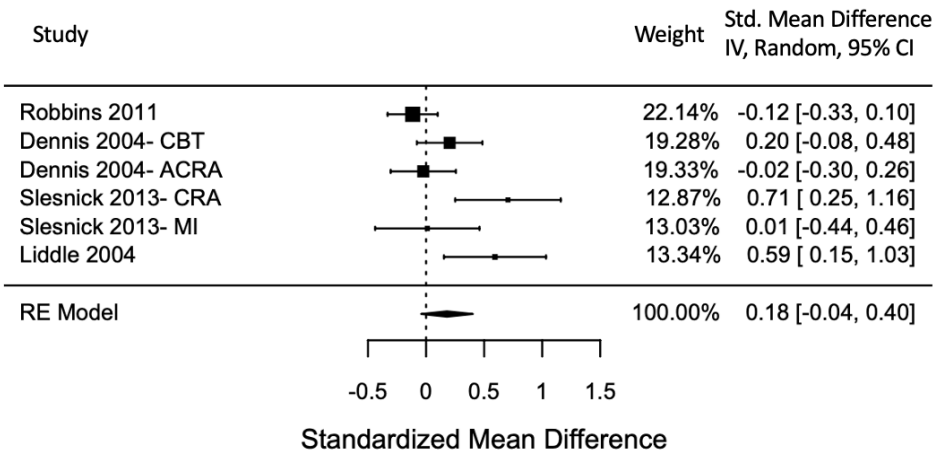

**Externalising behaviour: baseline to end of treatment**



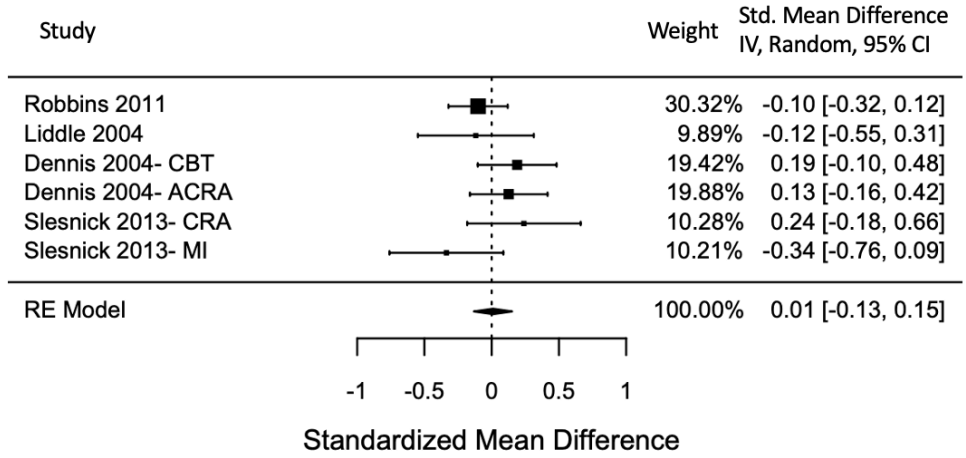

**Externalising behaviour: baseline to follow up**



**Family functioning: baseline to end of treatment**




**Family functioning: baseline to follow-up**




## Results of meta-analyses

The results of the meta-analyses are included in Table 6 below.

| Comparison | No. of comparisons | No. of studies | Hedges *g* | 95% Confidence interval | *p*-value | Interpretation of effect size |
|---|---|---|---|---|---|---|
| Substance use: B-ET | 16 | 11 | -0.27 | [-0.41, 0.12] | < .001 | Small negative (favouring family therapy) |
| Substance use: B-FU | 16 | 11 | -0.22 | [-0.36, -0.08] | <. 001 | Small negative (favouring family therapy) |
| Internalising behaviour: B-ET | 6 | 4 | -0.03 | [-0.35, 0.29] | .853 | Non-significant negative effect |
| Internalising behaviour: B-FU | 6 | 4 | 0.03 | [-0.17, 0.23] | .784 | Non- significant positive effect |
| Externalising behaviour: B-ET | 7 | 5 | -0.03 | [-0.21, 0.14] | .706 | Non-significant negative effect |
| Externalising behaviour: B-FU | 7 | 5 | 0.07 | [-0.12, 0.26] | .482 | Non-significant positive effect |
| Family functioning: B-ET | 6 | 4 | 0.18 | [-0.04, 0.40] | .113 | Non-significant positive effect |
| Family functioning: B-FU | 6 | 4 | 0.01 | [-0.13, 0.15] | .887 | Non-significant positive effect |

*Table 6. Results of the meta-analyses*

These meta-analyses indicate family therapy is more effective at reducing use of substances than comparative conditions, both at end of treatment and at follow-up. There does not appear to be a significant difference between family therapy and comparative conditions in internalising behaviours, externalising behaviours or family functioning.

## Subgroup analyses

Subgroup analyses were used to investigate further the high heterogeneity seen for the analyses of Substance use: B-ET, Substance use: B-FU, Internalising behaviour: B-ET and Family functioning: B-ET. The subgroups investigated were the a priori decided characteristics of comparator treatment type (individual treatment vs. group treatment), family therapy type (MSFT, MST, EBFT, FFT, BSFT) and length of follow-up for follow-up comparisons (greater or less than 12 months). Table 7 shows the results of these subgroup analyses, indicating whether the characteristic significantly modifies the effect of family therapy in comparison to the comparator conditions.

| Comparison | Subgroup | Significance |
|---|---|---|
| Substance use: B-ET | Comparator type | $p = .459$ |
| | Family therapy type | $p < .001$ |
| Substance use: B-FU | Comparator type | $p = .786$ |
| | Family therapy type | $p = .072$ |
| | Follow-up length | $p = .303$ |
| Internalising behaviour: B-ET | Comparator type | $p < .001$ |
| | Family therapy type | $p = .715$ |
| Family functioning: B-ET | Comparator type | $p = .144$ |
| | Family therapy type | $p = .139$ |

*Table 7. Subgroup analyses for those comparisons with moderate or high heterogeneity*

The Substance use: B-ET subgroup analysis indicated that separating by family therapy type was significant. Individual meta-analyses were conducted to explore this

further. The results of these showed that EBFT, MDFT, and BSFT were not significantly better than comparators at reducing substance use (EBFT- $p$= .460, Hedge's $g$= -0.12, 95% CI= [-0.42, 0.19]; MDFT- $p$= .051, Hedge's $g$= -0.15, 95% CI= [-0.31, 0.00]; BSFT- $p$= 1.00, Hedge's $g$= 0.00, 95% CI= [-0.21, -0.21]). The meta-analyses for FFT and MST were significant (FFT- $p$< .001, Hedge's $g$= -0.94, 95% CI= [-1.33, -0.56]; MST- $p$< .001, Hedge's $g$= -0.45, 95% CI= [-0.68, -0.22]) indicating that in these two cases, family therapy led to a greater reduction in use of substances than comparators. Each of these meta-analyses showed non-significant heterogeneity (EBFT- $p$= .414, MDFT- $p$= .051, BSFT- $p$= 1.00, FFT- $p$= .409, MST- $p$= .289) indicating that separating the analyses in this way was a meaningful way of reducing heterogeneity. The result of these analyses indicates that whilst all family therapies appeared to reduce use of substances more than the comparators, FFT and MST may be particularly effective.

The Internalising behaviour: B-ET analysis indicated that comparator type was significant. Separate meta-analyses showed that compared to group treatments, family therapy was more effective ($p$< .001, Hedge's $g$= -0.52, 95% CI= [-0.81, -0.24]) and compared to individual treatments it was less effective ($p$= .001, Hedge's $g$= 0.24, 95% CI= [0.03, 0.45]). The heterogeneity within each subgroup was not significant (Group: $p$=.352, Individual: $p$=.123) suggesting that analysing the subgroups in this way was a meaningful way of reducing heterogeneity. Family therapies therefore appear to be significantly more effective at reducing internalising symptoms than group treatments, but less so than individual treatments.

The subgroup analyses performed for Substance use: B-FU and Family functioning: B-ET were not significant. It is likely that there are other factors causing the high levels of heterogeneity seen, such as methodological, participant or treatment differences were not captured by the analyses conducted here.

## Narrative Summary

The meta-analyses produced mixed findings for the different outcomes. Family therapy was more effective at reducing use of substances than the alternative conditions in all studies at end of treatment, with eight of the sixteen comparisons showing statistically significant differences. There was a small overall effect size indicating a significantly greater reduction in use of substances for family therapy compared to comparison conditions. When investigating each family therapy type individually, every study showed a greater reduction in use of substances than its comparator treatment, but it appears that FFT and MST may be particularly effective. At follow-up, there was also a small overall effect size. Most studies continued to show that family therapy was more effective than the alternatives at maintaining the reduction in use of substances, however two studies showed that family therapy was significantly less effective than the alternative treatment (group treatment and adolescent group therapy; Waldron 2001, Dakof 2015) at follow-up. Overall, the analyses support the hypothesis that family therapy is more effective at reducing adolescent substance abuse than other treatments, both at the end of treatment and at longer-term follow-up.

The analyses of effects on internalising and externalising symptoms showed that, overall, family therapy did not perform differently than the comparator interventions. For the reduction of internalising behaviours, sub-group analyses indicated that family therapy reduces internalising behaviours to a greater extent than group treatments but to a lesser extent than individual treatments across the studies included. One way of understanding this might be the focus of the alternative treatments. Individual treatments such as CBT often have a focus on managing anxiety and low mood using cognitive and behavioural strategies (Fenn & Byrne, 2013), which would lead to a reduction in internalising symptoms. In contrast, group treatments often have a focus on interpersonal communication and behaviour management (Center for Substance Abuse Treatment, 2005), which may lead to less change on internalising behaviours.

Measures of family functioning showed no difference between the effectiveness of family therapy and comparators. Where there was an effect for individual studies, family therapies tended to perform worse than other treatments at improving family functioning. These effects perhaps lessened over time, with three studies showing a small effect size at end of treatment in favour of the alternative treatment but just one at follow-up. Subgroup analyses did not identify a clear pattern of results.

In addition to the papers included in the meta-analysis, two papers identified in the literature search involved long-term follow-ups of other studies. Henggeler 2002 is a four year follow-up of the study reported in Henggeler 1999, and Horigian 2015 is a follow-up of Robbins 2011, taken at a single point in time with participants being 3-7 years post-randomisation. Henggeler 2002 found that participants who had been in the MST condition had lower rates of marijuana and cocaine use when measured using urine and hair samples. They found no difference for self-reported drug use, externalising or internalising behaviours. Horigian 2015 found no significant difference in drug use between the two conditions but did find that participants in the BSFT condition showed lower rates of externalising behaviour. This suggests a mixed picture as to whether family therapy leads to lower rates of drug use in the longer-term. There may be some evidence that MST reduces externalising behaviours more than treatment as usual, but this finding would have to be replicated in other long-term follow-ups before it could be considered a robust finding.

Six studies were not included in the meta-analysis due to poor quality ratings (Szapocznik 1983, Szapocznik 1986, Friedman 1989, Liddle 2001, Henderson 2010, Valdez 2013) or due to data not being made available by study authors (Slesnick 2005). Table 8 includes a summary of these studies and their findings.

| Study | Population | Family therapy | Comparator | Outcomes |
|---|---|---|---|---|
| Szapocznik 1983 & Szapocznik 1986 (continuation of same study) | Hispanic youth referred for drug treatment | BSFT | Single-person family therapy | No difference between treatments for drug use. BFT leads to less improvement in family cohesion than one-person family therapy |
| Friedman 1989 | Boys at school for 'emotionally disturbed youth' | FFT | Parent groups | No difference between treatments for use of substances. |
| Liddle 2001 | Community drug treatment service | MDFT | Skills-based adolescent group therapy/ multifamily educational intervention | MDFT led to greater reductions in use of substances than either other therapy |
| Henderson 2010 | Community drug treatment service | MDFT | Peer group treatment | MDFT led to greater reduction in use of substances for those with higher baseline severity. No difference for those with lower baseline severity. |
| Valdez 2013 | Gang affiliated, drug using adolescents | BSFT | TAU (referrals to social and behavioural health services and drug counselling on request) | No difference between treatments on use of substances. |

| | | | | |
|---|---|---|---|---|
| Slesnick 2005 | Youth at runaway shelter | EBFT | TAU (no formal psychological treatment) | No difference between treatments on use of substances. No difference between treatments for family functioning. |

*Table 7. Summary of studies not included in meta-analysis and their findings*

Although caution must be used when interpreting these studies due to their assessed poor quality, the results from these appear to be broadly in line with the meta-analytic results. Some studies found a greater decrease in use of substances in the family therapy condition than alternative condition (Liddle 2001, Henderson 2010 for higher severity participants) however others found no difference (Szapocznik 1983 & 1986, Friedman 1989, Henderson 2010 for lower severity participants, Valdez 2013 & Slesnick 2005). No study found family therapy to be less effective than the alternative at reducing drug use. Studies also showed mixed findings for family functioning with one study finding family therapy to perform better than the alternative condition, (Liddle 2001) one showing no difference (Slesnick 2005) and two showing poorer outcomes (Szapocznik 1983 & 1986). None of these studies contained explicit measurements of externalising or internalising behaviours. In general, these patterns match that of the meta-analyses with family therapy being better than or equivalent to alternative treatments at reducing use of substances but showing no consistent pattern for family functioning.

## Discussion

This review included 20 papers representing 18 studies of which 11 were included in the meta-analyses. The included papers were generally of good quality, particularly papers such as Liddle (2004), Dakof (2005) and Liddle (2018) which all achieved almost all or all of the quality index markers. The field should be commended for producing a large number of high-quality studies in this field which were eligible for inclusion in the meta-analyses.

Overall, the studies included in this paper report mixed findings regarding the efficacy of family therapy when compared to alternative treatments for substance abuse in young people. Generally, the literature indicates that family therapy may be

significantly more effective than alternative treatments for reducing use of substances in young people with substance abuse problems. However, it is important to note that statistical significance is not the same as clinical significance. Although family therapy appears to lead to a significantly greater reduction in substance use, it may be that this represents a change that does not have a large impact on the individual's life. Therefore, we need to exercise caution when interpreting such effects and using them to make policy recommendations.

Nonetheless, it does appear that family therapies perform well at reducing use of substances, as family therapy in all included studies performed equivalently to or better than the comparison condition. This suggests that family therapy can be considered a good treatment option for this population at decreasing problematic substance use and should routinely be considered in treatment programmes.

However, use of substances should not be the only way of measuring success as a treatment. The other variables that were analysed were not reported in as many papers as use of substancs outcomes (internalising – 4 studies, externalising – 5 studies, family functioning – 4 studies) suggesting that the research still relies heavily on frequency of substance use to determine treatment success at the expense of other measures of psychological functioning. The results of the meta-analyses suggested no clear advantage of family therapy over alternative treatments with regards to any of these outcomes. Indeed, in a number of studies, family therapy performed worse than the comparison condition. This is perhaps surprising, particularly for family functioning outcomes, which one might expect to be a particular focus of family-based treatments. It may be that intervening with families and encouraging changes in the way members relate to each other may create imbalance, at least to begin with. Family therapists (e.g. Seshadri, 2019) note that families seek homeostasis within their members and generally current functioning allows for a balance, even if it is not an optimal family environment. Family therapy may be perceived as upsetting the homeostasis of the family and therefore lead to a decrease in family functioning rather

than an increase. Further investigation is warranted to further explore the impact of different therapies on outcomes related to internalising behaviours, externalising behaviours and family functioning. This will help determine what makes treatments more effective modifiers of these, as well as whether and how these translate to increased wellbeing, quality of life and relapse prevention from problematic use of substances.

Regarding demographics, studies appeared to have good representation of ethnicities with almost equal numbers of participants being Black, White or Hispanic. Participants covered a range of ages within the category of young person (11-21 years old) and although the majority of the participants were male (79%) this reflects the proportion of males seen in drug abuse programmes in the general population (80%, European Monitoring Centre for Drugs and Drug addiction, 2005). The average dropout rate (26%) was lower than that found in reviews for adult drug treatment (47%, Brorson et al., 2013) suggesting that these trials were able to engage young people in these treatments. Overall, these studies appear to reflect the population into which treatments will be disseminated.

However, another factor to consider is the location of the studies conducted. Of the 18 studies included in the narrative review, 17 of them were conducted in the USA, with just one conducted outside (Rigter 2013, conducted in 5 European countries). This encourages us to question the transportability, and cultural sensitivity of these treatments. It is particularly notable given one of the justifications for this review was the lack of NICE guidelines in this area, that none of the included studies have been conducted in a UK population. Research trials in wider geographic populations should be conducted to test the transportability of these treatments outside of the USA.

A potential limitation of this review is the variety of alternative treatments used, with treatment as usual, group treatments and individual treatments all combined within single analyses. This may lead to difficulty in interpreting the relative effectiveness of family therapy compared to alternative treatments. Unfortunately, as there is such

variety between alternative treatments used, with no more than three studies using the same one, it is not feasible to perform separate analyses for each alternative treatment as doing so would significantly reduce the power of the analyses. Nonetheless, the heterogeneity of the comparator conditions should be borne in mind when interpreting the results. Additionally, it can be noted that the inter-rater agreement for the quality of the papers, whilst acceptable, was only moderate for this study. The quality decisions of the papers are subjective to the study authors and therefore may have differed with a different research team or different views on what constitutes an acceptable level of study quality. As the results of the meta-analyses inherently depend on which studies have been chosen for inclusion, this subjectivity is important to consider when discussing the results of this study.

In conclusion, this paper has reviewed the literature for the effectiveness of family therapy for substance abuse in young people. We have reviewed 18 randomised controlled trials testing 5 broadly similar family therapies against a range of alternative treatments. Meta-analyses have found that family therapies show a small but significantly increased effectiveness at reducing use of substances, both at the end of treatment and at follow-up. However, alternative measures of treatment success such as internalising behaviour, externalising behaviour and family functioning did not show a significant difference between family therapies and alternative treatments.

## Future Directions

The findings here suggest that family therapies are more effective at reducing use of substances in young people than alternative treatments. Family therapies should be considered as an option for standard treatment packages for substance abuse. It is less clear whether family therapies are particularly efficacious at improving other associated areas of functioning such as internalising or externalising behaviours and

family functioning. Future studies should move away from only using use of substances as a measure of treatment success and explore treatment impacts on other measures of psychological functioning. Further work should also be done to investigate the use of these treatments in countries other than the US to see how treatments adapt to alternative cultures.

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* *indicates a paper has been included in the meta-analysis*

** *indicates a paper was included in the narrative review but not meta-analysis*

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# Service Improvement Project

## Understanding dropout from Cognitive Behavioural Therapy for First-Episode Psychosis

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# Embedded abstract

**Background:** Psychosis is a mental health problem with a lifetime prevalence of 0.7%. Cognitive behavioural therapy for psychosis (CBTp) is one of the NICE recommended psychological therapies for first episode psychosis. It should be offered to clients as part of the NHS Access and Waiting Time standards. NICE guidelines recommend at least 16 sessions of CBTp for maximum benefit.

**Aims:** This study aimed to understand the reasons for dropout from CBTp in two early intervention for psychosis services and to make service recommendations for reducing dropout.

**Method:** Two studies were conducted. The first investigated whether demographic and clinical variables from routinely collected service data predict dropout from CBTp. The second used thematic analysis of semi-structured interviews with therapists and clients to obtain their views of why dropout occurs.

**Results:** The quantitive analysis indicated that gender significantly predicted dropout, with males being twice as likely as females to drop out of therapy. No other variable was predictive. A number of themes of why people dropout from treatment were extracted by the thematic analysis, broadly grouped under therapy and personal factors.

**Conclusion:** Dropout appears to be influenced by different factors, including client gender, timing of therapy, and understanding of therapy. Recommendations include increasing flexibility of treatment delivery, increasing client's understanding of CBTp

prior to the beginning of treatment, and improving how routine feedback is sought from those who have dropped out of CBTp.

**Suggested running head**: Disengagement from CBT for psychosis

**Conflicts of interest**: None

**Data availability statement:** The data that support the findings of this study are available on request from the corresponding author, EG.

**Financial support**: This research received no specific grant from any funding agency, commercial or not-for-profit sectors.

**Keywords:** Psychosis, Disengagement, Dropout, CBTp.

**Key learning aims**:

- Men appear to be significantly more likely than women to dropout from CBT for psychosis.
- Other factors such as psychological wellbeing, trauma history and causal beliefs about psychosis do not appear to impact dropout.
- Care should be given to when and how CBTp is offered to individuals.
- Offering treatment at a practically and psychologically optimal time may prevent dropout.
- Realistic expectations for CBTp prior to treatment commencement may also prevent dropout.

# Introduction

Psychosis describes a range of mental health problems characterised by unusual beliefs (delusions) and experiences (hallucinations) as well as other emotional and cognitive difficulties. Psychosis is estimated to have a 0.7% lifetime prevalence rate (Moreno-Küstner et al., 2018) and is associated with high societal and economic cost (Andrew et al., 2012). The NHS Early Intervention in Psychosis Access and Waiting Time (AWT) Standard requires 50% of people experiencing a first episode of psychosis to be assessed and offered an evidence based package of care within two weeks (NICE et al., 2016). Providing timely and effective treatments for first episode psychosis within dedicated Early Intervention in Psychosis (EIP) services is a named aim of the NHS Five Year Forward View for Mental Health (NHS England, 2016) and the Long Term Plan (NHS England, 2019).

National Institute for Clinical Excellence (NICE) guidelines recommend CBT for psychosis (CBTp) as the individual psychological therapy of choice for first episode psychosis (NICE, 2014). This should be delivered over at least 16 planned sessions and focus on establishing links between thoughts, feelings and behaviour. CBTp has an established evidence base, with systematic reviews suggesting it has a small to moderate effect size at improving symptoms of psychosis (Jauhar et al., 2014, Wykes et al., 2008). Alongside family interventions, CBTp is the psychological intervention most commonly delivered in EIP services in the UK.

Dropout occurs when a client terminates therapy before a planned ending with their therapist. Lincoln et al., (2016) demonstrated that at least 15 sessions of CBTp were needed to demonstrate significant improvement in symptoms and reduction in distress. As individuals who drop out of treatment receive fewer sessions, they are less likely to benefit from the treatment. The frequency of dropout from CBTp ranges in the literature, with a recent meta-analysis suggesting an average dropout rate of 24.6% (NICE, 2014). Given this, it is helpful to understand what factors influence dropout,

allowing services to ensure that clients are given the best possible chance of engagement.

This project was conducted in two EIP services. The services are keen to meet national AWT standards for CBTp and to deliver high quality therapy that engages clients and leads to improvements in psychological functioning. The services have a high demand for CBTp and have limited therapist capacity. Therefore, the services wish to understand the factors that contribute to dropout from CBTp, in order to increase service efficiency and effectiveness. Findings would also allow services to identify and support individuals who may be at high risk of dropping out, and potentially modify treatments to improve adherence.

The factors of interest to the present study involve the following categories: demographics, trauma history, causal beliefs about psychosis, and baseline symptoms. Study variables were chosen as they had been shown as significant predictors of engagement with CBTp or psychosis services in previous literature. Variables were also selected pragmatically as they formed part of the routine assessment data collected by all therapists at the initial assessment. A brief overview of the literature relating to each variable category is included below.

***Demographics***

Lecomte et al., (2008) found that non-engagement in services as a whole, was more common for males. Byrne et al., (2019) investigated ethnicity, and found no significant impact on dropout from CBTp. Richardson et al., (2019) found that younger individuals were more likely to dropout from CBTp. Evaluation of CBTp in psychosis community services found no difference in drop-out rates according to age, gender or ethnicity (Jolley et al, 2015). Given the mix of findings in previous literature, it is helpful to investigate whether any demographic variables predict dropout within this early intervention sample.

***Trauma***

Trauma has been identified as a strong risk factor for psychosis (McGrath et al., 2017). Mueser et al. (1998) found that 98% of people with psychosis had a trauma history, and 48% of these met criteria for a PTSD diagnosis. Trauma history has been linked to poorer medication adherence and engagement with services in early intervention psychosis (Lecomte et al., 2008). However, thus far there has not been an investigation as to whether the presence of trauma, trauma type or PTSD symptoms impacts CBTp engagement.

***Causes of psychosis***

Freeman et al. (2013) demonstrated that people endorsing more biological explanations for their psychosis tended only to engage with partial psychological therapy, whereas those who endorsed more psychological explanations were more likely to receive full therapy. However, this study was conducted with people with a significant history of psychosis, (10 years on average). Therefore, it would be helpful to investigate whether this result replicates within an early intervention service.

***Baseline symptoms***

A number of studies have investigated the impact of symptoms of psychosis on engagement. Gaynor, Dooley, Lawlor, & Lawoyin, (2014) found that fewer negative symptoms of psychosis predicted uptake of CBTp for first episode psychosis. Lecomte et al.(2008) found that higher positive symptoms of psychosis predicted poor medication adherence. Richardson et al., (2019) found that scores on the Health of the Nation Outcome Scale, which indicated poorer health and social functioning predicted disengagement from CBTp.

This project investigated the reasons for dropout from CBTp in the Oxfordshire and Buckinghamshire Early Intervention in Psychosis services. These services serve the geographic areas of Oxfordshire, Buckinghamshire. They work with individuals from

the ages 14-65 who are experiencing or are at high risk of developing psychosis, providing care coordination and NICE recommended interventions for up to three years. In 2019-2020, the services accepted 223 referrals of which 39% were female and 61% were male and 76% were White British and 24% were from Black or Ethnic minority groups. 43% were aged between 14-25, 22% were aged 26-35, 16% were aged 36-45, 14% were aged 46-55 and 5% were aged 56-65 years.

Study 1 is a quantitative analysis of data from routine outcome measures (ROM). This study examined whether factors relating to demographics, trauma history, causal beliefs, and baseline symptoms significantly predicted dropout in this sample. The second study is a qualitative investigation into the reasons for dropout as understood by therapists delivering CBTp and clients who had dropped out of CBTp. These studies aim to create further understanding as to why dropout occurs and deliver meaningful service recommendations.

# Study 1

The EIP services collect ROM from all clients who are referred for psychological therapy. This study explored whether the factors identified from the literature above predicted dropout from CBTp. Dropout is defined here as attending at least 1 but fewer than 5 psychology appointments. This replicates the criterion used in the IAPT-SMI studies (Jolley et al., 2015).

## Method

Table 1 shows the variable categories explored in this study, the individual predictors used, and the questionnaires from which the predictors are taken. Unless specified, clinical cut offs were taken from the reference paper for each questionnaire.

| Variable category | Questionnaire used | Reference | Variable | Categories used |
|---|---|---|---|---|
| Demographics | Demographic questionnaire | NA | Gender | Male/ Female |
| | | | Age at referral for CBTp | 15-20/ 21-30/ 31+ * |
| | | | Ethnicity | BME/ non-BME |
| | | | Wait in days between referral to psychology and first appointment | 0-62/ 62-265/ 265+ * |
| Trauma history | Trauma and Life Events Checklist (TALE) | Carr, Hardy & Fornells-Ambrojo, 2018 | Number of traumas experienced | Low (0-6), Average (7-16), High (17+) * |
| | | | Experience of traumas directly related to psychosis | Yes/ No |
| | | | Experience of interpersonal traumas | Yes/ No |
| | Trauma Screening Questionnaire (TSQ) | Brewin et al. 2002 | PTSD symptoms | Non-clinical levels (0-5)/ Clinical levels (6+) |
| Causes of psychosis | Adapted form of the Brief-Illness Perceptions Questionnaire | Broadbent et al. 2006 | Psychosis caused by chemical imbalance | Agree / Disagree |
| | | | Psychosis caused by my mental attitude | Agree / Disagree |
| | | | Psychosis caused by trauma | Agree / Disagree |
| Baseline symptoms | Warwick-Edinburgh Mental Wellbeing Scale | Tennant et al., 2007 | Subjective wellbeing | Low wellbeing (0-40) / Medium wellbeing (40-60) / |

| Variable category | Questionnaire used | Reference | Variable | Categories used |
|---|---|---|---|---|
| | | | | High wellbeing (60+)<br>(from Warwick Medical School, 2020) |
| | Work and Social Adjustment Scale | Mundt, Marks, Shear, & Greist, 2002 | Work and social functioning | Non-clinical (0-10)/ mild or moderate (11-20)/ severe (20+) |
| | Clinical Outcomes in Routine Evaluation-10 | Barkham et al., 2013 | Psychological distress | Non-clinical (0-10)/ mild or moderate (11-19)/ severe (20+) |
| | Psychotic Symptom Rating Scales | Haddock, McCarron, Tarrier, & Faragher, 1999 | Presence of hallucinations | Yes/No |
| | | | Presence of delusions | Yes/No |

*Table 1- Predictors used in regression analyses and their sources. * Categories calculated from dataset: below the 25th percentile, 25-75th percentile, above 75th percentile*

## Participants

Data were available from 254 participants who had been referred for CBTp between March 2014 and July 2019. 61% of the participants were known to the Oxfordshire service and 39% to the Buckinghamshire service. 62.2% of participants were male and 37.8% were female. The majority of participants (72.4%) were in the non-BME category, 22.0% were in the BME category, and ethnicity was not recorded for 5.5% of participants. The mean age was 25.77 (SD= 8.83) with a range of 15 - 62. 211 participants attended 5 or more sessions and therefore were classified as engaging in therapy (83.1%). 43 attended fewer than 5 sessions and therefore were classified as

non-engagers (16.9%). This is lower than the national dropout rate (24.6%, NICE, 2014) and higher than that in the IAPT-SMI demonstration site (9.7%, Johns, Jolley et al., 2019).

## Results

Binary logistic regressions were used to explore whether the identified variables were predictive of non-completion of CBTp. Binary logistic regression is a statistical method used to predict the odds of a participant having one of two outcomes (in this case, disengagement or engagement) based on the values of independent predictor variables (Hosmer & Lemeshow, 2000). Individual regression models were used for each variable of interest as missing data across variables would lead to small samples if a regression model was used that included all variables together.

In pre-analysis checking, the data for presence of delusions and voices did not meet all assumptions. When examining crosstabulation tables, the expected counts were not all greater than one and more than 20% were less than 5. This violates the assumptions of the goodness of fit tests used in logistic regressions and therefore these data were not appropriate to be used (Field, 2009).

Table 2 below shows whether each model was a significant fit of the data and the amount of variation of the dependant variable explained by the model ($R^2$).

| | N completer | N non-completer | Goodness of fit of model | $R^2$ (Nagelkerke $R^2$) |
|---|---|---|---|---|
| Gender | 211 | 43 | $X^2(1)= 6.72$, $p= .010$ | .044 |
| Age | 203 | 42 | $X^2(2)= 3.66$, $p= .161$ | .025 |
| Ethnicity | 201 | 39 | $X^2(1)= 0.60$, $p= .440.$ | .004 |
| Wait time | 195 | 36 | $X^2(2)= 1.65$, $p= .439$ | .012 |
| No. of traumas experienced | 123 | 17 | $X^2(1)= 3.01$, $p= .222$ | .041 |
| Trauma related to psychosis | 124 | 17 | $X^2(1)= 1.37$, $p= .241$ | .019 |
| Interpersonal trauma | 121 | 17 | $X^2(1)= 0.61$, $p= .436$ | .008 |
| PTSD symptoms | 102 | 11 | $X^2(1)= 0.10$, $p= .756$ | .002 |
| Cause- chemical imbalance | 88 | 13 | $X^2(1)= 0.17$, $p= .684$ | .003 |
| Cause- mental attitude | 99 | 13 | $X^2(1)= 1.62$, $p= .203$ | .030 |
| Cause- trauma | 107 | 14 | $X^2(1)= 1.23$, $p= .267$ | .020 |
| Subjective wellbeing | 152 | 19 | $X^2(2)= 3.84$, $p= .147$ | .044 |
| Work and social functioning | 152 | 22 | $X^2(2)= 2.40$, $p= .302$ | .026 |
| Psychological distress | 148 | 22 | $X^2(1)= 2.09$, $p= .351$ | .023 |

*Table 2- Overall fit of binary logistic regression models*

The coefficients and statistics for each of the variables are included in Table 3 below.

The beta (B) value is the unstandardised regression weight. If positive it indicates that as the predictor variable increases, the chance of non-completion of therapy increases. If negative it indicates the opposite. The Wald statistic indicates if the B value is significantly different from zero. If so, the predictor is making a significant contribution to the model. The odds ratio is a measurement of likelihood. For each unit increase in the predictor variable, the likelihood of non-completion increases by a factor of the odds ratio. For example, if the regression for gender with male identified as '1' and female as '0', had an odds ratio of 2, this would indicate that males were twice as likely to not complete therapy as women.

| Variable | Parameter coding | B (SE) | Unadjusted odds ratio | 95% CI | Wald statistic |
|---|---|---|---|---|---|
| Gender | Female (0) | | | | |
| | Male (1) | 0.98 (0.40) | 2.65 | 1.21 – 5.81 | $X^2(1)= 5.94$, $p= .015$ |
| Age | 31+ (0) | | | | |
| | 21-30 (1) | 0.43 (0.54) | 1.53 | 0.53 – 4.43 | $X^2(1)= 0.62$, $p= .431$ |
| | 15-20 (2) | 0.85 (0.49) | 2.34 | 0.90 – 6.07 | $X^2(1)= 3.03$, $p= .082$ |
| Ethnicity | Non-BME (0) | | | | |
| | BME (1) | 0.31 (0.39) | 1.36 | 0.63 – 2.95 | $X^2(1)= 0.62$, $p= .433$ |
| Wait time | Low (0) | | | | |
| | Average (1) | -0.52 (0.42) | 0.59 | 0.26– 1.34 | $X^2(1)= 1.58$, $p= .208$ |
| | High (2) | -0.47 (0.50) | 0.62 | 0.23 – 1.67 | $X^2(1)= 0.88$, $p= .349$ |
| No. of traumas experienced | Low (0) | | | | |
| | Average (1) | -0.57 (0.64) | 0.57 | 0.16 – 1.99 | $X^2(1)= 0.79$, $p= .374$ |
| | High (2) | 0.51 (0.66) | 1.67 | 0.45 – 6.14 | $X^2(1)= 0.60$, $p= .440$ |
| Trauma related to psychosis | No trauma (0) | | | | |
| | Trauma (1) | -0.89 (0.72) | 0.41 | 0.10 – 1.67 | $X^2(1)= 1.55$, $p= .213$ |

| Variable | Parameter coding | B (SE) | Unadjusted odds ratio | 95% CI | Wald statistic |
|---|---|---|---|---|---|
| Interpersonal trauma | No trauma (0)<br>Trauma (1) | -0.50 (0.62) | 0.61 | 0.18 – 2.06 | $X^2(1)= 0.65$, $p= .421$ |
| PTSD symptoms | No PTSD (0)<br>PTSD (1) | -2.0 (0.66) | 0.82 | 0.23 – 2.97 | $X^2(1)= 0.10$, $p= .758$ |
| Cause- chemical imbalance | Disagree (0)<br>Agree (1) | 0.28 (0.70) | 1.32 | 0.34 – 5.21 | $X^2(1)= 0.16$, $p= .689$ |
| Cause- mental attitude | Disagree (0)<br>Agree (1) | -0.76 (0.60) | 0.47 | 0.15 – 1.50 | $X^2(1)= 1.62$, $p= .203$ |
| Cause- trauma | Disagree (0)<br>Agree (1) | -0.64 (0.57) | 0.53 | 0.17 – 1.62 | $X^2(1)= 1.24$, $p= .265$ |
| Subjective wellbeing | High (0<br>Average (1)<br>Low (2) | -1.32 (1.21)<br>-0.34 (1.16) | 0.27<br>0.71 | 0.03 – 2.86<br>0.07 – 6.89 | $X^2(1)= 1.19$, $p= .275$<br>$X^2(1)= 0.09$, $p= .770$ |
| Work and social functioning | Non-clinical (0)<br>Mild/moderate (1) | -0.85 (0.58) | 0.43 | 0.14 – 1.35 | $X^2(1)= 2.11$, $p= .147$ |

| Variable | Parameter coding | B (SE) | Unadjusted odds ratio | 95% CI | Wald statistic |
|---|---|---|---|---|---|
| | Severe (2) | -0.69 (0.55) | 0.50 | 0.17 – 1.46 | $X^2(1)= 1.62$, $p= .203$ |
| Psychological distress | Non-clinical (0) | | | | |
| | Mild/moderate (1) | -0.73 (0.55) | 0.49 | 0.17 – 1.41 | $X^2(1)= 1.77$, $p= .183$ |
| | Severe (2) | -0.66 (0.57) | 0.52 | 0.17 – 1.58 | $X^2(1)= 1.34$, $p= .247$ |

*Table 3- Binary logistic regression coefficients and statistics*

The models indicated gender was a significant predictor for dropout, with male participants being 2.65 times more likely to dropout than females. No other variable was significant. Combined models were run for variables relating to each category, (demographics, psychological functioning, trauma history and causal beliefs, Appendix J) to ascertain the relative odds of dropout, controlling for interrelationships between these variables. Within these models, gender remained the only significant variable.

# Study 2

Study 2 was a qualitative study which used interviews and focus groups. Qualitative methodologies provide rich data which can be used to further understand individual perspectives on dropout that cannot be easily captured by quantitative measures. This study was conducted in parallel with Study 1 and so the results of Study 1 were not known during data collection for Study 2.

## Method

Prior to data collection, the project received approval from the local Trust's Quality & Audit Team. The authors abided by the Ethical Principles of Psychologists and Code of Conduct as set out by the BABCP and BPS whilst conducting this study. Two focus groups were conducted with therapists delivering CBTp in the EI services. The focus groups were semi-structured, with eight guiding questions (Appendix K). A service user who had completed CBTp with the EI service provided feedback on the questions as part of the development process.

Regarding client interviews, all individuals who had dropped out from CBTp in the EIP services were considered if they remained open to either EIP or the Adult Mental Health Team. To increase the potential sample size, participants were considered

when they had an unplanned ending, regardless of how many sessions of CBTp they had received. Care co-ordinators were approached to discuss the person's suitability for taking part., and if suitable shared the participant information sheet (Appendix L). If the client consented, they were then approached by the trainee psychologist. The interviews were conducted in person or over the phone and lasted 40-60 minutes. The interviews were guided by similar questions to those used for the therapist focus groups (Appendix M).

As qualitative research requires a degree of subjectivity in its interpretation, it is important to note the position of the researcher conducting the main qualitative analysis towards the subject matter. Interviews and the primary analysis were conducted by the main researcher (EG). EG is a trainee clinical psychologist, with no significant relationship with the services other than conducting research. EG had not worked therapeutically with anyone with psychosis or had any direct experience of receiving or conducting CBTp at the time of this research.

## Participants

Two focus groups were conducted with seven clinical or counselling psychologists. They were all female, white British, and ranged in time working for the service from under a year to 16 years.

Figure 1 below shows a flow diagram of client participants. Of 17 eligible participants, eight were approached by the care coordinator and two agreed to be interviewed. When participants were not approached, this was because they were too unwell at the time (4 people), were not engaging with the service as a whole and so could not be contacted (3 people) or were in the process of being discharged (2 people).

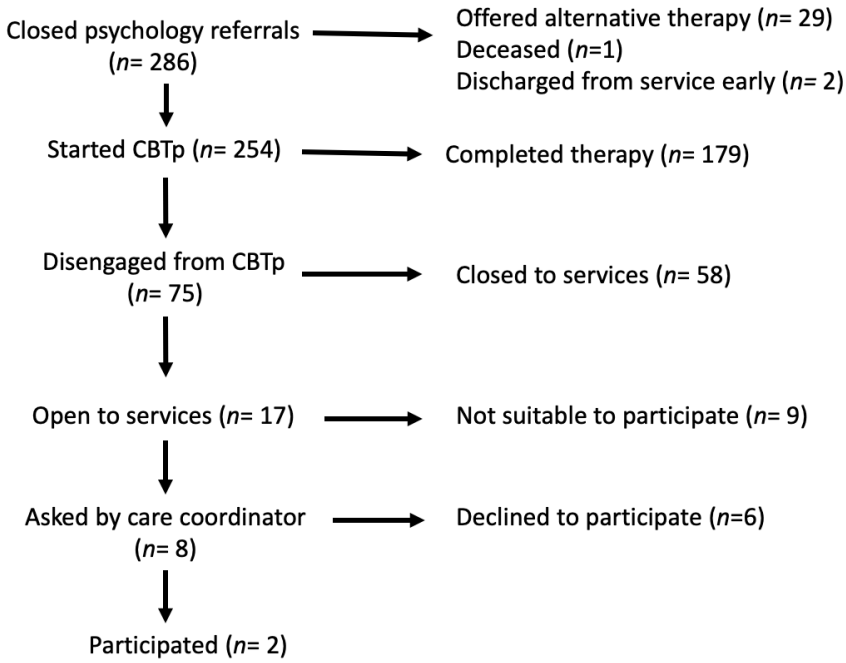



*Figure 1- Participant flow diagram of participants in the semi-structured interviews*

# Results

## Thematic analysis of therapist focus groups

A thematic analysis was used to analyse the therapist data. Thematic analysis is a method of analysing qualitative data which focuses on identifying and interpreting patterns of meaning, or 'themes', within the data. The analysis followed Braun and Clarke's recommended six step process (Braun & Clarke, 2006). Braun and Clarke's checklist of criteria for good thematic analysis was also used to ensure the analysis had been conducted to a good standard.

Data were transcribed by the trainee psychologist (EG) and entered into the NVIVO qualitative data analysis software (QSR International, 1999). The data were read multiple times by EG and initial codes generated from the transcripts. Initial themes were identified from the codes, grouped together and checked for patterns. The original transcripts were then re-read to identify any further data that could be coded

for these themes. Themes were refined iteratively until a final set was established. To reduce risk of bias, the analysis was checked by the research supervisors (LJ and CS) to ensure agreement on themes identified.

Content was drawn into two overarching themes- personal factors and therapy factors. Figure 2 shows the theme and subtheme diagram. Appendix N contains quotes used to demonstrate the themes identified.

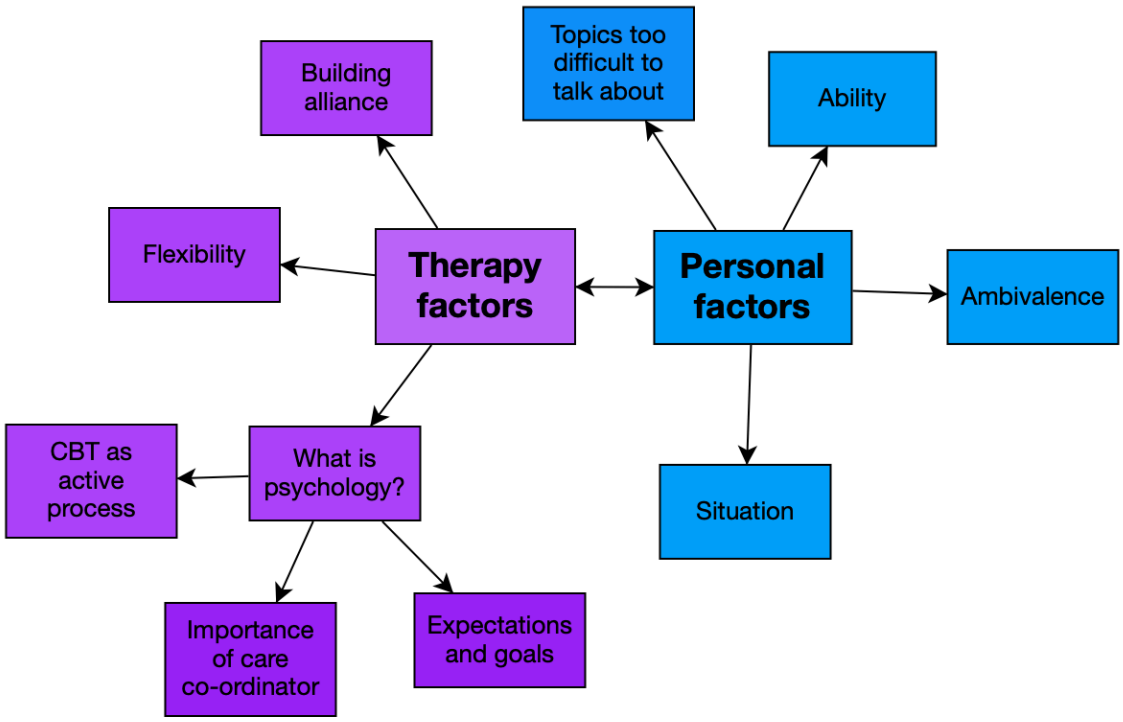



*Figure 2- Theme diagram from thematic analysis of therapist focus groups*

**Therapy factors**

*Building alliance*

Therapists spoke here about normalising, building trust, demonstrating that therapy can be effective through the use of 'quick wins' and the therapist using a non-judgmental and non-confrontational stance. Therapists reflected on similarities and

differences between themselves and their clients in terms of building the therapeutic relationship. Differences of gender and age were particularly spoken about. Some therapists felt that young, male clients were particularly likely to not engage. However other therapists felt that broad demographics were not predictive. Therapists felt that a good therapeutic relationship was a strong buffer against dropout.

*Flexibility*

Both focus groups spoke about service flexibility as being an important factor for continued engagement of clients. Clients could be seen at different times, places and lengths of session, which was felt to aid engagement. However, there is less flexibility around waiting lists. Therapists noted that clients cannot be moved up the waiting list if they are ready for therapy when they first assessed, due to lack of capacity in the service, and some choose to be discharged rather than waiting for therapy.

*What is psychology?*

Therapists noted that clients often come to psychology unclear about what therapy will involve and with unclear expectations and goals. The care co-ordinator was identified as crucial in helping the client to know what to expect from psychology. Some expectations discussed as potential barriers were expecting psychology to be a 'miracle fix' and not understanding the active nature of CBT. Unclear or unrealistic goals were also identified as potential problems. However, it was also noted that goals can be developed during treatment and this can be a collaborative process between therapist and client.

**Personal factors**

*Topics too difficult to talk about*

Discussion here spoke about stigma, the difficulty of speaking about past trauma and client's fears of making things worse. Therapists described the perceived difficulty

involved in discussing topics of importance to the client without the conversation feeling overwhelming or emotionally uncontained. Some therapists spoke about how at the start, the focus of therapy may be on 'safer' topics, such as sleep rather than on topics such as voices which may be perceived as more 'dangerous' by the client in terms of potential negative outcomes such as rehospitalisation or judgment by the therapist. Navigating this balance was identified as a challenge of delivering CBTp.

*Ambivalence*

Here therapists spoke about therapy not feeling relevant for clients or the people around them, about clients not wanting anything to change, perhaps because they feel they have got better 'enough', or not feeling that therapy can be effective.

*Ability*

This discussion focused on clients' skills and aspects of their mental health that may make therapeutic engagement harder. Factors discussed included cognitive deficits, lack of organisation skills and ongoing mental health problems such as paranoia. These might prevent the client from being able to create a shared understanding with the therapist about therapy and how it might be helpful. If these factors prevent an individual from being able to attend sessions or understand and retain information from sessions, it is understandable that they might be at higher risk of dropout.

*Situation*

This theme focused on client's external context, such as whether their life was busy or unstable, which may prevent the client from fully engaging in therapy or interfere practically with the client's ability to remember and attend therapy appointments. Related to this, therapists also reflected on the timing of the therapy offer. Therapists noted that an individual may not be at the right time in their life for therapy, either due to external circumstances or due to their psychological functioning. As such, the timing of when a client feels ready for therapy and when the service is able to offer therapy may not always be aligned.

**Connections between themes**

The two overarching themes of personal and therapy factors are connected by a two-way arrow, reflecting the expectation that there is a bidirectional relationship between them, and each influences the other at different stages of the therapy process. For example, initial ambivalence of the client towards therapy may be modified by function of how the therapy is described or the quality of the therapeutic relationship. The emotional intensity perceived is both due to a personal reaction to the conversation, and a function of the conversation topic itself. It is therefore important to interpret and consider these factors not in isolation but within a therapeutic context.

## Descriptive analysis of client interviews

Only two clients were interviewed and therefore thematic analysis was not appropriate as the sample size did not reach minimum recommended thresholds (Braun & Clarke, 2013). Instead, the interviews are summarised below, without formal analysis.

Interviews were conducted with a male in his 30s and a female in her 20s. The male, 'Carlos', had an assessment for psychology two years prior and had decided not to continue with therapy. The female, 'Lucy' had eight sessions of a low intensity CBT based intervention and then did not wish to continue with full CBTp. She has recently started CBTp a few months following her initial disengagement

Supplementary quotes are included in Appendix O. Briefly, the interviews can be summarised as each focusing on three main ideas, 'timing,' 'content' and 'emotional intensity'.

**Lucy**

*Timing*

Lucy described CBTp as an active therapy that she struggled to balance alongside exams. Additionally, travel to therapy sessions was time-consuming and challenging for her schedule. Her current therapy is better timing as she has fewer external pressures. She is also having her current therapy digitally, which is beneficial in terms of reducing travel time. Lucy also spoke of how she waited a year after entering the service to start therapy and found it challenging to manage her stress and anxiety during this time. She researched resources online which she found helpful, and wondered the service could signpost to online resources, as in the beginning she felt overwhelmed and fearful of searching for topics around psychosis.

*Emotional intensity*

Lucy reflected that at the time of therapy she was in an emotionally fragile place and would cry often during therapy. She wondered whether she steered away from emotional topics due to this. She noted that online therapy is helpful as it provides a sense of distance, enabling her to feel safer when discussing emotional topics.

*Content of therapy*

Lucy described feeling conflicted regarding which topics she would have found helpful to discuss in therapy. She felt there was little focus on psychosis in the therapy, and more on coping skills and worry. Lucy reflected that in some ways this was helpful, as speaking of psychosis may have been too upsetting, but in other ways it would have been more meaningful to speak of the psychosis symptoms themselves. Lucy concluded that a balance would be best between coping skills and a deeper exploration into the psychosis.

**Carlos**

*Timing*

Carlos had a psychology assessment whilst in a psychiatric hospital. Carlos spoke of repeated assessment from medical professionals as being tiring and emotionally draining. This made him less keen to engage with psychological therapy at this time. Carlos thought that if he had been offered therapy again when not in hospital that he might have engaged better with it.

*Emotional intensity*

Carlos spoke of the emotional intensity of the assessment, particularly within the context of his mental health at the time of hospitalisation. He described speaking of his problems as painful and when given the opportunity to decline therapy did so. He wondered if now he is more stable, he might find therapy more beneficial.

*Content of therapy*

Carlos also spoke of the content of the assessment, and particularly a moment where he was given advice that he perceived as unwelcome. Carlos reflected that this advice was probably the right advice but given at the wrong time and therefore he could not take it on board. He also felt that if the psychologist had known him better, then the advice may have been better received.

## Suggestions for improvements from interviewees

During each interview, participants were asked whether there was anything the therapist or service could do to improve engagement in therapy. The suggestions made are included in Table 4.

| Source | Recommendation |
|---|---|
| Focus group 1 | Use care co-ordinators or other people in the system to get feedback from clients who are struggling to engage, as it can be difficult to give feedback directly to the psychologist |
| Focus group 1 | Ask for permission from clients at the beginning of therapy to contact them after therapy ends to ask about their experience of therapy. |
| Focus group 2 | Increase flexibility of when therapy is offered- particularly being able to bring it forward if person is ready for therapy sooner |
| Focus group 2 | Help to get people ready for psychology. For example, by training the care co-ordinators in how to explain therapy, offering a pre-therapy group or using resources such as leaflets explaining CBTp more routinely. |
| Focus group 2 | Do cognitive work prior to CBTp for those with cognitive problems which might interfere with engagement |
| Lucy | Continue to offer virtual therapy as an option as some find it easier in terms of organisation and emotional intensity |
| Lucy | Share resources with clients for self-help with their mental health whilst they are on the waitlist for therapy |
| Carlos | Offer therapy multiple times if possible, to account for individuals potentially changing their mind about wanting therapy |
| Carlos | Reduce the number of professionals asking similar questions in a short time frame |

*Table 4- Recommendations for improvement from participants in the qualitative interviews*

## Conclusions

From the therapist focus groups and client interviews, a number of themes were identified regarding the process of dropout from CBTp. Shared themes across both data sets include the topics discussed within therapy, timing, and the emotional intensity of the therapeutic relationship and content.

Interviewees were able to identify a number of concrete recommendations, often related to the themes discussed within the interview. Carlos' suggestion of therapy being re-offered is something that should be standard practice within the service. It is not clear whether this was the case for Carlos, however his comment demonstrates that not all clients understand they have the option to re-enter therapy following an initial disengagement.

# Discussion

This mixed-methods study investigated the predictors of dropout from CBTp in two EIP services. The quantitative analysis indicated that dropout was associated with gender, with males twice as likely to disengage from treatment as females, matching previous findings (Lecomte et al., 2008). Other factors were not predictive of disengagement, and so clients' psychological wellbeing, trauma history or causal beliefs should not be a barrier to their receiving psychological treatment.

The qualitative study allowed for a richer discussion regarding reasons for disengagement. A number of possible factors were identified from the therapist focus groups, such as attitude towards psychology, personality factors and the content of therapy. Client accounts, although not formally analysed, raised broadly similar themes to the therapists regarding the emotional intensity, timing and content of therapy.

It is noted that the factors identified as important within the qualitative study are not reflective of what was measured within the quantitative study. It may be that some factors can be measured more directly in future studies to identify whether they systematically predict dropout, such as the perceived emotional intensity of therapy or understanding of what psychology involves.

## Limitations

A key limitation of the study is the small number of client participants. Despite all eligible potential participants in the services being considered, only two were eligible and agreed to take part in the project. Therefore, the data could not be formally analysed. Recruitment for this study also occurred during the first few months of the COVID-19 pandemic. During this time there was increasing pressure and uncertainty on both the service and the patients held within the early intervention services. This may also have impacted the uptake of this research.

Additionally, due to data protection requirements, service users were approached to take part in this study via their care co-ordinators. This therefore meant that individuals with a less positive or less engaged relationship with their care co-ordinator or the service as a whole were unlikely to take part in the study. In the future, being able to approach clients directly as an independent researcher rather than recruiting via a member of the service such as the care co-ordinator may make clients feel more comfortable and willing to take part in the project.

It is also important to note that those who were included in this study were inherently chosen only from those who entered CBTp. The voices of individuals who do not access services at all, for example those who are diverted into the criminal justice system, a phenomenon disproportionately affecting those of black and ethnic minority backgrounds (Bhui et al., 2015) will not be included in this study. Additionally, those who are in the early intervention service but do not accept CBTp, for example due to differing beliefs about psychosis (Freeman et al., 2013), lack of time to attend

appointments due to work or caring responsibilities or those who choose to leave the service rather than waiting for psychological therapy will also not be included. This should be borne in mind when thinking about the results of this paper.

Additionally, both the quantitative and qualitative studies assumed that the therapy was being delivered as standard and did not consider any variation in therapy delivery as a potential predictor. If therapy was delivered in a significantly different way between clients, this may have had an impact on engagement that was not recognised within the quantitative analysis. This is also unlikely to be raised in the qualitative interviews as each individual is speaking from their own experience. However, CBTp is a manualised treatment and all therapists who deliver CBTp within the EIP services are specifically trained and supervised within this model, thus reducing the risk of significant variation between therapy delivery. Nonetheless, this should be borne in mind when interpreting the studies.

## Service recommendations

The quantitive analysis showed that males were more likely to dropout from CBTp. In the focus groups, some therapists wondered whether there was more of a mismatch between young, male clients and the therapists. There is a male therapist in each team and so it may be that male therapists are more able to engage male clients than female ones due to perceived similarities. The dataset was not large enough to analyse this here. Alternatively, it may be that other identified factors such as ambivalence or ability are more relevant for male clients. Improvements in addressing these factors would then indirectly improve the gender imbalance in therapy dropout.

Additional recommendations can be made regarding preparation of individuals for therapy. Therapists noted that care co-ordinators had received teaching on CBTp and that there are in-house leaflets which explain CBTp, however the use of these leaflets and the conversations held between care co-ordinators and clients may be variable.

Updated training and consistent use of written materials may help clients know what to expect from CBTp. Additionally, a brief pre-therapy intervention could be offered to help individuals understand what therapy will involve and do some of the initial work such as goal development. This recommendation is reliant upon additional resources within a resource limited service, but some degree of formalised pre-therapy conversation may be helpful to improve engagement.

A third set of recommendations may be around maximising flexibility. Although EIP services are already more flexible than most, it may be that explicit conversations with clients regarding topic, length, frequency and medium of sessions may allow for the individual to have greater control over their therapeutic experience, making it easier to manage emotionally and practically.

An additional theme was around ensuring that therapy was offered at a time when the client was best able to engage with it. Although therapy can often be offered later, there is limited flexibility regarding offering therapy earlier and this can lead to clients choosing to be closed to the service rather than waiting for psychological therapy or feeling unsupported whilst on the waiting list. This issue reflects limited capacity and resourcing and therefore being able to see clients earlier may require additional therapists to be employed to provide extra flexibility to the system.

Recruitment for this study was challenging. In the future, consent could be sought routinely for individuals to be followed up for service evaluation purposes after they are closed to services. In the case of this research, this would have increased the possible sample size from 17 to 75. This would enable the service to gather routine feedback from those who have disengaged from therapy much more easily. As satisfaction data is currently collected mainly from those who have completed therapy, improving the ability to follow-up those who did not engage would allow the service to have a deeper understanding of the views of all clients.

Additionally, it can be hard to get accurate feedback from individuals who are struggling to engage in therapy, as it may be interpersonally challenging to give

negative feedback directly to a clinician in a position of power. Instead, other staff such as care co-ordinators may be used to seek immediate feedback from clients. This could be explicitly integrated into a CPA (care plan approach) review or routinely asked during individual conversations with the care co-ordinator. This would allow for clients' views on therapy to be heard in a timely way.

In conclusion, the Buckinghamshire and Oxfordshire EIP services are generally engaging most individuals in CBTp. There are a number of recommendations that might be implemented to maximise engagement. These recommendations will be taken forward by the psychology steering group, which spans both services.

**Key Practice Points**:

- Men appear to be significantly more likely than women to dropout from CBT for psychosis. Therapists may want to consider this when engaging a new client in therapy.
- Psychological factors and trauma history do not appear to impact dropout and therefore should not be barriers to offering CBTp.
- Offering treatment at a practically and psychologically optimal time may prevent dropout.
- Realistic expectations for CBTp prior to treatment commencement may also prevent dropout.

**Further Reading:**

- Essential ingredients of engagement when working alongside people after their first episode of psychosis: A qualitative meta-synthesis (Tindall et al. 2018)

- A systematic review examining factors predicting favourable outcome in cognitive behavioural interventions for psychosis (O'Keefe et al. 2017).

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# Main Research Project

## Modifying appraisals of control in carers of people with a first episode of psychosis: Development and piloting of a digital intervention.

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**Word count:** 4986 (excluding references and appendices)

**Internal supervisor:** Professor Craig Steel

**External supervisor**: Dr Louise Johns

**Target journal**: This paper is targeted towards the British Journal of Clinical Psychology as this journal publishes original empirical research on all aspects of clinical psychology, including experimental studies and studies of psychological interventions and treatments as described here.

# Embedded Abstract

**Background:** Appraisals of psychosis in carers of people with first episode psychosis have been linked to a number of health outcomes. Appraisals of control, how much a carer believes they can affect the mental health of the person with psychosis, have been associated with positive outcomes, however no study thus far has attempted to demonstrate this link causally.

**Aims:** This study aimed to develop and test an online module to modify appraisals of control in carers of people experiencing a first episode of psychosis. This pilot study focuses on the development and initial testing of the module, ahead of potential future studies to investigate causal links between changing appraisals and positive psychological outcomes.

**Method:** An online module was developed alongside carer representatives. This was piloted on 3 participants and then tested on a sample of 10 participants using a consecutive, phasic, case series design, taking daily measures of illness perceptions.

**Results:** The results showed that the module was broadly acceptable to participants, but that it is likely to be more useful to individuals earlier in their experience of caring for someone with psychosis. The module did not lead to a significant shift in any measure of illness perceptions.

**Conclusion:** Further testing is needed on this module in order to understand how it impacts illness appraisals. Testing in a larger sample, closer to the onset of psychosis is likely to be a useful next step.

# Introduction

Carers, defined here as anyone who 'looks after a family member, partner or friend who needs help because of their illness, frailty, disability, a mental health problem or an addiction and cannot cope without their support' (NHS England, 2019), are an important resource. Having a supportive carer relationship is linked to better treatment adherence, gains from psychological therapy, and reduced admission and relapse rates (Coldham et al., 2002; Garety et al., 2008; Norman et al., 2005). However, this population experiences high levels of stress, stigma and loss (Patterson et al., 2005; Sadath et al., 2017; Wong et al., 2009) as well as being more likely to develop their own mental health problems such as depression and post-traumatic stress symptoms (Hamaie et al., 2016; Kingston et al., 2016). Consequently, there is increasing focus on providing support and interventions to improve carer wellbeing and relationships within the first episode psychosis population (e.g. Onwumere, Jansen, & Kuipers, 2018).

The Cognitive Model of Caregiving in Psychosis (Kuipers, Onwumere, & Bebbington, 2010), identifies the carer's appraisal of the psychosis as a key component of their response to the psychosis, influencing cognitive and affective changes and through this impacting on their relationship with the service user (See Fig 1). As such, we may expect specific carer appraisals of psychosis to influence factors such as the carers own wellbeing and the relationship between the carer and service user. Psychosis is a broad term and refers to a wide range of symptoms associated with different conditions such as schizophrenia and bipolar disorder. Due to the grounding of this study in illness perception theory, and in keeping with language used in other literature in this area, the word 'illness' is used to describe psychosis in this study.

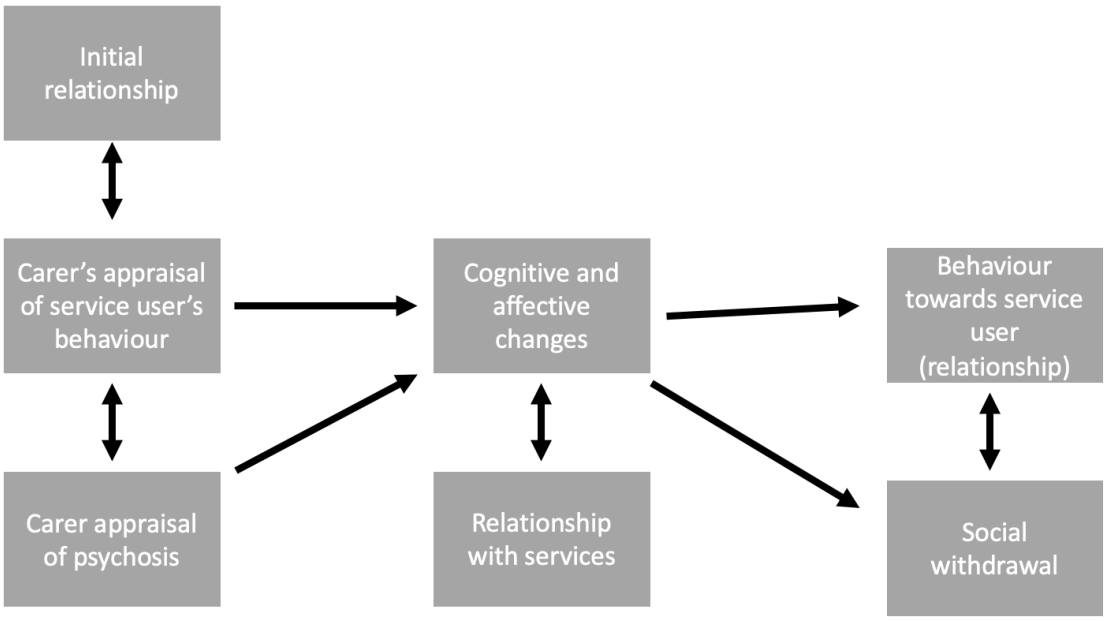



*Figure 1- The cognitive model of caregiving in psychosis. Recreated from Kuipers, Onwumere, & Bebbington, 2010*

Illness perception theory (Weinman et al., 1996) is one way of conceptualising appraisals of illnesses, and suggests that how people perceive an illness, impacts mood, understanding and behavioural outcomes such as treatment adherence and recovery (see Petrie, Jago, & Devcich (2007) for a review). It is based on Leventhal's self-regulatory model, which identifies the importance of illness beliefs in five domains; the illness' i) identity and nature; ii) cause; iii) likely duration; iv) consequences and v) whether and how the illness can be controlled. Illness perception theory was originally developed for physical health conditions, but more recently attention has turned to its use for mental health problems, such as psychosis. The fifth of Leventhal's domains, whether and how symptoms of the illness can be controlled, is the focus of the current study, as it is one of the domains that frequently and consistently links to positive outcomes in this population.

A number of studies have investigated carer control beliefs in psychosis. Specifically, this is the appraisal that the mental health problem or its consequences can be impacted for the better by the carer of the person with mental health problems. Carers with higher appraisals of their own control have more positive appraisals of caregiving (Onwumere et al., 2008), show less criticism towards their relative and have less negativity expressed towards them by their relative (Barrowclough, Lobban, Hatton, & Quinn, 2001). They also show lower hostility towards their relative (Barrowclough & Parle, 1997), experience less burden (Patel et al., 2014; Perlick et al., 1999), and have a greater expectation for positive impact of treatment and a greater understanding of the problem (Lobban et al., 2005).

The studies investigating beliefs of carer control have thus far been correlational. Correlational studies can show an association between these beliefs and positive outcomes, however it provides no information on causation. It may be that higher control beliefs lead to positive outcomes such as experiencing less burden, or that carers who naturally feel less burden develop higher beliefs of control, or that both variables are affected by a third factor such as symptom severity, and do not influence each other at all. In order to understand this relationship, and whether illness appraisals constitute a causal mechanism influencing outcomes, as indicted in the cognitive model of caregiving in psychosis, a causal interventionist paradigm can be used.

Causal interventionist paradigms are focused intervention procedures used to understand causal mechanisms within a clinical area. In this approach, causation is evidenced by manipulating the hypothesized causal mechanism, in this case, illness appraisals, and examining the effect on the symptom of interest (Kendler & Campbell, 2009). Causal interventionist paradigms have been used to understand mechanisms of change within clinical areas such as psychosis (Freeman, 2011) and PTSD (Brand et al.,

2017). This approach provides both increased theoretical evidence for the relationship between factors within a cognitive model, and later the creation of specialised treatments which modify these causal factors in order to influence outcomes (Clark, 2004).

As such, this study involved developing a brief online e-learning programme for carers of people with first episode psychosis, intended to modify appraisals of carer control. Brief interventions have been shown to be able to modify illness perceptions in both this population and others (Onwumere et al., 2018; Petrie et al., 2002, Hazell et al., 2020), and are more accessible to people who are less able to commit significant amounts of time. Online interventions for mental health problems have been an area of much interest in the last few years (Cotton, 2019; Foley & Woollard, 2019). They allow for rapid and economical delivery of treatments to clients and are not limited by geography or clients' ability to attend a clinic. Additionally, online interventions reduce the variability between participants more so than if delivered as a face-to-face therapeutic session. Other studies within this population have used digital interventions successfully to influence outcomes such as coping, wellbeing, expressed emotion and depression (Lobban et al., 2020; Ozkan et al., 2013; Sin et al., 2020), however none so far have commented on illness appraisals as a mechanism of change for these outcomes. As such, there is a gap for a digital intervention specifically focusing on the modification of illness appraisals within this population.

In developing the intervention, the Medical Research Council (MRC, 2019) complex interventions development guidelines were followed. These suggest that best practice is to develop interventions systematically, using appropriate evidence and theory, supplemented by primary research such as interviews with stakeholders. Then interventions should be tested using a carefully phased approach, starting with a series of pilot studies targeted at each of the key uncertainties in the design, before

moving on to an exploratory and then a definitive evaluation. The focus of the current study was to develop the intervention and then test the primary uncertainty- the ability of the intervention to modify the identified illness appraisal. Additionally, this study evaluated the intervention's acceptability, recruitment rate and retention as recommended by the MRC guidelines.

In conclusion, this is one of the first studies to examine whether illness beliefs can be modified in carers for people with psychosis, and the first to look at specific modification of an illness appraisal using an online intervention. It builds on correlational designs that have identified relationships between control beliefs and psychological distress and aims to increase carer control beliefs within carers for people with psychosis. If successful, this intervention could then be tested to see whether modifying illness appraisals leads to cognitive, affective and behavioural changes as suggested by the cognitive model of caregiving in psychosis.

## Development of the intervention

The first phase of the project was development. Approval for the project was received from the local Trust's Quality & Audit Team (appendix Q). Figure 2 below shows the steps in the development process.

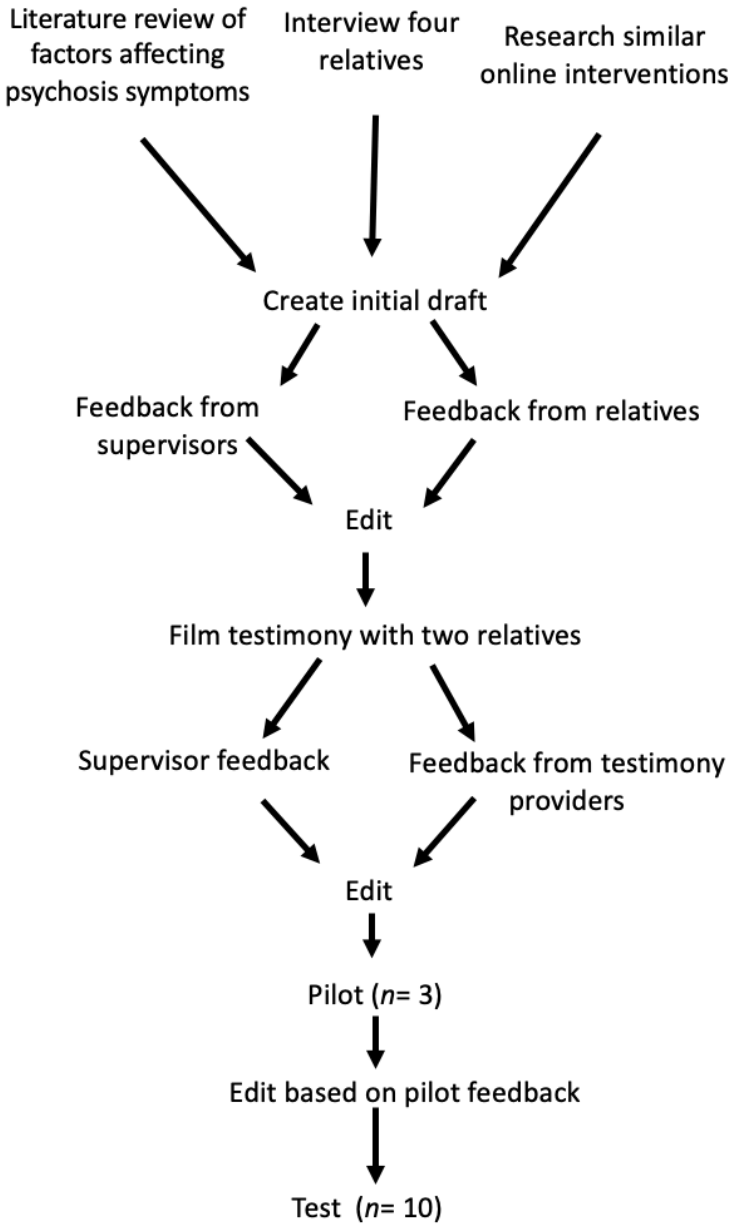



*Figure 2- Stages of developing and testing the intervention*

Initially, four relatives were recruited as consultants and interviewed regarding their views on what content they would have found useful in a module such as this. They were three parents and one partner of the person with psychosis, three were female and one male and three were White British and one was Asian. Their relative had been open to the early intervention team for 8, 9, 16 and 32 months respectively. A semi-structured interview was used, and the guiding questions are included in appendix R.

Detailed notes were taken and were reviewed by the primary researcher. Table 1 below includes a summary of the key messages raised by the consultants.

| Consultant | Comment |
|---|---|
| Consultant 1 | It is important to recognise when you need outside help and seek it proactively. |
| | Over time you can learn the person's triggers and help and implement their coping strategies or steer them away from triggering situations. |
| | Remember you know the person best- you're in the best position to help them, you just need to learn how. |
| | You can work as an advocate for the person in the health system- speaking up for them when they find it challenging or articulating things they might not be able to. |
| Consultant 2 | You might need to change the way you are with your family member for a while- for example, being around more and checking in more often. |
| | Find out what you can about psychosis in a rate you can take it in- it was less scary when I understood it better. |
| | I found it useful to offer a regular space to my family member to talk if they wanted, but without forcing it. |
| | Hearing others' experiences would have been really helpful- knowing we were not the only ones going through this and knowing things could get better. |
| Consultant 3 | Self-stigma can be very challenging. It can be hard to share what is happening to your family member and find others in a similar position. |
| | I am now doing more with my family member as they have lost a lot of confidence whilst they have been ill. I've had to change my expectations for them for a while. |

| | |
|---|---|
| Consultant 4 | Your ability to cope depends on your own respite. |
| | It is important to go at your family member's pace in terms of their recovery. |
| | I found it helpful to focus on developing my own coping strategies and encouraging family member to find and develop their coping strategies. |

*Table 1- Key messages from initial consultation with carers of people with first episode psychosis*

Parallel to these interviews, literature searches were carried out. These included searches on relevant academic databases for papers on how to modify appraisals of mental health problems, psychosocial online interventions for carers, and on factors that influence psychosis symptoms. The MRC complex interventions guidelines (Medical Research Council, 2019) suggest interventions should draw on the existing evidence base, ideally by carrying out a systematic review or using a recent review relevant to the intervention. As a full systematic review of the literature was beyond the scope of this project, reviews were utilised such as Corrigan et al. (2001), on strategies to modify appraisals of severe mental illness, Goulding et al., (2010), a review of interventions to modify illness appraisals and Lobban, Postlethwaite, et al., (2013), a review of interventions for relatives of people with psychosis.

From the literature review and the consultant interviews, the programme was created, built around three core messages. The first message used in the online programme was the stress-vulnerability hypothesis of psychosis (Zubin & Spring, 1977). This suggests that symptoms of psychosis can be exacerbated or reduced in relation to environmental triggers. The well-established metaphor of a stress bucket (Brabban & Turkington, 2002) was used to demonstrate this hypothesis. This metaphor purports that everybody has a bucket that can hold a certain amount of stress. Environmental

stressors increase the stress in the bucket and coping strategies decrease it. When the stress bucket overflows this can lead to outcomes such as anxiety, crying, low mood, anger or an increase in psychotic experiences such as voice hearing. Participants were encouraged to identify stressors and coping strategies in relation to their relative's stress bucket and identify ways in which they may support their relative to decrease stressors or increase coping.

The second core message of the module was based around expressed emotion. Expressed emotion is a well-established concept of communication intensity, such as hostility, critical comments and emotional over-involvement as being related to poorer relational and mental health outcomes (Butzlaff & Hooley, 1998). Within this section, participants were encouraged to reflect on any negative communication patterns they had noticed between them and their family member and any potential ways in which they might be able to modify these.

The third core message of the module was framed around self-care. This message used the 'Oxygen mask' metaphor that one is instructed in airplanes to always apply one's own mask before aiding others. This was related to the idea that if you are not able to support your own wellbeing and mental health, it is very challenging to support someone else's. Key messages here were around self-compassion and identifying personal coping strategies.

Following the initial development of the module, feedback was sought from supervisors (two clinical psychologists with extensive experience working with psychosis) and from the four consultants. Their feedback was integrated, and audio testimony was then recorded from two relatives who each provided their personal responses to a number of prompt questions relating to the content of the module

(Appendix T). The consultants who provided their testimony were a mother speaking about a family member who's relationship to her she did not disclose, and a father speaking about his son. Both spoke about their emotions when their relative was first disgnosed with psychosis and the strategies that they found useful to support their relative with their 'stress bucket', to communicate effectively with their relative, and self-care strategies. Following this, feedback from all involved was sought and integrated again.

The module can be accessed at psychiatryoxford.qualtrics.com/jfe/form/SV_881rw9O0R6tR29E and is delivered via the online platform Qualtrics. It includes written material on the three topics detailed above, the two audio testimonies from the carer consultants, pictures, questions for the participant and response boxes about their reflections on the material, and two additional written case examples illustrating the different topics. This included the story of a father and son who developed psychosis following a stressful period of bullying and exams at school,

and a couple in which the female developed psychosis whilst experiencing a stressful period at work. Appendix U includes some example pages of the module.

## Design

The study was conducted using a consecutive, phasic case series design (Grünke et al., 2015; Kratochwill & Levin, 2010a; Morley, 2018). A case series design was chosen as a way to gather rich data from a small sample. An advantage of case series designs is that they satisfy the criteria of experimental randomization and internal validity without the large numbers of participants required by parallel group designs (Medical Research Council, 2019).

The consecutive, phasic design involves a series of single-case experimental designs across a number of participants. Participants were asked to complete a measure of illness appraisals each day for 10 days. The participants were assigned using a random number generator to a differing lengths of baseline measurements, chosen to allow at least three timepoints both before and after the intervention in alignment with the What Works Clearinghouse standards (Edgington & Onghena, 2007; Kratochwill & Levin, 2010b).

The objectives and hypotheses of the study were:

*Objectives-*

- Uptake for the study will be broadly in line with uptake for interventions generally in this population.
- Participants will engage in the intervention and will complete the requested outcome measures.
- The intervention will be considered helpful and acceptable by participants.

*Primary hypothesis-*

- The intervention will cause a significant increase in the relative's control aspect of illness perceptions following the intervention

*Secondary hypothesis-*

- The intervention will not cause a significant increase in the other aspects of illness perceptions.

# Method

## Participants

Participants were recruited from the Early Intervention in Psychosis (EIP) services in Oxfordshire and Buckinghamshire. Inclusion and exclusion criteria were the following:

Inclusion criteria

- Person with psychosis is open to the EIP service.
- Participant supports the person with psychosis for 10 or more hours per week.
- Participant is aged 18 years or over.

Exclusion criteria

- The family is currently receiving behavioural family therapy (BFT) through the EIP service.

The exclusion criterion was used as the mechanisms of change within BFT may have been influencing views on psychosis for relatives independently of the project described here. No formal exclusion was made on the basis of other forms of informal carer support offered by the service, and so carers may have been attending a regular peer support meet-up arranged by the Buckinghamshire EI service or may have been having informal support from their relative's care co-ordinator at the same time as project. This is not systematically recorded by the services and so the numbers of carers accessing this support cannot be commented on. Initially, participants were only sought who had entered the EIP service in the last 12 months, however due to recruitment difficulties this was expanded.

## Materials

The following questionnaires were used in the study:

*Demographics (Appendix V)*- including age, gender, ethnicity, relationship to person with psychosis, and length of time since the individual developed psychosis.

*Brief illness perception questionnaire (Appendix W)*- This is a brief 16 item questionnaire (Brief IPQ-R, Lobban et al., 2020, in press) which asks participants to rate a number of statements on a scale of 0-10, corresponding to each of the identified factors of illness perception.

The Brief IPQ-R is a version, shortened by the original authors, of the illness perception questionnaire for schizophrenia: Relatives' version (IPQ-S Relatives, 2005), a 147-item questionnaire that comprehensively assesses illness perceptions but contains too many items to be used as a daily measure. The concepts measured on the Brief IPQ-R are shown in Table 2 below.

| Question | Concept measured |
|---|---|
| 1. Consequences- patient | How significant the consequences of the mental health problem are for the patient |
| 2. Consequences- relative | How significant the consequences of the mental health problem are for the relative |
| 3. Timeline (acute/chronic) | Whether the mental health problem will have an acute or chronic course |
| 4. Control- patient | How much can the patient affect the mental health problem |
| ***5. Control- relative*** | ***How much can the relative affect the mental health problem*** |
| 6. Coping | To what extent the relative feels able to cope with the mental health problem |
| 7. Control- treatment | How much can treatment affect the mental health problem |
| 8. Identity (symptoms) | Which symptoms of psychosis has the patient experienced |
| 9. Concern | How concerned the relative is about the mental health problem |
| 10. Effort- patient | How much effort the patient is making to get well |
| 11. Effort- Relative | How much effort the relative is making to help the patient get well |
| 12. Cause | How much the mental health problem is caused by the patient's own behaviour |
| 13. Blame- patient | Blame towards the patient for the mental health problem |
| 14. Blame- relative | Blame towards the relative for the mental health problem |

| | |
|---|---|
| 15. Coherence | How much the relative understands the mental health problem |
| 16. Emotional representation | Emotional response to the patient's mental health problems |

*Table 2- The concepts measured by the Brief IPQ-R*

The subscales of the IPQ-S Relatives have acceptable internal consistency, inter-item correlations and test-retest reliability. There are low numbers of significant inter-subscale correlations, with no inter-subscale correlation higher than 0.7 indicating the subscales are measuring distinct dimensions of illness beliefs which may be independently targeted.

*Feedback questionnaire (Appendix X)*- This included a mix of qualitative and quantitative questions about participant's experience of the programme, the extent to which it made them think and plan to behave differently towards their family member and their own self-care, whether they would recommend the module to others, and suggestions for improvement.

## Piloting

Prior to full data collection, the programme was piloted on three participants. The aims of piloting were to:

- Gather feedback regarding the content, length and technical functioning of the programme.
- Measure Brief IPQ-R beliefs before and after the programme to identify whether it was modifying illness appraisals.

The materials used were the same as for the full study, as were the inclusion and exclusion criteria for participants. Rather than data collection for 10 days, only one

timepoint was used with participants completing the demographics questionnaire, Brief IPQ-R, the module, the feedback questionnaire and Brief IPQ-R again in a single sitting.

## Results

### Demographics

Pilots were two males and one female. Their ages were 25, 46 and 55 and they were all White British. The relationship to the person with psychosis was 2 parents and 1 partner. The length of time since their family member had developed psychosis was 0-3 months for two participants and 6-12 months for one participant.

### Change score

Table 3 shows the average scores for the three pilots for each of the questions on the Brief IPQ-R. In order to compare and combine data more easily, in both the piloting and full case series, scores were reversed for all items expected to decrease following the intervention, so that higher scores always indicated a more positive score. The reversed items were consequences, timeline, control-patient, identity, concern, cause, blame and emotional representation.

| Question | Baseline (M, SD) | Post-intervention (M, SD) | Change score (M, SD) |
|---|---|---|---|
| 1. Consequences- patient | 3.33 (2.52) | 3.67 (2.31) | 0.33 (1.53) |
| 2. Consequences- relative | 4.00 (2.65) | 5.33 (1.15) | 1.33 (2.08) |
| 3. Timeline (acute/chronic) | 4.67 (4.04) | 5.67 (5.13) | 1.00 (1.15) |
| 4. Control- patient | 3.00 (1.00) | 4.67 (1.530 | 1.67 (1.15) |
| ***5. Control- relative*** | ***4.33 (1.15)*** | ***7.00 (1.00)*** | ***2.67 (2.08)*** |
| 6. Coping | 5.33 (2.52) | 7.00 (1.00) | 1.67 (1.53) |
| 7. Control- treatment | 8.67 (1.53) | 9.33 (1.15) | 0.67 (0.58) |
| 8. Identity (symptoms) | 3.00 (1.00) | 5.67 (3.06) | 2.67 (3.79) |
| 9. Concern | 1.00 (1.730 | 1.00 (1.73) | 0.00 (0.00) |
| 10. Effort- patient | 9.00 (1.73) | 9.00 (1.73) | 0.00 (0.00) |
| 11. Effort- Relative | 8.67 (2.31) | 7.67 (2.08) | -1.00 (1.73) |
| 12. Cause | 7.67 (2.52) | 8.33 (1.53) | 0.67 (2.08) |
| 13. Blame- patient | 9.33 (1.15) | 9.00 (1.73) | -0.33 (0.58) |
| 14. Blame- relative | 7.33 (2.52) | 7.33 (2.52) | 0.00 (0.00) |
| 15. Coherence | 5.00 (3.00) | 8.00 (1.00) | 3.00 (3.61) |
| 16. Emotional representation | 2.33 (0.58) | 2.67 (1.15) | 0.33 (0.58) |

*Table 3- Change scores on the Brief IPQ-R for pilot participants*

Table 3 shows that the module appeared to changing the relative's control question as intended. There also appeared to be shifts on some other questions, however not all, suggesting a degree of specificity. Most items that showed change did so in the expected direction, other than small negative shifts in the Effort-relative and Blame-patient items. Although this sample size is very small and cannot be used to draw statistical conclusions, these results indicated the resource was appropriate for further testing.

## Feedback

Table 4 shows a summary of the feedback from the pilot participants.

| | Not at all | A little | Somewhat | A lot | Very much so |
|---|---|---|---|---|---|
| How helpful | 0 | 0 | 0 | 2 | 1 |
| Change thoughts | 0 | 0 | 0 | 1 | 2 |
| Change behaviour | 0 | 0 | 1 | 2 | 0 |
| Change self-care | 0 | 0 | 2 | 1 | 0 |
| Recommend to others | 0 | 0 | 0 | 1 | 2 |

*Table 4- Summary of feedback from pilot participants*

Additional to the above, no pilots reported technical problems and two indicated the module was 'about the right length' and one indicated it was 'slightly too long'. Appendix Y includes the full feedback from the pilots. The main recommendation for

improvement was to shorten the length of the module. The aim was to create a module that took 1-2 hours to complete, however at the piloting stage, two of the participants took over 3 hours. To combat this, the two written case examples used in the module were combined into one. Additionally, one pilot reported spending a long time writing answers, and so it was additionally clarified in the module that the text box answers were for the participant's use only and they could write in the boxes as much or as little as desired.

## Case series

Following the piloting and integration of feedback into the intervention, the full case series was conducted as described in the methods section above.

## Results

### Demographics

Participants were 3 males and 7 females, their average age was 56 (range 51-65) and they were all White or White British. The relationship to the person with psychosis was 9 parents and 1 partner. The length of time since their family member had been identified as having psychosis was 0-3 months (1 participant), 3-6 months (2 participants), 6-12 months (2 participants), 12-24 months (1 participant) and 24+ months (4 participants).

### Objectives

'Uptake for the study will be broadly in line with uptake for interventions generally in this population.'

45 relatives were invited to take part in the study. 16 relatives showed initial interest in the study, of which 10 agreed to take part (22%). From the 6 who showed initial interest and later declined to take part, the reasons given were that the family had just entered BFT (1 person), or that the person now felt too busy to take part (5 people). 22% is a figure lower than general uptake for carer interventions in psychosis or around 33% Smallwood et al., (2017). This may have been due to the project being framed as research rather than intervention which may have been less appealing, alternatively the content or delivery of the intervention itself may have felt less useful to carers than a therapist led intervention might. Additionally, recruitment for this study occurred during the COVID-19 pandemic. This period has created a significant increase in pressure on mental health services and unpaid carers (Bergmann & Wagner, 2021) due to social isolation, lack of other support, increased uncertainty and economic challenges. As such, we might expect there to be fewer carers who feel like they have time and energy to engage in a research project such as the one detailed here at this time. Future studies may wish to explore further individual's reasons for taking part or choosing not to take part in an intervention such has this.

'Participants will engage in the intervention and will complete the requested outcome measures'

Participants were instructed to complete the questionnaire across 11 timepoints, comprising daily questionnaires for 9 days and questionnaires immediately before and after the intervention. This gave 110 possible data points across the 10 participants. 102 data points were completed (93%). 7 participants completed all questionnaires. 9 participants completed the study, with 1 participant (participant 10) dropping out at the point of being asked to complete the intervention without starting it. Overall, this suggests participants generally engaged in the intervention and completed the outcome measures.

'The intervention will be considered helpful and acceptable to participants.'

Table 5 shows a summary of the quantitative feedback results from the case series participants.

| | Not at all | A little | Somewhat | A lot | Very much so |
|---|---|---|---|---|---|
| How helpful | 1 | 2 | 5 | 0 | 1 |
| Change thoughts | 1 | 5 | 3 | 0 | 0 |
| Change behaviour | 3 | 5 | 0 | 1 | 0 |
| Change self-care | 2 | 6 | 0 | 1 | 0 |
| Recommend to others | 0 | 5 | 2 | 1 | 1 |

*Table 5- Summary of feedback from case series participants*

Additional to the above, no participants reported technical problems with the module itself, although participant 10 did not receive the module link due to issues with accessing their email account and therefore dropped out of the study. 6 participants indicated the module was 'about the right length', 2 indicated it was 'slightly too long' and 1 indicated it was 'slightly too short'.

Appendix Z includes the full results of the feedback questionnaire. Some participants were generally positive regarding the module and its utility (3 participants), however others felt that they'd already received the information before (4 participants) or that the case examples used in the module were not relevant to them due to the different presentation of their relative (1 participant).

## Primary hypothesis

'The intervention will cause a significant increase in the relative's control aspect of illness perceptions following the intervention'

Randomisation tests, as described by Kratochwill & Levin, (2010) were conducted for each participant who completed the intervention on the carer control aspect of illness perception. This is a test used in case series designs, which asks the question, 'given all the possible ways in which the data could be arranged, what is the probability of this particular set of observations occurring?' (Morley, 2018). It allows the researcher to test the null hypothesis that there is no effect of the intervention on the dependent variables measured. In this case, one tailed randomisation tests were used. This is generally recommended as studies investigating single-case interventions should have firm a priori predictions about the direction of their anticipated intervention effects (Levin et al., 2017). For more detailed information on conducting a randomisation test please see Appendix AA.

The results of these randomisation tests are shown in table 6.

| **Participant** | ***p*-value** |
|---|---|
| Participant 1 | *p= .167* |
| Participant 2 | *p*= .667 |
| Participant 3 | *p*= .167 |
| Participant 4 | *p*= .500 |
| Participant 5 | *p*= .500 |

| | |
|---|---|
| Participant 6 | *p*= .667 |
| Participant 7 | *p*= .167 |
| Participant 8 | *p*= .333 |
| Participant 9 | *p*= .167 |

*Table 6- randomisation test results for each participant on the carer control aspect of illness perceptions*

These results were consolidated by combining probabilities in an additive method using the methodology described by Edgington & Onghena, (2007) and further in Appendix AA. This resulted in an overall probability of *p*= .090 of the observed changes on the control item of the Brief IPQ-R across participants occurring by chance, if the null hypothesis was correct. This does not reach the standard significance level recommended of *p*< .05 and therefore is considered non-significant (Bouwmeester & Jongerling, 2020; Michiels et al., 2018).

## Secondary hypothesis

'The intervention will not cause a significant increase in the other aspects of illness perceptions.'

Figure 3 shows graphs of the Brief-IPQ scores for the carer control measure compared to the average of all other measures, allowing for a visual inspection of the data. The data are presented in this way for clarity, and Appendix AB contains graphs showing the Brief IPQ-R scores on each item separately.

Visual analysis of case series data is necessary for a comprehensive analysis (Heyvaert & Onghena, 2014), allowing for an easy to understand assessment of the intervention effects. However, it is more subjective than statistical analysis and has low interrater reliability, and low accuracy in some circumstances (Kazdin, 2011). As such, visual inspection should be used alongside statistical significance tests to provide more objective results (Bulté & Onghena, 2012; Kazdin, 1982).

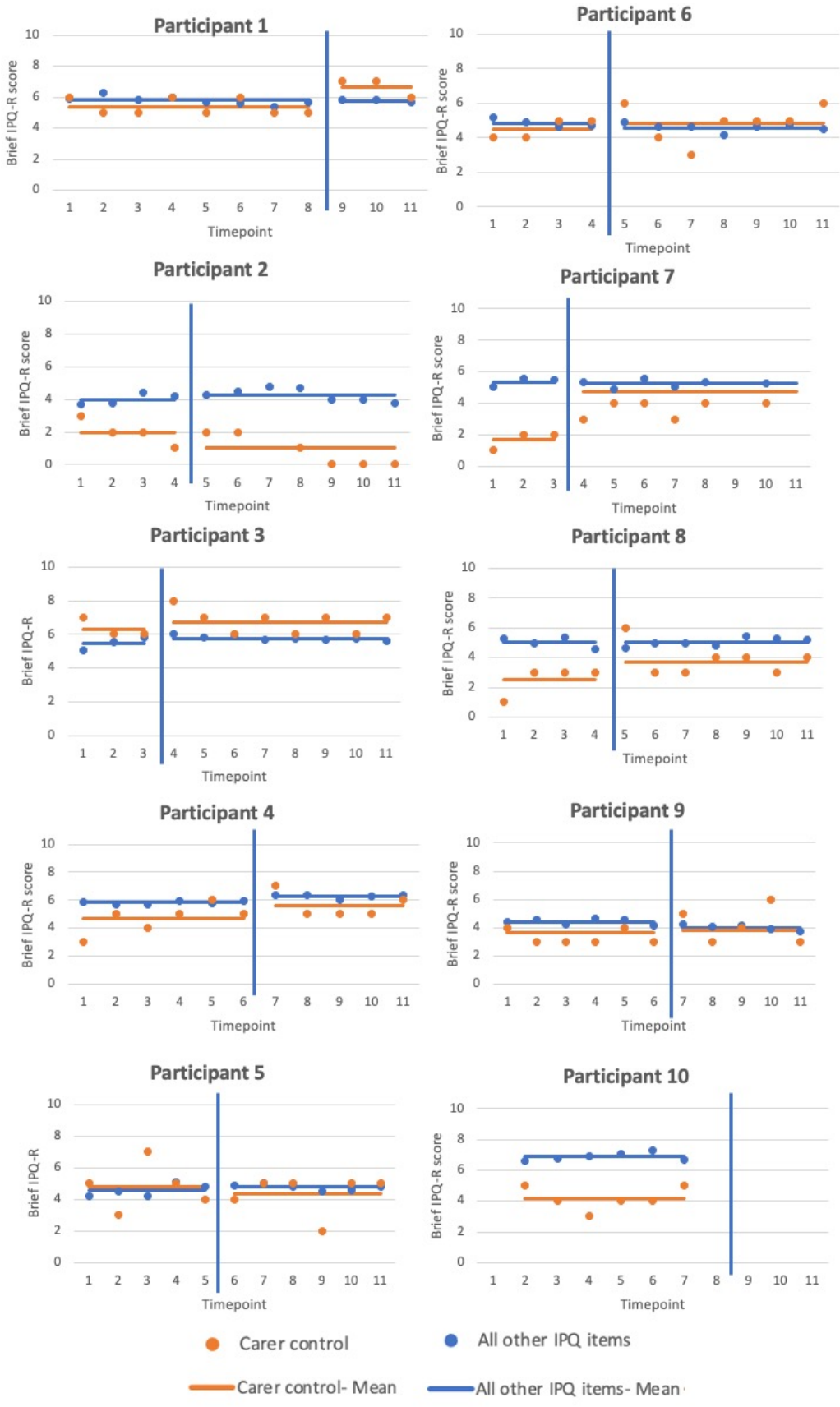



*Figure 3- Scores on the carer control item of the Brief IPQ-R compared to all other items. The vertical line indicates the point at which the programme was completed.*

Visual inspection of figure 3 suggests varying responses for participants. Some participants appear to show an increase following the intervention on the carer control item (participants 1, 4, 7, 8 and 9), others show a decrease (participant 2) and others appear to show little change (participant 3, 5, 6). The composite score remains relatively static throughout the course of the study for all participants and participants showed fairly low variability.

## Change scores

Table 7 shows the scores for each item of the Brief IPQ-R, including a composite score for all items except the carer control measure.

| Question | Baseline (M, SD) | Post-intervention (M, SD) | Change score (M, SD) |
|---|---|---|---|
| 1. Consequences- patient | 2.89 (2.57) | 3.22 (2.39) | 0.33 (0.87) |
| 2. Consequences- relative | 3.78 (1.30) | 4.00 (1.41) | 0.22 (0.67) |
| 3. Timeline (acute/chronic) | 2.44 (1.51) | 2.67 (1.50) | 0.22 (0.83) |
| 4. Control- patient | 5.00 (2.50) | 5.11 (2.42) | 0.11 (0.61) |
| ***5. Control- relative*** | ***3.78 (1.64)*** | ***5.33 (2.00)*** | ***1.56 (0.88)*** |
| 6. Coping | 5.78 (1.48) | 6.33 (1.22) | 0.56 (1.42) |
| 7. Control- treatment | 6.00 (2.96) | 5.89 (2.71) | -0.11 (0.61) |
| 8. Identity (symptoms) | 4.00 (2.12) | 4.00 (2.55) | 0.00 (1.22) |
| 9. Concern | 1.56 (1.33) | 1.67 (1.41) | 0.11 (0.61) |
| 10. Effort- patient | 5.00 (3.28) | 5.22 (3.15) | 0.22 (0.67) |
| 11. Effort- Relative | 7.67 (1.73) | 8.00 (2.06) | 0.33 (1.12) |
| 12. Cause | 7.33 (2.12) | 7.44 (2.12) | 0.11 (0.93) |
| 13. Blame- patient | 8.56 (1.67) | 8.67 (1.66) | 0.11 (0.93) |
| 14. Blame- relative | 6.67 (2.69) | 6.78 (2.28) | 0.11 (0.93) |
| 15. Coherence | 6.11 (1.62) | 6.11 (1.90) | 0.00 (1.22) |
| 16. Emotional representation | 2.00 (1.12) | 2.22 (1.39) | 0.22 (0.97) |
| 17. All items except Control- relative | 4.99 (0.66) | 5.16 (0.74) | 0.17 (0.19) |

*Table 7- Change scores for the Brief IPQ-R*

## Randomisation tests

In order to determine whether individual Brief IPQ-R items significantly changed due to the intervention, a series of randomisation tests were conducted, following the methodology described above and in Appendix AA. Table 8 shows the results of these tests.

| | Part. 1 | Part. 2 | Part. 3 | Part. 4 | Part 5 | Part. 6 | Part. 7 | Part. 8 | Part. 9 | Overall |
|---|---|---|---|---|---|---|---|---|---|---|
| Consequences- patient | *p*= .167 | *p*= .417 | *p*= .167 | *p*= .833 | *p*= .333 | *p*= .500 | *p*= .167 | *p*= .583 | *p*= .833 | *p*= .285 |
| Consequences- relative | *p*= .167 | *p*= .333 | *p*= .167 | *p*= .583 | *p*= .667 | *p*= .167 | *p*= .333 | *p*= .833 | *p*= 1.00 | *p*= .388 |
| Timeline (acute/chronic) | *p*= .167 | *p*= .833 | *p*= .500 | *p*= .333 | *p*= .500 | *p*= 1.00 | *p*= .917 | *p*= .833 | *p*= .667 | *p*= .924 |
| Control- patient | *p*= *.750* | *p*= .167 | *p*= .167 | *p*= .667 | *p*= .333 | *p*= .833 | *p*= 1.00 | *p*= .583 | *p*= .500 | *p*= .715 |
| ***Control- relative*** | *p*= *.167* | *p*= .667 | *p*= .167 | *p*= .500 | *p*= .500 | *p*= .667 | *p*= .167 | *p*= .333 | *p*= .167 | *p*= .090 |
| Coping | *p*= *1.00* | *p*= .333 | *p*= .500 | *p*= .667 | *p*= .333 | *p*= .500 | *p*= 1.00 | *p*= .833 | *p*= .167 | *p*= .828 |
| Control- treatment | *p*= *.333* | *p*= .833 | *p*= .500 | *p*= .500 | *p*= .500 | *p*= .333 | *p*= .833 | *p*= .167 | *p*= .667 | *p*= .577 |
| Identity (symptoms) | *p*= *.333* | *p*= .667 | *p*= .167 | *p*= .500 | *p*= 1.00 | *p*= 1.00 | *p*= .833 | *p*= .333 | *p*= .333 | *p*= .777 |
| Concern | *p*= *.333* | *p*= .917 | *p*= .167 | *p*= .500 | *p*= .583 | *p*= .333 | *p*= .833 | *p*= .583 | *p*= .667 | *p*= .683 |
| Effort- patient | *p*= *.333* | *p*= .917 | *p*= .583 | *p*= .583 | *p*= .667 | *p*= .333 | *p*= .833 | *p*= .833 | *p*= .333 | *p*= .853 |
| Effort- Relative | *p*=.167 | *p*= .250 | *p*= .167 | *p*= .667 | *p*= .167 | *p*= .833 | *p*= .667 | *p*= .583 | *p*= .500 | *p*= .285 |
| Cause | *p*= 1.00 | *p*= .333 | *p*= .167 | *p*= .583 | *p*= .333 | *p*= .833 | *p*= 1.00 | *p*= .583 | *p*= .917 | *p*= .924 |
| Blame- patient | *p*= .583 | *p*= .333 | *p*= .583 | *p*= .333 | *p*= .583 | *p*= .667 | *p*= .883 | *p*= .583 | *p*= 1.00 | *p*= .874 |
| Blame- relative | *p*=.167 | *p*= .167 | *p*= .167 | *p*= .500 | *p*= .500 | *p*= .667 | *p*= .167 | *p*= .583 | *p*= .500 | *p*= .108 |

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Coherence | *p*= .167 | *p*= .333 | *p*= .167 | *p*= .500 | *p*= .667 | *p*= .167 | *p*= 1.00 | *p*= .883 | *p*= .500 | *p*= .423 |
| Emotional representation | *p*= .167 | *p*= .167 | *p*= .200 | *p*= .333 | *p*= .667 | *p*= .833 | *p*= .500 | *p*= .833 | *p*= .833 | *p*= .514 |
| All items except Control-Relative | *p*= .167 | *p*= .333 | *p*= .167 | *p*= .167 | *p*= .500 | *p*= .333 | *p*= .833 | *p*= .833 | *p*= .500 | *p*= .223 |

*Table 8- Results of the randomisation tests for the Control-relative item and the composite score of all other items on the Brief IPQ-R*

Table 8 shows that no item is showing significant change, with the carer control item (labelled 'Control-Relative') being the closest item to significance at $p$=.090, and reduction in blame towards the carer ('Blame-Relative') being the next closest at $p$=.108.

## Post-hoc analyses

Given the comments from participants that the information in the module was familiar, further investigations were conducted to see whether the inclusion of only participants who's relative had developed psychosis in last year (participants 1, 2, 5 and 7) or only those who had not had an experience of BFT (excluding participants 3, 4 and 6) impacted the results. These categories were chosen as it is likely that increasing time following development of the psychosis is associated with greater exposure to relevant information, and because some of the concepts discussed in BFT can be similar to those presented in the module. The results of the repeated randomisation tests are included in Table 9.

| Question | Relative developed psychosis <12 months ago | Family has not received BFT |
|---|---|---|
| 1. Consequences- patient | *p*= .060 | *p*= .481 |
| 2. Consequences- relative | *p*= .201 | *p*= .676 |
| 3. Timeline (acute/chronic) | *p*= .759 | *p*= .901 |
| 4. Control- patient | *p*= .662 | *p*= .676 |
| ***5. Control- relative*** | *p*= .201 | *p*= .081 |
| 6. Coping | *p*= .872 | *p*= .824 |
| 7. Control- treatment | *p*= .799 | *p*= .676 |
| 8. Identity (symptoms) | *p*= .922 | *p*= .756 |
| 9. Concern | *p*= .872 | *p*= .901 |
| 10. Effort- patient | *p*= .899 | *p*= .901 |
| 11. Effort- Relative | *p*= .101 | *p*= .176 |
| 12. Cause | *p*= .872 | *p*= .951 |
| 13. Blame- patient | *p*= .710 | *p*= .901 |
| 14. Blame- relative | *p*= .061 | *p*= .100 |
| 15. Coherence | *p*= .612 | *p*= .756 |
| 16. Emotional representation | *p*= .201 | *p*= .593 |
| 17. All items except Control-relative | *p*= .388 | *p*= .593 |

*Table 9- Results of post-hoc randomisation tests on only participants whose relative developed psychosis in the last 12 months and on only participants who had not received BFT.*

The results of these again showed no significant results for any individual item or the composite measure.

## Discussion

Overall, participants generally engaged with the study, and reported that the programme was somewhat acceptable and helpful. Everyone who began the programme completed it and engaged with the material. Given the busy nature of this particular participant group, and the increasing use of online interventions in healthcare, it is a positive that this programme demonstrated that interventions for illness appraisals can be accessible, brief and engaging for participants.

It is interesting to note that the feedback from the case series participants is less positive than the pilot participants. This may be due to the case series including more participants who have had a longer experience with psychosis, compared to the pilot group where all participants reported psychosis developing less than a year ago. Comparatively, almost half of case series participants reported psychosis developing over two years ago. Only one case series participant reported psychosis developing in the last three months, and this participant reported that the information was familiar. As such, this programme is likely to be more useful to individuals when psychosis first develops, as this is when the information is likely to be more novel and impactful. Alternatively, it may be that the modification of the programme content following the piloting stage had a negative impact on the intervention's efficacy or other confounding factors such as the course of the illness, pre-existing beliefs about illness, illness symptoms or response to treatment varied amongst participants. Future research should consider whether to only recruit family members within the first few months of entering the service or to modify the content of the programme in order to explore this further.

No finding was statistically significant in any analysis conducted on illness appraisals. Therefore, we conclude that the programme was not able to significantly modify illness appraisals for the participants tested here. We did observe, however, that the carer control item was the closest item to significance. These results suggest that further studies with a more specifically targeted group could provide more information regarding how the programme affects illness appraisals.

One of the limitations of this study is that the only outcome measure was the IPQ-R. This means that we cannot comment on whether the module and impact on the illness perceptions had any impact on other factors such as psychological wellbeing, stress, or the relationship between the carer and the person with psychosis. Additionally, repeated measures have some limitations in their use, such as people becoming bored, fatigued or inaccurate when asked to repeat the same measure many times (Field, 2009). These should be borne in mind when interpreting these results.

Another limitation is that recruitment occurred via care co-ordinators utilising relationships with carers that were already existing. This therefore privileges for inclusion those who were already linked to the service and effectively excludes those who for whatever reason have not engaged with the service. This also means that participants were more likely to have already received information about psychosis as they were already involved with the service to some extent and had demonstrated desire to learn and engage with psychosis services. As such, in future studies it would be useful to attempt to recruit those carers who were not accessed through the recruitment methods detailed here, perhaps by recruiting via service users sharing with their family members directly or through recruiting via national pools of carers rather than through a specific service.

An additional aspect of the project to reflect on is the homogeneity of the sample. Despite approaching all family members known to the service who met inclusion criteria, participants were entirely White-British, in their 50s or 60s, and 90% of participants were parents of the person with psychosis. Although full data for carer demographics across the early intervention services is not collected, service user and national data can be used to estimate whether this sample is likely to be under-representative. Across the two early intervention services, 26% of service users are BME, and larger, UK based studies have suggested that the proportion of carers who are parents of the person with psychosis are around 75% (Jansen et al., 2015; Lobban, Glentworth, et al., 2013; Patel et al., 2014). As such, having no BME participants and only 1 non-parent in the case series is likely to be an under- representation of the carers associated with the early intervention services. Although challenging to represent the diversity of carers fully within such a small number of participants, future studies are likely to benefit from engaging a wider range of participants. Particularly as studies have shown that caregiving and illness appraisals can differ between ethnicities and relationship statuses ( Patel et al., 2014, Onwumere et al., 2008, 2020; Sin et al., 2016). Therefore, ensuring that studies include a diverse sample of participants increases the chance of the generalisability of any findings to the wider population.

In conclusion, the study outlined here reports on the development and piloting of a digital intervention for carers of people with first episode psychosis. The programme was developed from The Cognitive Model of Caregiving in Psychosis (Kuipers, Onwumere, & Bebbington, 2010) and Illness Perception theory (Leventhal et al., 2016), and aimed to develop an intervention that could be used to test the relationship between illness appraisals and cognitive, affective and behavioural outcomes using a causal interventionist paradigm. The programme was developed alongside service user carers and provided a brief and accessible programme. The programme did not

show a significant impact on illness appraisals as measured by the Brief IPQ-R. This lack of significant finding may be due to the information in the programme being familiar to a number of the participants or other confounding factors. We would expect a greater shift in appraisals for people for whom the information is more novel. As such, future studies should seek to test this programme in populations closer to the development of psychosis, as well as including a focus on increasing diversity within the participants. The programme content should also be modified to reflect participant feedback, such as including a wider variety of case examples to increase the relevance of the content for a wider range of people. If testing following these changes shows success at modifying these appraisals, the next stage of development would be to test the programme with a larger sample of participants and evaluate whether modifying this appraisal leads to changes in cognitive, affective or behavioural outcomes.

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# Executive summary

**Background-** Research has shown that carers are very important in recovery from psychosis. Research has also shown that carers have negative consequences from the psychosis including higher levels of stress and lower self-esteem. How people make sense of an illness (either mental or physical) has an impact on how they feel about it and on behaviours such as lifestyle changes or treatment uptake. In psychosis, some people have shown an association of one aspect of this making sense of the psychosis (the amount of control the carer has over the wellbeing of the person with psychosis) with factors such as better treatment outcomes in the person with psychosis and less criticism and stress in carers. However, all the research so far has been correlational. This means they have shown that higher levels of control beliefs are associated with better outcomes. However, this doesn't tell us whether more control beliefs cause better outcomes. For us to know this, we need methods of changing the control beliefs and then measuring whether this has an impact on outcomes. The aim of this study was to develop an online resource to modify beliefs of control in carers of people with first episode psychosis.

**Developing an intervention-** In order to develop an intervention, it is recommended to look at the relevant literature and speak to your target audience to find out what would be helpful for them. This is what was done in this study, and the researcher looked at academic studies, other interventions for this population and worked with four carers to create an intervention that they felt would be useful to other people in a similar position to themselves. It was piloted on a small group of three carers who also said they found it helpful, and that it made them think differently about their relative.

**Method-** The intervention was then tested on ten participants who had relatives open to an early intervention in psychosis service. Their beliefs about psychosis were

measured every day for ten days and statistical analysis was conducted to measure whether their beliefs changed after they received the intervention. Participant's feedback was also gathered about whether they liked the resource and found it helpful and what recommendations they would make to improve it.

**Results-** The results showed that the intervention was broadly acceptable to participants, but that it is likely to be more useful to people when their relative first develops psychosis rather than later. It did not lead to significant changes on their beliefs about psychosis.

**Discussion-** This intervention needs more studying before we can conclude whether it is effective or not. The next stage should be to test it with a larger group of people when their relative first develops psychosis to see if this population finds it useful and if it changes their beliefs following the intervention.

# Connecting Narrative

The following narrative consists of a reflective account of the process of conducting the three research projects. It includes a discussion of the projects as well as reflections on learning and challenges faced.

**Critical Review of the Literature (CRL)**

The CRL was developed from my previous experience volunteering in a drug and alcohol detoxification centre. It had struck me whilst there that the treatments offered were individually focused, however in conversations with residents, systemic factors maintaining their substance abuse was highly apparent. As such, I took the opportunity of the CRL to explore whether systemic therapy would offer an effective way of supporting those with substance abuse problems.

My external supervisor brought expertise of substance abuse and passion which inspired me to undertake research in this area. She encouraged me to continuously connect the project to the clinical population to which it might benefit, rather than allowing it to become a purely theoretical piece of work. My internal supervisor provided detailed support with conducting the review and brought a sense of focus and enthusiasm to conducting this piece of work.

One of the challenges I faced in in the CRL was that of time intensiveness. Of all three projects I found it took the longest and I spent many hours conducting searches, checking papers and extracting data. This made me reflect on the challenges of conducting such work outside of dedicated research roles and the utility of wider teams working on such reviews.

The CRL demonstrated that the effectiveness of family therapy depends on how success is measured. I have learnt from this to reflect on how I define success in my clinical work. One of the other findings was that the research literature was based on a

geographically restricted population. This encouraged me to notice that the treatments I provide clinically may also be based on culturally homogeneous research samples. It has made me more aware of culturally adapting my practice to fit with particular clients.

**Service improvement project (SIP)**

The idea for the SIP came from my external supervisor, as a topic that she felt would be useful for her service. I was drawn to this project due to my prior interest in what makes therapy successful for some people but not others.

I had not worked within a psychosis population prior to my research and so was relatively reliant on the expertise of my supervisors in how my understanding of CBT could be translated to this population. Without being a member of the service myself, I was reliant on my supervisor and the assistant psychologist to help promote the project within the team and contact potential participants. One of the major barriers to this project was recruitment. The potential pool of participants was lower than expected, and so despite contacting all eligible participants I was only able to interview two. Checking the size of the pools of potential participant in advance of conducting research was a useful lesson to learn for the future.

Having never conducted a qualitative analysis before, the SIP was a good opportunity to learn something new, and the experience of conducting interviews was enjoyable and rich. The interviews often mentioned the importance of the timing of the therapy offer. It made me think of services I had worked in with long waiting lists, where the ability to be flexible in offering therapy at a time that is right for the individual is so limited.

**Main research project (MRP)**

My MRP developed out of an interest in how people make sense of their mental health problems. I have long since been anecdotally interested in the sense people make of their mental health problems and how this impacts them. As with my SIP, I was working within an unfamiliar population and so relied on my supervisor and service user consultants to provide expertise on living and working with psychosis. My pre-training experience of working on the development of an online therapy was useful, as my knowledge of web development, filming and editing increased my confidence in conducting this work.

One of the key parts of my MRP was working alongside service user consultants. I found this a hugely rewarding part of my research experience. Their enthusiasm and honesty were impressive, and they encouraged me to feel that I was creating an intervention that was likely to be helpful for people in a similar position to themselves. This made me reflect on the utility of service user involvement in research and I will certainly consider it a priority to work alongside people with lived experience in future.

Unfortunately, the intervention was unsuccessful at achieving its intended outcomes in the main study. On a personal level this was difficult to hold, as from the development and piloting I was excited about the intervention being useful and meeting the intended outcomes. It was very difficult to recruit and took much longer than expected, so to finally get all the data in and have the intervention received less positively than hoped for was disappointing. However, it is an important lesson for me that research isn't always significant, that recruitment is often challenging and that what some individuals find useful is not necessarily so for others. These are lessons I will take with me in my future research work.

**Onwards involvement in research**

Coming from my pre-training research background experience, I have always wanted to incorporate research into my professional work. I feel that research aids in

expanding knowledge and ultimately providing better care for people. Conducting this research has made me aware of the time research takes, and the challenge of committing adequate time to projects. I expect this barrier becomes greater in a full-time clinical role when time devoted to research may become difficult to maintain in the face of service pressures. However, I feel that the research I have done on the course, has always been with the intention of improving the experience of service users. I therefore hope I can continue to conduct similar research within my future professional roles.

# Acknowledgments

I would like to thank my supervisors, both research and clinical, and course tutor for their support in conducting the research documented here as well as the other aspects of the training course. I am thankful to my family, friends and training cohort for their help and encouragement. I am also grateful to my partner Tom, for listening to hours of work-related monologues, as well as being my constant companion during this lonely pandemic year.

# Appendices

## Appendix A – CRL: Author Guidance- Journal of Family Therapy

**Manuscript submission**

Papers submitted for publication should be original work not previously published in English and not currently submitted elsewhere for consideration. If accepted for publication, a paper cannot be published elsewhere in any language without the consent of both Editor and publisher. It is a condition of acceptance that the Association for Family Therapy and Systemic Practice automatically acquires the copyright throughout the world.

Manuscripts should be submitted to the following website: **https://mc.manuscriptcentral.com/jft**. Full submission instructions can be found on this website.

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## Covering Letter

A cover letter should be submitted with your manuscript and must include a statement that the data has not been published, and is not under consideration for publication elsewhere. It will be presumed that all listed authors of a manuscript have agreed to the listing and have seen and approved the manuscript. The cover letter should include a statement outlining what is new, impact making and original about the paper and why it should be considered for publication.

Please also include a paragraph detailing the Authorship contribution detailing the Author(s) responsible each of the following:

designing the work

acquiring the data

interpreting the data

drafting the work/ revising the work critically for intellectual content

A statement from the authors agreeing to be held accountable for all aspects of the work and any questions relating to the accuracy or integrity of the work should also be included.

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1. Manuscripts should allow for 'blind/anonymised' refereeing and **must not** contain author names or any identifiable data.

2. Manuscripts **must** be typed in double spacing throughout, including quotation, notes and references in the following order:

Title Page: to contain the title of the paper, word count, suggested running head (short title for your paper), key words, author names, affiliations and contact details for the corresponding author.

Abstract: on a separate sheet, the title to be repeated followed by a summary of not more than 150 words. The suggested running head should also be present. *For tips on optimizing your abstract for search engines please click here*.

Practitioner Points: two to six bullet points of no more than 180 characters each (including spaces), up to a total of 480 characters.

Organisation of the text: see copy of Journal for the format currently in use.

Figures, tables, etc.: All figures and tables should be numbered with consecutive arabic numerals, have descriptive captions and be mentioned in the text. They should be kept separate from the text but an approximate position for them should be indicated. These will need to be uploaded separately. Please supply figures in the format in which they were created, if possible.

References (in text): These should be indicated by the name and date e.g. 'Carr (2009)'. If more than two authors are listed, cite the reference as 'McHugh et al. (2010)'. Quotations should include page numbers. Websites should also be cited in this way, with a full reference appearing in the References section (see below). Please check all websites are live and the links are correct at time of submission.

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may be submitted in any style or format, as long as it is consistent throughout the manuscript.

3. The word limit, excluding abstract and practitioner points will vary depending on the type of paper you are submitting. Please refer to the 'Advice to Authors' section below.

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Writing is a very enjoyable and satisfying way of being involved in the world of family therapy. The exchange of ideas and experience is important both for the development of our chosen field and for the development of the individual practitioner. We intellectually sustain ourselves by creating a healthy and vibrant literature. Family therapy needs to develop authors and The *Journal of Family Therapy* wants to hear from you.

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Suggested headings for systematic reviews are:

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inclusion criteria;

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Please ensure that you include the standard points for practice. You should provide the PROSPERO number in the methods section of the paper, or explain in your covering letter if you have not registered your review with PROSPERO.

# Appendix B – CRL: Family therapies included in review

**Multisystemic treatment (MST)**

MST is an intensive therapy created by Scott Henggeler in the 1970s, originally designed to work with juvenile offenders within the criminal justice system. The therapy normally lasts 4-6 months and offers weekly sessions as well as 24/7 support to families by phone. It draws from strategic family therapy and structural family therapy ideas, as well as integrating cognitive behavioural strategies. Interventions are focused on rewarding specific behaviour changes, increasing responsibility and empowering caregivers and focusing on the large variety of risk factors within the system that may be impacting problem behaviour. The focus is on family preservation and strengthening family relationships.

**Multidimensional Family Therapy (MDFT)**

MDFT was developed by Fred Liddle and his team in the 1980's. It is a developmentally focused, multiple systems approach, using knowledge of developmental changes during adolescence to assess and intervene in the lives of young people and their families (Liddle, 2002). The treatment focuses on individual characteristics of the young person such as emotional regulation, individual characteristics of the family members, such as parenting practices, the inter-relational patterns between members of a system that maintain the problem and the functioning of the young person in other psychosocial ecologies (Liddle et al. 2001). The therapy draws its influence from structural family therapy and strategic family therapy. MDFT is generally delivered in a limited number of weekly sessions over a period of 4-6 months. The sessions generally take place at an office but can sometimes take place in other locations such as schools, homes or juvenile detention centres and vary between including just the young person or other family members alongside the young person.

**Functional Family Therapy (FFT)**

FFT was developed in the 1970s by James Alexander. The programme consists of specific stages, focusing on assessing and developing motivation to change, assessing the interactional impact of behaviours and emotions between family members and skills training such as listening and anger management skills (Alexander et al., 2013). FFT particularly focuses on training skills within the specific context of each dyad of the family thus improving relationship functioning. It works on the assumption that each behaviour within the family system serves a function and by understanding this function the individual is in a better position to modify maladaptive behaviours (Alexander & Parsons, 1982). FFT is derived from family systems theory, structural ideas and cognitive behavioural theory. It is delivered in weekly sessions either at the home or office and generally consists of 8-16 sessions.

**Brief Strategic Family Therapy (BSFT)**

BSFT was developed by José Szapocznik in the 1970s. It draws mainly from strategic and structural family therapy ideas. BSFT targets repetitive patterns of interaction that are directly related to the problem behaviours exhibited by the young person. It was originally developed for use with Hispanic families and has a high level of focus on engagement with the families at the beginning of treatment. Treatment then involves 'diagnosing' the interactional patterns between family members that maintain problem behaviours and restructuring these by therapist-led changes to the identified patterns (Robbins & Szapocznik, 2000). Treatment typically lasts for 12-15 sessions over three months and is mostly conducted in the office but can be conducted in the community depending on family need.

**Ecologically Based Family Therapy**

EBFT is the newest therapy on this list, developed in the 2000s by Natasha Slesnick and colleagues. It is based on the same conceptual principles as MST, identifying multiple domains of importance and supporting change throughout the system including within the individual, family and external system such as the school and juvenile forensic system (Slesnick & Prestopnik, 2005). EBFT has been used primarily on 'runaway youth' who are not living with their family of origin but who have a parent or surrogate parent that can be included in treatment. The treatment takes place over 15 sessions.

# Appendix C- CRL: Full search strategy

## Search terms

(famil* adj2 therap*) or (famil* adj2 treatment*) Or (famil* adj2 intervention*) Or (systemic* adj2 intervention*). Or multisystemic or (systemic* adj2 treatment*) or (systemic* adj2 therap*) or "family counsel?ing"

And "substance abuse" or "substance misuse" or "substance dependanc*" Or addict* or "drug abuse" or "drug misuse" or "illegal drug*" or "illicit drug*" or "street drug*" Or heroin Or opiate* Or cannabis Or cocaine

## Additional MESH terms/ limiters per database

**CINAHL (250 results)**

**MESH Term 1**

- "FAMILY THERAPY"/
- "SOCIAL CONSTRUCTIONISM"/
- "FAMILY THEORY"/
- "FAMILY SYSTEMS THEORY"/
- "SYSTEMS THEORY"/

**MESH Term 2**

- "SUBSTANCE ABUSE, INTRAVENOUS"/
- "INHALANT ABUSE"/
- "SUBSTANCE ABUSE"/
- "SUBSTANCE DEPENDENCE"/

**Limiters**

[Human age groups Child: 6-12 years OR Adolescent: 13-18 years OR Adult: 19-44 years] [Clinical queries THSE OR THSP OR TBB]

**PsycInfo (657 - 686 results)**

**MESH Term 1**

- "STRATEGIC THERAPY"/
- "MULTISYSTEMIC THERAPY"/
- "FAMILY SYSTEMS THEORY"/
- "FAMILY INTERVENTION"/
- "STRUCTURAL FAMILY THERAPY"/
- "STRATEGIC FAMILY THERAPY"/
- "FAMILY THERAPY"/

**MESH Term 2**

- "SUBSTANCE ABUSE AND ADDICTION MEASURES"/
- "PRESCRIPTION DRUG MISUSE"/
- "INTRAVENOUS DRUG USAGE"/
- "DRUG ADDICTION"/
- "DRUG ABSTINENCE"/
- ADDICTION/
- "POLYDRUG ABUSE"/
- "INHALANT ABUSE"/
- "DRUG ABUSE"/
- "SUBSTANCE USE DISORDER"/
- CANNABIS/
- "NARCOTIC DRUGS"/
- MARIJUANA/
- "CRACK COCAINE"/
- COCAINE/
- HEROIN ADDICTION"/
- HEROIN/
- OPIOID USE DISORDER"/
- "HALLUCINOGENIC DRUGS"/

**Limiters**

[Human age groups School Age 6-12 Yrs OR Adolescence 13-17 Yrs OR Young Adulthood 18-29 Yrs] [Methodology Empirical Study OR Experimental Replication OR

Followup Study OR Longitudinal Study OR Quantitative Study OR Treatment Outcome/Clinical Trial]

**MEDLINE (219 results)**

**MESH Term 1**

- "FAMILY THERAPY"/
- MESH Term 2
- "SUBSTANCE ABUSE, ORAL"/
- "SUBSTANCE ABUSE, INTRAVENOUS"/
- "OPIOID-RELATED DISORDERS"/
- "MARIJUANA USE"/
- "MARIJUANA ABUSE"/
- "INHALANT ABUSE"/
- "DRUG OVERDOSE"/
- "COCAINE-RELATED DISORDERS"/
- "AMPHETAMINE-RELATED DISORDERS"/
- "SUBSTANCE-RELATED DISORDERS"/

**Limiters**

[Document type Clinical Study OR Clinical Trial OR Clinical Trial, Phase I OR Clinical Trial, Phase Ii OR Clinical Trial, Phase Iii OR Clinical Trial, Phase Iv OR Comparative Study OR Controlled Clinical Trial OR Evaluation Studies OR Pragmatic Clinical Trial OR Randomized Controlled Trial] [Human age groups Child OR Adolescent OR Young adult] [Clinical queries therapy-sensitivity OR therapy-specificity OR therapy-balance]

# Appendix D – CRL: Quality Assessment Tool

| Criteria | Yes | No | Other (CD, NR, NA) |
|---|---|---|---|
| 1. Was the study described as randomized, a randomized trial, a randomized clinical trial, or an RCT? | | | |
| 2. Was the method of randomization adequate (i.e., use of randomly generated assignment)? | | | |
| 3. Was the treatment allocation concealed (so that assignments could not be predicted)? | | | |
| 4. Were the people assessing the outcomes blinded to the participants' group assignments? | | | |
| 5. Were the groups similar at baseline on important characteristics that could affect outcomes (e.g., demographics, risk factors, co-morbid conditions)? | | | |
| 6. Was the overall drop-out rate from the study at endpoint 50% or lower of the number allocated to treatment? | | | |
| 7. Was the differential drop-out rate (between treatment groups) at endpoint 15 percentage points or lower? | | | |
| 8. Was there high adherence to the intervention protocols for each treatment group? | | | |

| | | | |
|---|---|---|---|
| 9. Were other interventions avoided or similar in the groups (e.g., similar background treatments)? | | | |
| 10. Were outcomes assessed using valid and reliable measures, implemented consistently across all study participants? | | | |
| 11. Did the authors report that the sample size was sufficiently large to be able to detect a difference in the main outcome between groups with at least 80% power? | | | |
| 12. Were outcomes reported or subgroups analyzed prespecified (i.e., identified before analyses were conducted)? | | | |
| 13. Were all randomized participants analyzed in the group to which they were originally assigned, i.e., did they use an intention-to-treat analysis? | | | |

*CD, cannot determine; NA, not applicable; NR, not reported

| Quality Rating (Good, Fair, or Poor) |
|---|
| Rater #1 initials: |
| Rater #2 initials: |
| Additional Comments (If POOR, please state why): |

# Appendix E – CRL: Data extraction form

| Study ID: | Report ID : | Date form completed: |
|---|---|---|
| First author: | Year of study: | Data extractor: |
| Citation: | | |

**1. General Information**

| Publication type Journal Article ☒ Abstract ☐ Other (specify e.g. book chapter)_____ |
|---|
| Country of study: |

**2. Study Eligibility**

| Study Characteristics | | | Page/ Para/ Figure # |
|---|---|---|---|
| Participants<br>(Review authors insert inclusion criteria as defined in Protocol) | Describe the participants included: | | |
| | Do the participants meet the age range requirements? (10-25) | Yes ☒ No ☐<br>Unclear ☐<br>Details: | |
| | Do the participants meet the criteria for inclusion? | Yes ☒ No ☐<br>→Exclude<br>Unclear ☐ | |
| | | | |

| Types of intervention | Family therapy type | | |
|---|---|---|---|
| | Any adaptations made? | | |
| | Comparison group(s) | | |

| | | | |
|---|---|---|---|
| (Review authors insert inclusion criteria as defined in Protocol) | Does the intervention and comparison meet the criteria for inclusion? | Yes ☒ No ☐<br>→Exclude<br>Unclear ☐ | |
| Types of outcome measures<br>(Review authors insert inclusion criteria as defined in Protocol) | List outcomes:<br>Substance use measure(s)<br>Internalising behaviour<br>Externalising behaviour<br>Family functioning | | |
| | Do the outcome measures meet the criteria for inclusion? | Yes ☒ No ☐<br>→Exclude<br>Unclear ☐ | |
| | | | |

**DO NOT PROCEED IF PAPER EXCLUDED FROM REVIEW**

**3. Study details**

| Study intention | Descriptions as stated in the report/paper | Page/ Para/ Figure # |
|---|---|---|
| Aim of study | What was the study designed to assess? Are these clearly stated? | |
| Equity pointer: Social context of the study | e.g. was study conducted in a particular setting that might target/exclude specific population s? See also Inclusion/exclusion criteria under Methods, below. | |

| | | |
|---|---|---|
| Start and end date of the study | Identify which elements of planning of the intervention should be included | |
| Total study duration | | |

| Methods | Descriptions as stated in the report/paper | Page/ Para/ Figure # |
|---|---|---|
| Method/s of recruitment of participants<br>(How were potential participants approached and invited to participate? Where were participants recruited from? Does this differ from the intervention setting?) | | |
| Inclusion/exclusion criteria for participation in study | | |
| Representativeness of sample: Are participants in the study likely to be representative of the target population? Typical of adolescents more generally (e.g. my target population) | | |
| Total number of intervention groups | | |
| Sample size calculation:<br>What assumptions were made?<br>Were these assumptions appropriate? | (Yes/No/Unclear) | |
| What was the unit of randomisation? And analysis?<br>Allocation by individuals or cluster/groups | | |

**Results**

| Participants | Include information for each group (i.e. intervention and controls) under study | Page/ Para/ Figure # |
|---|---|---|
| What percentage of selected individuals agreed to participate? | | |
| Total number randomised | | |
| Number allocated to each intervention group (no. of individuals) | | |
| For cluster trials, number of clusters, number of people per cluster | | |
| Where there any significant baseline imbalances? | Yes ☐ No ☐<br>Unclear ☐<br>Details: | |
| Number and reason for (and sociodemographic differences of) withdrawals and exclusions for each intervention group | | |
| Were patients who entered the study adequately accounted for? Does the number of people who completed and dropped out match the number enrolled | | |
| What percentage of patients completed the study? | | |
| What percentage of participants received the allocated intervention or exposure of interest? | | |
| Is the analysis performed by intervention allocation status (intention to treat) rather than the actual intervention received? Have | | |

| | | |
|---|---|---|
| any attempts been made to impute missing data? | | |
| Demographics-<br>Age, sex, race, co-morbidity, other | | |
| Diagnostic criteria for SU (if used) | | |

**Intervention Group**

| Group name: | (State brief name for this intervention group.) | Page/ Para/ Figure # |
|---|---|---|
| Details of intervention or control condition (Include if relevant in sufficient detail for replication) | | |
| Setting eg multicentre, university teaching hospitals, rural, metropolitan, school, workplace, community, GP clinic, etc. | | |
| Theoretical basis (include key references) | | |
| Content (list the strategies intended and delivered) | | |
| Did the intervention include strategies to address diversity/disadvantage? | Enter a description of any relevant strategies | |
| Delivery (eg. Stages (sequential or simultaneous), timing, frequency, duration, intensity, fidelity – process indicators) | | |
| Providers (who, number, education/training in intervention delivery, ethnicity etc. if potentially relevant to acceptance and uptake by participants | | |
| Co-interventions | | |
| Duration of intervention | | |

| | | |
|---|---|---|
| Treatment fidelity measured? | | |
| Duration of follow-up | | |
| Control/comparison (what information is provided about what the control or comparison group received?) | Enter a description of what was provided for the control group, if applicable | |

**Outcomes**

| Question | Drug use | Page/ Para/ Figure # | Internalising behaviours | Page/ Para/ Figure # |
|---|---|---|---|---|
| Outcome definition (with diagnostic criteria if relevant) | | | | |
| Time points measured | | | | |
| Time points reported | | | | |
| Is there adequate latency for the outcome to be observed? Say what the latency was | | | | |
| Unit of measurement (if relevant) | | | | |
| For scales – upper and lower limits and indicate whether high or low score is good | | | | |
| How is the measure applied and outcome | | | | |

| | | | | |
|---|---|---|---|---|
| reported? Self or study assessor, interview, phone etc. | | | | |
| Is this outcome/tool validated? | | | | |
| …And has it been used as validated? | | | | |
| Is it a reliable outcome measure? | | | | |
| Is there adequate power for this outcome? | | | | |

| Question | Externalising behaviours | Page/ Para/ Figure # | Family functioning | Page/ Para/ Figure # |
|---|---|---|---|---|
| Outcome definition (with diagnostic criteria if relevant) | | | | |
| Time points measured | | | | |
| Time points reported | | | | |
| Is there adequate latency for the outcome to be observed? | | | | |

| | | | | |
|---|---|---|---|---|
| Unit of measurement (if relevant) | | | | |
| For scales – upper and lower limits and indicate whether high or low score is good | | | | |
| How is the measure applied and outcome reported? Self or study assessor, interview, phone etc. | | | | |
| Is this outcome/tool validated? | | | | |
| …And has it been used as validated? | | | | |
| Is it a reliable outcome measure? | | | | |
| Is there adequate power for this outcome? | | | | |

**Results**

Copy and paste the appropriate table for each outcome and subgroup at each timepoint, including baseline- timepoints are BASELINE, END OF TREATMENT, 0-6 MONTHS FOLLOW UP, 6-12 MONTHS FOLLOW UP, 12 MONTHS + FOLLOW UP

If multiple measures are done within the same timepoint category the latest eligible measurement will be used.

| | **Continuous outcome** | | | | | Page/ Para/ Figure # |
|---|---|---|---|---|---|---|
| Comparison | | | | | | |
| Outcome | | | | | | |
| Subgroup | | | | | | |
| Timepoint | | | | | | |
| Post-intervention or change from baseline? | | | | | | |
| Results | Intervention | | | Comparison | | |
| | Mean | SD | No. participants | Mean | SD | No. participants |
| | | | | | | |
| No. missing participants and reasons | | | | | | |
| Any other results reported | | | | | | |
| Reanalysis required? (specify) | | | | | | |
| Reanalysis possible? | yes/no/unclear | | | | | |
| Reanalysed results | | | | | | |

**Other relevant information**

| | | |
|---|---|---|
| | | Page/ Para/ Figure # |
| Were outcomes relating to harms/unintended effects of the intervention described? Include any data for these in the outcomes tables above | | |
| Potential for author conflict ie. evidence that author or data collectors would benefit if results favoured the intervention under study or the control | | |
| Key conclusions of the study authors | | |
| Could the inclusion of this study potentially bias the generalisability of the review? Equity pointer: Remember to consider whether disadvantaged populations may have been excluded from the study. If large study with large effect size on niche group of people then this might be a problem. | | |
| Issues affecting directness<br>(Note any aspects of population, intervention, etc. that affect this study's direct applicability to the review question) | | |
| References to other relevant studies | | |
| Additional notes by review authors | | |

# Appendix F – CRL: Further details on quality assessments

All studies met criteria 1, 2, 10 and 12, meaning that all studies were randomised controlled trials, used adequate randomisation methods, assessed outcomes using reliable and valid measures, and identified the outcomes to be reported prior to analysis. Fourteen studies met criterion 3, that treatment allocation was done in such a way that assignments could not be predicted, while the remaining four studies did not report specifically on the randomisation method used. Seven studies met criterion 4 by explicitly reporting that assessors were blind to the treatment condition. The remaining studies did not report whether or not this was the case, with no studies explicitly saying that assessments were conducted by researchers that knew allocations to conditions.

To meet criterion 5, studies were required to show baseline similarity between groups on important characteristics. Eight studies demonstrated this to be the case. Three studies did not report whether key baseline characteristics varied between groups, and seven studies reported differences at baseline that may have had an impact on outcomes. In these seven studies, respectively, the participants in the family therapy condition were disproportionately female (Valdez 2013), presented with either less (Henggeler 2006) or more (Henggeler 1999) frequent drug use, lower family competence (Liddle 2001), or older age (Freidman 1989) than those in the comparator condition. Szapocznik 1983 and 1986 noted that there were baseline imbalances in some of the between-participant comparisons but did not report specifically what these were.

Seventeen studies met criterion 6, that overall dropout rate should be less than 50%. One study (Szapocznik 1986) did not report on overall dropout rate. This paper looks at a sample of 35 families who attended at least four family therapy sessions and completed both initial and end of treatment assessments but does not report how many families entered treatment but did not meet these criteria meaning that it was impossible to determine the drop-out rate.

Two studies failed to meet criterion 7, having differential dropout rates of more than 15% at end of treatment, which constitutes a so-called fatal flaw. In Liddle 2001, 30% of participants did not complete MDFT, 35% did not complete the multifamily education intervention, and 47% did not complete adolescent group therapy, representing a 17% difference in dropout between the MDFT and group therapy conditions. Henderson 2010 reported that 95% of participants in the MDFT condition received full or partial intervention compared to 60% in the enhanced service as usual condition, indicating a differential dropout rate of 35%. A further three studies (Szapocznik 1983, Szapocznik 1986, Friedman 1989) did not report differential dropout rates.

High adherence to the intervention was shown in ten studies which therefore met criterion 8. Seven studies either did not comment on or did not measure treatment fidelity and one paper (Henggeler 1999) reported that treatment fidelity was measured, but that adherence to the MST treatment protocol was low.

Ten studies met criterion 9 of ensuring that background treatments were similar across conditions. Five studies did not report on background treatments. Slesick 2005 reported that some adolescents received treatment outside of the program, with participants receiving more outside intervention/support in the treatment-as-usual group than in the family therapy group, but the authors did not specify what type of treatment sessions took place in each of the two trial groups. Robbins 2011 reported that participants in the family therapy condition received support thought Alcoholics Anonymous (AA) and case management in addition to family therapy, and the treatment-as-usual group included individual therapy, group therapy, parent training, non-manualised family therapy, case management, and AA. The extent of these additional treatments or their distribution between the two groups was, however, not commented on. Valdez 2013 note that participants in both groups were in receipt of referrals to other social and behavioural health services during the study period, but do not provide further details about the content of these services, nor do they report

on whether participants in either group engaged with these other services during the study period itself.

Only four studies explicitly report that an a priori power calculation had been conducted and an appropriate sample size used (criterion 11). Whilst no study reported that power was not adequately met with the sample size used, it is not possible to determine which of the included studies who did not report a power analysis had appropriate statistical power and which were underpowered.

Five studies were deemed to be fatally flawed as a result of failing to satisfy criterion 13, as they conducted their analyses on treatment completers rather than using intent-to-treat analyses. Szapocznik 1983, Szapocznik 1986, Friedman 1989 and Liddle 2001 each conducted analyses on treatment completers only. Valdez 2013 reported that they had conducted both completers and intention to treat analyses but only reported the completers' data analysis.

## Appendix G- **CRL: Treatment details from included studies**

| | | | | Length of treatment | | |
|---|---|---|---|---|---|---|
| **Report ID** | **Study ID** | **Length of follow up (from baseline)** | **% that did not complete treatment** | **Sessions** | **Time** | **Included in Meta-analysis?** |
| Szapocznik 1983 | Szapocznik 1983 | 9-15 months | 40% | 12 | Unclear | No |
| Szapocznik 1986 | Szapocznik 1986 | 9-15 months | 71% | 15 | Unclear | No |
| Friedman 1989 | Friedman 1989 | 15 months | unclear | 24 | 6 months | No |
| Henggeler 1999 | Henggeler 1999 | 10 months | 2% | 40 hours | 4.3 months average | Yes |
| Liddle 2001 | Liddle 2001 | 18 months | 30% | 16 + | 5-6 months | No |
| Waldron 2001 | Waldron 2001 | 7 months | 13% | 12 sessions | 3 months | Yes |
| Henggeler 2002 | Henggeler 1999 | 10 months | 2% | 40 hours | 4.3 months average | No |
| Liddle 2004 | Liddle 2004 | No follow-up | 3% | 12- 16 sessions | 3-4 months | Yes |
| Dennis 2004 | Dennis 2004 | 15 months | 26% | 12-15 sessions | 3-4 months | Yes |

| | | | | Length of treatment | | |
|---|---|---|---|---|---|---|
| **Report ID** | **Study ID** | **Length of follow up (from baseline)** | **% that did not complete treatment** | **Sessions** | **Time** | **Included in Meta-analysis?** |
| Slesnick 2005 | Slesnick 2005 | 12 months | 12% total | 15 sessions | 3 months | No |
| Henggeler 2006 | Henggeler 2006 | 12 months | 96% total | Average 66 hrs (DC/ MST) or 57 hrs (DC/MST/CM) | 4 months | Yes |
| Liddle 2008 | Liddle 2008 | 14 months | 41% total | Median 8 | Average 2 months | Yes |
| Liddle 2009 | Liddle 2004 | 12 months | 3% | 12- 16 | 3-4 months | Yes |
| Henderson 2010 | Henderson 2010 | 9 months | 13% | 6 hrs/ month | 4-6 months | No |
| Robbins 2011 | Robbins 2011 | 16 months | 19% total | 12-16 | 4 months | Yes |
| Horigan 2015 | Robbins 2011 | 3-7 years | 19% total | 12-16 | 4 months | No |
| Valdez 2013 | Valdez 2013 | 10 months | 44% | 16 sessions | 4 months | No |
| Slesnick 2013 | Slesnick 2013 | 18 months | 75% | 14 sessions | 6 months | Yes |

| | | | | Length of treatment | | |
|---|---|---|---|---|---|---|
| **Report ID** | **Study ID** | **Length of follow up (from baseline)** | **% that did not complete treatment** | **Sessions** | **Time** | **Included in Meta-analysis?** |
| Rigter 2013 | Rigter 2013 | 12 months | 5% total | 2 sessions per week | 6 months | Yes |
| Dakof 2015 | Dakof 2015 | 18 months | 3.6% | Average 10 hrs/ month | 4-6 months | Yes |
| Liddle 2018 | Liddle 2018 | 18 months | 3.50% | Average 3.28 hrs/ week | 6-9 months | Yes |

## Appendix H- CRL: Substance abuse criteria and measures used

| Report ID | Study ID | Cut off for substance abuse | Substance Abuse Measure | Externalising/ Internalising Measure | Family Functioning Measure | Included in Meta-analysis? |
|---|---|---|---|---|---|---|
| Szapocznik 1983 | Szapocznik 1983 | The sufficient use of a drug to pose a problem as assessed by the client oriented data acquisition process (CODAP) | Drug abuse score of psychiatric status schedule | None | Family Environment Scale | No (Poor quality) |
| Szapocznik 1986 | Szapocznik 1986 | As Szapocznik 1983 | Drug abuse score of psychiatric status schedule | None | Family Environment Scale | No (Poor quality) |
| Friedman 1989 | Friedman 1989 | Need to be referred for drug abuse treatment | Drug severity index | None | Family Environment Scale | No (Poor quality) |
| Henggeler 1999 | Henggeler 1999 | Meet DSM-III-R criteria for substance abuse or dependence | Personal Experience Inventory | None | None | Yes |

| Report ID | Study ID | Cut off for substance abuse | Substance Abuse Measure | Externalising/ Internalising Measure | Family Functioning Measure | Included in Meta-analysis? |
|---|---|---|---|---|---|---|
| Liddle 2001 | Liddle 2001 | Use drugs 3x a week | Form 30 for self and parent report plus urinalysis- reviewed by blinded clinicians and turned into 1-15 severity rating. | Acting out behaviours scale (Externalising only) | Global Health Pathology Scale of the Beavers Interactional Competence Scales | No (Poor quality) |
| Waldron 2001 | Waldron 2001 | Met DSM-IV criteria for substance abuse or dependence | Form 90 Substance Use Interview- cannabis use only | Youth Self-Report of the Child Behavior Checklist (CBC) | None | Yes |
| Henggeler 2002 | Henggeler 1999 | Meet DSM-III-R criteria for substance abuse or dependence | Personal Experience Inventory | None | None | No (Follow-up) |

| Report ID | Study ID | Cut off for substance abuse | Substance Abuse Measure | Externalising/ Internalising Measure | Family Functioning Measure | Included in Meta-analysis? |
|---|---|---|---|---|---|---|
| Liddle 2004 | Liddle 2004 | Yes- referred for outpatient treatment for a substance abuse problem consistent with American Society of Addiction Medicine (ASAM) criteria | Form 30 Substance Use Interview | Youth Self-Report of the CBC | Adolescent Daily Interview- Positive family interactions (data taken from 2009 report on this study) | Yes |
| Dennis 2004 | Dennis 2004 | Self-report one or more DSM-IV criteria for cannabis abuse or dependence | Global Appraisal of Individual Needs (GAIN)- Days abstinent in last 90 days* | Global Appraisal of Individual Needs (GAIN)* | Family Environment Scale- cohesion subscale* | Yes |
| Slesnick 2005 | Slesnick 2005 | Report at least ten days of substance use in the past 90 days or meet DSM-IV criteria for a Psychoactive Substance Use Disorders | Form 90 Substance Use Interview | Youth Self-Report of the CBC | Family Environment Scale | No (extractable data not provided) |

| Report ID | Study ID | Cut off for substance abuse | Substance Abuse Measure | Externalising/ Internalising Measure | Family Functioning Measure | Included in Meta-analysis? |
|---|---|---|---|---|---|---|
| Henggeler 2006 | Henggeler 2006 | Met DSM-IV criteria for substance abuse or dependence | Form 90 Substance Use Interview- drug classes reported separately. Marijuana scores reported in meta-analysis as 98% of participants met criteria for abuse or dependence | Youth Self-Report of the CBC | None | Yes |
| Liddle 2008 | Liddle 2008 | Be 'a drug user' | Personal Experience Inventory | None | None | Yes |
| Liddle 2009 | Liddle 2004 | Yes- referred for outpatient treatment for a substance abuse problem consistent with American Society of Addiction Medicine (ASAM) criteria | Form 30 Substance Use Interview | Youth Self-Report of the CBC | Adolescent Daily Interview- Positive family interactions | Yes |

| Report ID | Study ID | Cut off for substance abuse | Substance Abuse Measure | Externalising/ Internalising Measure | Family Functioning Measure | Included in Meta-analysis? |
|---|---|---|---|---|---|---|
| Henderson 2010 | Henderson 2010 | 'Endorse substance abuse problems' | Form 90 Substance Use Interview | None | Family Environment Scale-cohesion subscale | No (Poor quality) |
| Robbins 2011 | Robbins 2011 | Self-report illicit drug use in the 30-day period preceding the baseline assessment or had to be referred from an institution (e.g., detention, residential treatment, court, etc.) for drug abuse outpatient treatment. | Form 30 Substance Use Interview | None | A composite scale created from the Parenting Practices Questionnaire and the Family Environment Scale | Yes |

| Report ID | Study ID | Cut off for substance abuse | Substance Abuse Measure | Externalising/ Internalising Measure | Family Functioning Measure | Included in Meta-analysis? |
|---|---|---|---|---|---|---|
| Horigan 2015 | Robbins 2011 | Self-report illicit drug use in the 30-day period preceding the baseline assessment or had to be referred from an institution (e.g., detention, residential treatment, court, etc.) for drug abuse outpatient treatment. | Form 90 Substance Use Interview | None | A composite scale created from the Parenting Practices Questionnaire and the Family Environment Scale | No (Follow-up) |
| Valdez 2013 | Valdez 2013 | Current (past month) use of on e or more illicit substances or alcohol, use of illicit substances or alcohol on at least six occasi ons in the past | Center for Substance Abuse Treatment's Government Performance and Results Act (GPRA) Client Outcome Questionnaire | Conner's Ratings for behavioral problems | Family Adaptability and Cohesion Evaluation Scale (FACES III) | No (Poor quality) |
| Slesnick 2013 | Slesnick 2013 | Met DSM-IV criteria for alcohol or drug abuse or dependence | Form 90 Substance Use Interview* | Youth Self-Report of the CBC* | Family Environment Scale-cohesion subscale* | Yes |

| Report ID | Study ID | Cut off for substance abuse | Substance Abuse Measure | Externalising/ Internalising Measure | Family Functioning Measure | Included in Meta-analysis? |
|---|---|---|---|---|---|---|
| Rigter 2013 | Rigter 2013 | Met DSM-IV criteria for cannabis abuse or dependence | Form 90 Substance Use Interview-cannabis only | None | None | Yes |
| Dakof 2015 | Dakof 2015 | Met DSM-IV criteria for substance abuse or dependence | Form 90 Substance Use Interview | Youth Self-Report of the CBC (Externalising only) | None | Yes |
| Liddle 2018 | Liddle 2018 | Met DSM-IV criteria for substance abuse or dependence | Personal Experience Inventory | Youth Self-Report of the CBC | None | Yes |

# Appendix I- SIP: Author Guidance- The Cognitive Behaviour Therapist

**Aims and Scope**

*The Cognitive Behaviour Therapist* is published for the British Association for Behavioural and Cognitive Psychotherapies and is the sister Journal to *Behavioural and Cognitive Psychotherapy*

The Cognitive Behaviour Therapist is an interdisciplinary peer reviewed journal aimed at CBT practitioners. Published online, the journal will publish a range of types of papers (see below for a full description of each) that support CBT therapists in improving their delivery of CBT, supervision and training and/or develop our knowledge and understanding of CBT across all areas.

A particular feature of the journal is that its electronic nature is designed to ensure timeliness of publication and professional debate whilst also ensuring rigorous standards in the dissemination of high-quality materials with relevance to the practice of the cognitive and behaviour therapies.

**Editorial Governance**

*The Cognitive Behaviour Therapist* encompasses most areas of human behaviour and experience, and represents many different research methods, from quantitative to qualitative research, how to flexibly implement specific clinical interventions right through to detailed case studies. Under the guidance of its editorial board *the Cognitive Behaviour Therapist* aims to reflect and influence the continuing changes in the concepts, methodology, and techniques within the cognitive and behaviour therapies.

**Editorial Statement – scope of journal content**

The Editors welcome authoritative contributions from people involved, in the practice, research, education, training and supervision in the cognitive and behaviour therapies. Articles must be original and focused upon cognitive and/or behaviour therapy. There is no formal word limit but concision is recommended.

In terms of subject areas, our scope includes

- the delivery of CBT
- supervision of CBT
- training in CBT
- service model and forms of delivery of CBT.

Papers on these subject areas may fit within any of the types of papers detailed below.

Papers should be submitted online at https://mc.manuscriptcentral.com/cbt

Manuscripts should be submitted with any identifiers removed for blind review. If authors fail to omit identifiers, anonymised review cannot be guaranteed.

The Editor-in-Chief and Editorial Team will make an initial decision on of whether submitted papers fall within the remit of the journal and/or are of sufficient interest and importance to warrant full review.

All articles must include the following sections:

- **Key Learning Aims** (3 – 5 bullet points)
  - Position – After the Abstract and Keywords
  - Intention – What will the reader learn through reading the paper?
- **Key Practice Points** (3 – 5 bullet points)
  - Position – before the references
  - Intention – a summary of the papers with clear and practical implications for the day-to-day practice of CBT therapists
- **Further Reading**
  - Position – before the references and after the Key Practice Points
  - Intention – to direct the reader to other relevant follow up literature

This stipulation is in keeping with the practitioner and professional development aims of the journal.

The main types of articles published are detailed below as a guide. Many of these will be therapy related but tCBT also welcomes papers related to subject areas such as CBT supervision and training.

Most papers will have a subject area (e.g. therapy, assessment, supervision, training, service development) and a paper type (e.g. Original Research, Case Study, Review) e.g. a single case study looking at the impact of supervision, an empirically grounded clinical guidance paper focussing on a training method.

**Research Transparency**

*The Cognitive Behaviour Therapist* believes in the importance of transparent and reproducible research. We therefore strongly encourage authors to make their evidence, data and other materials that underpin their findings openly available to readers which is outlined in our Research Transparency Policy. Authors will be asked on submission to include in their cover letter to the Editor whether they have made their data publicly available and confirm the inclusion of the Data Availability Statement. If the authors are not making their data publicly available, we ask them to state the reason why in their cover letter.

## Types of Paper

**Original Research**

Research evidence is at the heart of the practice of cognitive and behavioural psychotherapists. Original research will be published that directly relevant to the practice of CBT, such as the therapeutic relationship, therapeutic process and the evaluation of therapeutic strategies and techniques. It is expected that such reports

meet both the necessary standards of scientific rigour and the journal's requirement of clear implications for the practice of CBT. Consequently, the description of the research and the presentation of results should be sufficiently brief to enable sufficient discussion of the practice implications. Consideration will be given to quantitative, qualitative and mixed approaches given appropriate fit between the question, methodology and research methods chosen.

For examples see:

Hutton, J., Ellett, L., & Berry, K. (2017). Adult attachment and paranoia: An experimental investigation. *The Cognitive Behaviour Therapist, 10*, E4. doi:10.1017/S1754470X17000058

Kobori, O., Salkovskis, P., Pagdin, R., Read, J., & Halldorsson, B. (2017). Carer's perception of and reaction to reassurance seeking in obsessive compulsive disorder. *The Cognitive Behaviour Therapist, 10*, E7. doi:10.1017/S1754470X17000095

McManus, F., Leung, C., Muse, K., & Williams, J. (2014). Understanding 'cyberchondria': An interpretive phenomenological analysis of the purpose, methods and impact of seeking health information online for those with health anxiety. *The Cognitive Behaviour Therapist, 7*, E21. doi:10.1017/S1754470X14000270

## Style Guide

**Title page**

This should uploaded as a separate file the main text to ensure blind review.

The title should phrase concisely the major issues. Author(s) to be given with departmental affiliations and addresses, grouped appropriately. A running head of no more than 40 characters should be indicated.

The following statements should be included on the title page:

**Acknowledgements**

You may acknowledge individuals or organizations that provided advice, support (non-financial).

**Conflicts of Interest**

Authors should include a Conflicts of Interest declaration in their title page. Conflicts of Interest are situations that could be perceived to exert an undue influence on an author's presentation of their work. They may include, but are not limited to, financial, professional, contractual or personal relationships or situations. Conflicts of Interest do not necessarily mean that an author's work has been compromised. Authors should declare any real or perceived Conflicts of Interest in order to be transparent about the context of their work. If the manuscript has multiple authors, the author submitting the title page must include Conflicts of Interest declarations relevant to all contributing authors.

Example wording for your Conflicts of Interest declaration is as follows: "Conflicts of Interest: Author A is employed at company B. Author C owns shares in company D, is on the Board of company E and is a member of organisation F. Author G has received grants from company H." If no Conflicts of Interest exist, your declaration should state "Conflicts of Interest: None".

**Data Availability Statement**

This is a brief statement about whether the authors of an article have made the evidence supporting their findings available, and if so, where readers may access it. More information on Data Availability Statements and example statements can be found here. Please note that if you are not making your data publicly available, we ask you to state the reason why in your cover letter to the Editor. Also see information on Data Availability below in these instructions.

**Financial support**

Please provide details of the sources of financial support for all authors, Including grant numbers. For example, "This work was supported by the Medical research Council (grant number XXXXXXX)". Multiple grant numbers should be separated by a comma and space, and where research was funded by more than one agency the different agencies should be separated by a semi-colon, with "and" before the final funder. Grants held by different authors should be identified as belonging to individual authors by the authors' initials. For example, "This work was supported by the Wellcome Trust (A.B., grant numbers XXXX, YYYY), (C.D., grant number ZZZZ); the Natural Environment Research Council (E.F., grant number FFFF); and the National Institutes of Health (A.B., grant number GGGG), (E.F., grant number HHHH)". Where no specific funding has been provided for research, please provide the following statement: "This research received no specific grant from any funding agency, commercial or not-for-profit sectors."

**Main Text (anonymised with no author information)**

This should be uploaded as a .doc file with the following running order (unless a Case study). The following format is based on APA style, which should be followed throughout: http://www.apastyle.org/

**Abstract**

This should summarize the article in no more than 250 words, references should not be included in the abstract.

**Keywords**

Please include up to six key words that could be used to effectively search for the article.

**Key Learning Aims**

**Body of paper**

This should begin with an introduction, succinctly introducing the point of the paper to those interested in the general area of the journal. Attention should be paid to the Editorial Statement. The appropriate positions of tables and figures should be indicated in the text. Footnotes should be avoided where possible.

**Ethical Statements**

All papers should include a statement indicating that authors have abided by the Ethical Principles of Psychologists and Code of Conduct as set out by the BABCP and BPS. Authors should also confirm if ethical approval was needed, by which organisation, and provide the relevant reference number. If no ethical approval was obtained, the authors should state what governance arrangements were in place (e.g. audit committee approval).

**Key Practice Points**

**Further Reading**

**References**

Please use APA style for the in-text citations and references. In the reference list there is an additional requirement that author names be listed in **bold** face. For example:

**Grady, J. S., Her, M., Moreno, G., Perez, C., & Yelinek, J.** (2019). Emotions in storybooks: A comparison of storybooks that represent ethnic and racial groups in the

United States. *Psychology of Popular Media Culture, 8*(3), 207–217. https://doi.org/10.1037/ppm000...

Authors are encouraged to make use of referencing software packages (e.g. Endnote, Mendeley, Reference Manager etc.) to assist with formatting - extensions for APA formatting are easily accessible. Authors are also reminded to use bold face for author names in the reference list.

**Tables and Figures**

These should not be included in the body of the manuscript text, but uploaded as individual files.

Use text anchors to show their intended position within the manuscript.

Numbered figure captions should be provided.

**Tables**

Use APA style. Tables should be provided in editable Word format. They should be numbered and given explanatory titles.

Name your uploaded file to correspond with the caption in the manuscript.

**Figures**

Use APA style. All artwork should be submitted as separate TIFF format files.

The minimum resolution for submission of electronic artwork is:

- Halftone Images (Black and White Photographs only): 300 dpi (dots per inch).
- LineTone (Black and White Photographs plus Line Drawings in the same figure): 600 dpi (dots per inch).
- Bitmap (Line Drawings only): 1200 dpi (dots per inch).

Please see this link for full guidance on artwork

**Supplementary Files**

Where unpublished material e.g. behaviour rating scales or therapy manuals are referred to in an article, copies should be submitted as an additional document (where copyright allows) to facilitate review. Supplementary files can be used to convey supporting or extra information to your study, however, the main manuscript should be able to 'stand-alone'. Supporting documents are reviewed but not copyedited on acceptance of the article. They can therefore be submitted in PDF format, and include figures and tables within the text. There is no word limit for supporting online information.

# Appendix J- SIP: Grouped binary logistic regressions

**Overall fit of the models**

| | **N completer** | **N non- completer** | **Goodness of fit of model** | **$R^2$ (Nagelkerke $R^2$)** |
|---|---|---|---|---|
| Demographics | 185 | 32 | $X^2(6)= 13.66$, $p= .034$ | .11 |
| Trauma history | 98 | 11 | $X^2 (5)= 5.25$, $p= .386$ | .10 |
| Causal beliefs | 60 | 9 | $X^2 (3)= 1.90$, $p= .595$ | .05 |
| Psychological functioning | 138 | 17 | $X^2 (6)= 9.77$, $p= .135$ | .12 |

**Demographics**

| Variable | Parameter coding | B (SE) | Adjusted odds ratio | 95% CI | Wald statistic |
|---|---|---|---|---|---|
| Gender | Female (0) | | | | |
| | Male (1) | 1.29 (0.52) | 3.65 | 1.32 – 10.06 | $X^2$ (1)= 6.26, $p$= .012 |
| Age | 31+ (0) | | | | |
| | 21-30 (1) | 0.91 (0.71) | 2.50 | 0.62 – 9.96 | $X^2$1)= 1.67, $p$= .196 |
| | 15-20 (2) | 1.13 (0.66) | 3.11 | 0.86 – 11.25 | $X^2$ (1)= 2.98, $p$= .084 |
| Ethnicity | Non-BME (0) | | | | |
| | BME (1) | 0.07 (0.46) | 1.08 | 0.43 – 2.66 | $X^2$ (1)= 0.02, $p$= .877 |
| Wait time | Low (0) | | | | |
| | Average (1) | -0.36 (0.47) | 0.70 | 0.28– 1.74 | $X^2$ (1)= 0.59, $p$= .442 |
| | High (2) | -0.47 (0.50) | 0.62 | 0.23 – 1.67 | $X^2$ (1)= 0.58, $p$= .877 |

**Trauma history**

| Variable | Parameter coding | B (SE) | Adjusted odds ratio | 95% CI | Wald statistic |
|---|---|---|---|---|---|
| No. of traumas experienced | Low (0) | | | | |
| | Average (1) | -0.81 (1.10) | 0.45 | 0.05 – 3.82 | $X^2$ (1)= 0.54, $p$= .461 |
| | High (2) | 0.51 (0.66) | 1.67 | 0.45 – 6.14 | $X^2$ (1)= 0.31, $p$= .578 |
| Trauma related to psychosis | No trauma (0) | | | | |
| | Trauma (1) | -0.72 (1.00) | 0.48 | 0.07 – 3.43 | $X^2$ (1)= 0.52, $p$= .469 |
| Interpersonal trauma | No trauma (0) | | | | |
| | Trauma (1) | -0.67 (1.10) | 0.51 | 0.06 – 4.41 | $X^2$ (1)= 0.37, $p$= .543 |
| PTSD symptoms | No PTSD (0) | | | | |
| | PTSD (1) | -0.22 (0.76) | 0.80 | 0.18 – 3.58 | $X^2$ (1)= 0.08, $p$= .771 |

**Causal beliefs**

| Variable | Parameter coding | B (SE) | Adjusted odds ratio | 95% CI | Wald statistic |
|---|---|---|---|---|---|
| Cause- chemical imbalance | Disagree (0)<br>Agree (1) | 0.53 (0.86) | 1.69 | 0.31 – 9.14 | $X^2$ (1)= 0.38, $p$= .540 |
| Cause- mental attitude | Disagree (0)<br>Agree (1) | -0.80 (0.74) | 0.45 | 1.06 – 1.90 | $X^2$ (1)= 1.18, $p$= .277 |
| Cause- trauma | Disagree (0)<br>Agree (1) | -0.31 (0.75) | 0.74 | 0.17 – 3.16 | $X^2$ (1)= 0.17, $p$= .679 |

**Psychological functioning**

| Variable | Parameter coding | B (SE) | Adjusted odds ratio | 95% CI | Wald statistic |
|---|---|---|---|---|---|
| Subjective wellbeing | High (0 | | | | |
| | Average (1) | -2.28 (1.47) | 0.10 | 0.06 – 1.83 | $X^2$ (1)= 2.41, $p$= .121 |
| | Low (2) | -0.77 (1.25) | 0.46 | 0.04– 5.36 | $X^2$ (1)= 0.38, $p$= .538 |
| Work and social functioning | Non-clinical (0) | | | | |
| | Mild/moderate (1) | -1.24 (0.78) | 0.29 | 0.06 – 1.32 | $X^2$ (1)= 2.53, $p$= .110 |
| | Severe (2) | -0.32 (0.77) | 0.73 | 0.16 – 3.30 | $X^2$ (1)= 0.17, $p$= .679 |
| Psychological distress | Non-clinical (0) | | | | |
| | Mild/moderate (1) | 0.33 (0.70) | 1.39 | 0.35 – 5.46 | $X^2$ (1)= 0.22, $p$= .637 |
| | Severe (2) | 0.31 (1.04) | 1.36 | 0.18 – 10.48 | $X^2$ (1)= 0.09, $p$= .770 |

# Appendix K- SIP: Interview schedule- Therapists

*Scene setting: Ask therapists to think of and hold in mind examples of clients who have dropped out of treatment with them.*

1. Do you feel that clients generally know why they are seen by a psychologist, and what you are offering?

2. What do you think clients generally hope to get out of the sessions?

3. What in your opinion are the main reasons that clients do not take up or continue with the psychological therapy they are offered?

4. Do you think anything about clients' identity ever affects their ability to get on with you as a therapist e.g. differences or similarities in age, ethnicity, gender etc.?

5. In what way, if any, do you think clients' mental health difficulties at the time of seeing you affected their uptake of or engagement with therapy?

6. Do you know what views clients have about what caused their mental health difficulties? (e.g. medical model, trauma model etc.). Do you feel that treatments offered tend to be in line with these views and do you think this has an impact on engagement?

7. In what way, if any, do you think clients' trauma history affects their uptake of or engagement with therapy?

8. Do you have any thoughts on anything the service could do differently that would enable people to better engage in therapy or gain feedback from clients when they drop out?

# Appendix L- SIP: Client information sheet

Early Intervention in Psychosis Service
Warneford Hospital
Headington
Oxford
OX3 7JX
Tel: 01865 902724
Fax: 01865 261740
Web: www.oxfordhealth.nhs.uk
**Email: oeis@oxfordhealth.nhs.uk**

**INFORMATION SHEET**

**Project Title: Understanding engagement with psychological therapy**

We'd like to invite you to take part in our service evaluation study. Before you take part, it is important that you understand what the project is and what it would involve for you. Please take a moment to read this information sheet and discuss any questions you have with Emily Gray.

**What is the purpose of the evaluation project?**

The Early Intervention service offers psychological therapy to everyone under the care of the team. However, some people just attend a psychology assessment or come to some sessions of therapy and then do not want any more. There are lots of reasons why this might be, and we are interested to talk to people who decline therapy or finish therapy early to find out more about their experience. Through this, the service is hoping to improve how therapy is offered and delivered in the service.

**Why have I been invited?**

You have been invited because you are someone who is involved in the Early Intervention in Psychosis service. You have previously attended either an assessment or at least one session of psychological therapy but either did not take up therapy or did not complete a full course of the treatment.

**What will happen to me if I decide to take part?**

If you decide to take part, you will have an interview with Emily Gray (Trainee Clinical Psychologist). Emily is not affiliated with the service. This interview will be a relatively

unstructured conversation about your experience of the psychology assessment and/or therapy and what factors influenced your choosing to end treatment. The interview will be audio-recorded and will last approximately one hour.

**Are there any possible disadvantages or risks from taking part?**

Although this interview is not intended to be upsetting, some people may find it upsetting to reflect on their experience of being unwell or their interaction with mental health services. Questions asked will be regarding your experience of psychological input. If you do feel upset following your conversation, you are invited to contact Emily or your care co-ordinator. They will be able to speak to you about your experience and refer you to further support if needed.

**What are the possible benefits of taking part?**

Although there is no direct benefit, it may be that you enjoy the time to be able to feedback your experience of psychology input from the team and make suggestions. The service would like to improve the uptake and experience of therapy so your participation may help to improve the experience of future service users.

**Will my taking part in this project be kept confidential?**

The Early Intervention team will be informed that you have agreed to have a conversation with Emily but the content of what you talk about will not be shared with them. The interviews will be recorded, and the recording will be kept on a secure and encrypted device. Emily will be the only person who listens to this recording. What you have said in the interview will be transcribed (written down) and will not include any details that reveal your personal identity. The transcript will be analysed by Emily, and anonymised quotes might be used in published reports. These quotes will be chosen so that you are not identifiable from them. If you would prefer your quotes not to be included in the report, then you may opt out of your responses being used in this way on the consent form. The recording will be deleted after the conclusion of the project.

If from the conversation you have with Emily it becomes apparent that you or another person are at immediate risk or experiencing significant harm, Emily will need to inform the clinical care team at the Early Intervention service or other services to help keep you or others safe. Emily will discuss this with you before doing so.

**Will I be reimbursed for taking part?**

You will be paid £10 for taking part in this interview.

**What will happen to the results of this project?**

This project will be written up as part of Emily Gray's doctoral thesis. On successful submission of the thesis, it will be deposited both in print and online in the University archives, to facilitate its use in future research. The findings may also be published in an academic journal. The results of the project will be shared with the Early Intervention team and may also be shared with similar teams and psychologists in the UK, to share the learning. If you wish to receive a summary of the results once the project has been completed, please email Emily Gray by September 2021 at emily.gray@hmc.ox.ac.uk.

**What if there is a problem?**

If you wish to complain about any aspect of the way in which you have been approached or treated, or how your information is handled during this interview, you can contact any member of the research team, Emily Gray (emily.gray@hmc.ox.ac.uk), Louise Johns (louise.johns@oxfordhealth.nhs.uk) or Craig Steel (craig.steel@hmc.ox.ac.uk). You can also contact the Patient Advisory Liaison Service (PALS) which is a confidential NHS service that can provide you with support for any complaints or queries you may have regarding the care you receive as an NHS patient. If you wish to contact the PALS team please contact PALS@oxfordhealth.nhs.uk or via the freephone number: 0800 328 7971.

If you would like any further information, please contact Emily Gray by e-mail or in writing at

emily.gray@hmc.ox.ac.uk

The Oxford Institute of Clinical Psychology Training and Research

Isis Education Centre, Warneford Hospital, Oxford, OX3 7JX

*Thank you for considering taking part in this service evaluation project.*

# Appendix M- SIP: Interview schedule- Clients

1. Do you remember seeing a psychologist in the Early Intervention team for one or more appointments? Do you know why you were seen, and what the psychologists were offering?

2. Did you have any goals for psychological therapy? What were you hoping to get out of the sessions?

3. What in your opinion were the main reasons that you did not take up or continue with the psychological therapy you were offered?

4. Do you think anything about your identity affected your ability to get on with your therapist e.g. your age, ethnicity, gender etc.?

5. In what way, if any, do you think your mental health difficulties at the time of seeing the psychologist affected your uptake of or engagement with therapy?

6. What are your views about what caused your mental health difficulties? Were the treatments you were offered in line with these views or different? Did this have an impact on you engaging with treatment? (if the person talks about other treatments, e.g. medication, admission, then ask specifically about psychological therapy).

7. In what way, if any, do you think any previous difficult experiences during your life affected your uptake of or engagement with therapy?

8. Is there anything the service could have done that would have made you more likely to take up or continue with therapy?

# Appendix N- SIP: Therapist quotes to support description of themes

*FG1/ FG2 indicates focus group 1 / 2,*

*T1/T2/T3 indicates therapist 1 / 2 / 3*

| Theme | Subtheme | Example quote |
|---|---|---|
| *Therapy factors* | Topics too difficult to talk about | FG1, T2: But also what people feel able to talk about, I think what you just said there is a really important thing you know, there's there's people that I've worked with who it feels like for the first part, you're kind of doing therapy in in the dark because you know that there's things that are happening for them that they don't feel able to talk about |
| | | FG1, T3: There was the lovely woman that I met with and um and she had a lot of trauma in her past and was actually coping really well. And I think just decided that she was coping too well and didn't want to go near anything that was difficult |
| | Building alliance | FG1, T2: So yeah, I think like I tend to spend quite a bit of time in-investing in that at the beginning and hopefully get some, like you said, early gains and it helps people to feel more positive than about therapy and feel hopeful that it can work and things can change. |
| | | FG2, T3: I think sometimes there's a bit of a mismatch between, I think I look sometimes a little bit like a primary school teacher and there can be a mismatch. If I've got a young man who is quite a kind of Jack the lad type person, and then |

| | | |
|---|---|---|
| | | I don't know whether they feel like I can help them sometimes. |
| | | FG1, T4: Yeah, I've also had that experience um several times of either people hearing things that I've said or worrying that I might be part of, you know this, you know a conspiracy or kind of or trying to set them up in some way. And kind of really struggling with that because what kind of really wanting to engage but also just finding it really hard to know whether they could trust me or not. And the other thing that I think sometimes gets in the way is um kind of stigma. |
| | Flexibility | FG1, T4: I mean, I think one of the things that makes me really passionate about working in EI and why I always want to do is because of the flexibility so you know you can see people later, you can kind of see people outside you can, you know, I feel like the I, I mean like in [service], which is where I work, we definitely are able to do that and offer people that flexibility and um I do think that makes a massive difference. |
| | | FG2, T3: I think there's a slight- I think there's two directions in that we can be flexible in, and one is to see people sooner and one is to see people later and with the on hold business, we are very flexible with that, if they're not in the right time right now when they get to the top of this. However, if the right time would be sooner than when we can see them on the waiting list, I think we are a little more rigid about that. |
| | What is psychology? | FG2, T1: a lot of people may be referred for psychology, but it's just a word to them. They have no idea what it actually means. |

| | | |
|---|---|---|
| | What is psychology? – Importance of care co-ordinator | FG2, T2: I think that really really depends on the care-cordinator that refers them. Some people come so well-prepped, they've already started on the journey of doing the work, and that's great. And some people come and they don't know anything, they might be in the service two years. |
| | What is psychology? – CBT as active process | FG2, T2: So a big problem, I think, is people thinking, 'Oh yeah, I'd like to come along for therapy', but not really realizing that it is a very active process. |
| | What is psychology? – Expectations and goals | FG1, T4: And I think that that's you know a conversation that I often have with people and then we can talk together about what is and isn't possible and kind of come to then a shared kind of understanding about what- what would be possible within the sessions |
| *Personal factors* | Ambivalence | FG2, T2: I think um getting better enough. So you get people that you know you're working on a goal and they kind of get to a point where things are OK, you haven't really finished the work or agreed to finish, but they're kind of better enough. |
| | | FG1, T3: I think it comes down to relevance for them at the time. Ultimately, I think that's well, you might decide it's something else, but I think that's my summary of it. |
| | | FG2, T2: I would just say also ambivalence. I think there's some people that are ambivalent about therapy. Part of them wants it, part of them doesn't. |
| | Ability | FG1, T2: But you know, even despite text reminders and things, therapy just sort of falls down the list or or those kind of organizational |

| | | |
|---|---|---|
| | | skills which are perhaps, um, not not there and not as developed as for for some other people. |
| | | FG2, T2: I think sometimes when people can't engage it's because they, they've got cognitive problems. So either like I said with their organization, that might just be just disorganization, but some people have problems with memory, attention, decision making, and all of those things can really get in the way of being able to access CBT. |
| | | FG1, T4: Yeah, I've also had that experience um several times of either people hearing things that I've said or worrying that I might be part of, you know this, you know a conspiracy or kind of or trying to set them up in some way. |
| | Situation | FG1, T2: And then you get the other group where engagement isn't there and life just feels quite chaotic. I think it's a time in people's lives often if they're young, younger people where there's a lot going on. Perhaps. Um, and so their engagement is is less. |
| | | FG2, T2: And yeah, they may be in the right place for psychology, but generally I find, well, certainly the COVID situation at the moment, is a lot of fire fighting in terms of their social situation, whether they are in the right place within their um life at the moment for psychology as opposed to whether their mental health is ready for psychology. |

# Appendix O- SIP: Client quotes to support description of content

| Participant | Topic | Example quote |
|---|---|---|
| *Lucy* | Timing- practicalities | Lucy: Because it used to be um with the travelling to see a therapist I think it was like with the college scheduling and um sometimes I feel like um it would like I wouldn't be able to manage my time properly to go in and out of the hospital as well as with the college but I think it's more to do with organisation skills and how perhaps I wasn't able to juggle CBT alongside my college work. |
| | Timing- life events | Lucy: So um back then I had lots of things going on such as like exams and also I was thinking a lot about um whether I should like um do CBT or whether I should just focus on the work I was doing for my A levels |
| | Timing- online therapy | Lucy: the difference is now, so I'm doing CBT through my-a video call so that makes it a lot more manageable as well, timing wise |
| | Timing- waitlist | Lucy: It felt, um I suppose, I think- I- between the time I was recovering and the therapy it feels like it stretched too far like it's been too long for me I guess to see a therapist and I think in that initial year even though I had the support of [my care co-ordinator] it felt um difficult to manage my stress level or my anxiety level. |
| | Emotional intensity – therapy as too emotional | Lucy: But then also maybe it was also about um like the subjects that would be discussed and how that would affect my mood as well. I think um if I go too personal with the therapist it felt somehow, um I don't know, I'd become too emotional |

| | | |
|---|---|---|
| | | sometimes and that… I think this idea of having strong emotions it… sometimes because I feel like I'm scared of experiencing strong emotions and so I try not to experience it. |
| | Emotional intensity- online therapy | Lucy: Yeah I think I'm it's like um my idea of like um.. so in person you have to be like in one room and like it feels like a private conversation but then even though it is like, online is like also a private conversation, it feels like um it feels like I can, I guess, think more about what I want to say. |
| | Emotional intensity- protecting therapist | Lucy: I didn't want to, to feel like I'm adding more stress to, to like my therapist, it feels like sometimes I would want to find practical solutions. I think…<br><br>Interviewer: So are you saying you'd like steer away from the more emotional topics from fear of putting more on your therapist is that, am I understanding?<br><br>Lucy: Yeah |
| | Content- focus on psychosis vs. not | Lucy: I think um it felt maybe not so much maybe it was more like about managing worries and um also about trying to um manage worries in the way that would I think um- I don't know whether it would like distract me from overthinking … She gave me lots of tools but then at the same time it felt as though we didn't discuss much about psychosis and what happened<br><br>Interviewer: mmhmm and how do you feel about that? |

| | | |
|---|---|---|
| | | Lucy: I don't know partly I was relieved but also partly thinking I felt like I wanted to discuss it but then also at the same time it felt maybe it was too early to discuss that because um I- I don't know I it felt um like maybe I would want to discuss it but to also like um have more understanding about psychosis and um to- I guess- being told um what um what the symptoms are maybe and um how to manage with those symptoms um like when those symptoms appear. Like for example if I were hearing voices or something, it felt maybe like like back then I was not sure how to deal with it and I would just like ignore the voices or like not discuss it but then Um it felt as though I just hid it also it felt like I was experiencing it alone |
| | Content- need for balance | Lucy: I don't think it's more to do about me wanting to avoid talking about my past but sometimes it can also be overwhelming. I guess having a balance of, I suppose I think looking into the past and also finding um practical ways to, maybe go on with my everyday life. |
| *Carlos* | Timing- In hospital | Carlos: Because I was, imagine being in a mental hospital like around people with mental problems 24/7 it's a bit *sighs* and then being called to talk about your problems and your issues what you have at the present, it's just *pause 1s* extra stress I just don't really want |
| | Timing- repeated questioning | Carlos: I was repeating, man I was repeating so many questions at the same time and every day almost, almost every day. Because someone would ask about, I was being asked by multiple people who were like, yeah and what happened. And it |

| | | |
|---|---|---|
| | | felt tiring, and it felt stressful and it felt depressing at the same time |
| | Emotional intensity- Difficult topics | Carlos: Yeah, sometimes, some questions were unbearable to be fair<br><br>Interviewer: Mmhmm. Was that because they were repetitive or because they were =quite difficult questions=<br><br>Carlos: =some of them were= quite difficult questions yeah |
| | Emotional intensity- more stable now | Interviewer: Mmhmm and do you feel like, you were saying you feel a bit more stable now than you did back then, do you-<br><br>Carlos: -A lot more stable yeah-<br><br>Interviewer: -Do you think that puts you in a position where-<br><br>Carlos: -Where I can actually go and go through that kind of stuff again maybe find something new about it<br><br>Interviewer: Mmhmm<br><br>Carlos: Which I maybe couldn't see or didn't see or wasn't able to see |
| | Content – wrong advice | Carlos: Because the therapist gave me wrong advice at the wrong time |

| | | |
|---|---|---|
| | | Interviewer: Yeah<br><br>Carlos: I just stepped back from that<br><br>Interviewer: Yeah, okay so it could have been helpful but that one kind of bit that didn't feel helpful kind of put you off it<br><br>Carlos: Yeah, yeah<br><br>Interviewer: Okay<br><br>Carlos: It's a bit unfortunate, like I don't blame anyone but that's like how I felt at the time |

# Appendix P: MRP: Author Guidelines- British Journal of Clinical Psychology

1. SUBMISSION

Authors should kindly note that submission implies that the content has not been published or submitted for publication elsewhere except as a brief abstract in the proceedings of a scientific meeting or symposium.

2. AIMS AND SCOPE

The *British Journal of Clinical Psychology* publishes original research, both empirical and theoretical, on all aspects of clinical psychology:

clinical and abnormal psychology featuring descriptive or experimental studies

aetiology, assessment and treatment of the whole range of psychological disorders irrespective of age group and setting

biological influences on individual behaviour

studies of psychological interventions and treatment on individuals, dyads, families and groups

For specific submission requirements, read the Author Guidelines.

The Journal is catholic with respect to the range of theories and methods used to answer substantive scientific problems. Studies of samples with no current psychological disorder will only be considered if they have a direct bearing on clinical theory or practice.

The following types of paper are invited:

papers reporting original empirical investigations;

theoretical papers, provided that these are sufficiently related to empirical data;

review articles, which need not be exhaustive, but which should give an interpretation of the state of research in a given field and, where appropriate, identify its clinical implications;

Brief Reports and Comments.

## 3. MANUSCRIPT CATEGORIES AND REQUIREMENTS

Articles should be no more than 5000 words (excluding the abstract, reference list, tables and figures). Brief reports should not exceed 2000 words and should have no more than one table or figure. Any papers that are over this word limit will be returned to the authors. Appendices are included in the word limit; however online appendices are not included.

In exceptional cases the Editor retains discretion to publish papers beyond this length where the clear and concise expression of the scientific content requires greater length (e.g., explanation of a new theory or a substantially new method). Authors must contact the Editor prior to submission in such a case.

Refer to the separate guidelines for Registered Reports.

All systematic reviews must be pre-registered.

## 4. PREPARING THE SUBMISSION

**Free Format Submission**

*British Journal of Clinical Psychology* now offers free format submission for a simplified and streamlined submission process.

Before you submit, you will need:

Your manuscript: this can be a single file including text, figures, and tables, or separate files – whichever you prefer. All required sections should be contained in your manuscript,

including abstract, introduction, methods, results, and conclusions. Figures and tables should have legends. References may be submitted in any style or format, as long as it is consistent throughout the manuscript. If the manuscript, figures or tables are difficult for you to read, they will also be difficult for the editors and reviewers. If your manuscript is difficult to read, the editorial office may send it back to you for revision.

The title page of the manuscript, including a data availability statement and your co-author details with affiliations. *(Why is this important? We need to keep all co-authors informed of the outcome of the peer review process.)* You may like to use this template for your title page.

**Important: the journal operates a double-blind peer review policy. Anonymise your manuscript and prepare a separate title page containing author details.** *(Why is this important? We need to uphold rigorous ethical standards for the research we consider for publication.)*

An ORCID ID, freely available at https://orcid.org. *(Why is this important? Your article, if accepted and published, will be attached to your ORCID profile. Institutions and funders are increasingly requiring authors to have ORCID IDs.)*

To submit, login at https://www.editorialmanager.com/bjcp/default.aspx and create a new submission. Follow the submission steps as required and submit the manuscript.

If you are invited to revise your manuscript after peer review, the journal will also request the revised manuscript to be formatted according to journal requirements as described below.

**Revised Manuscript Submission**

Contributions must be typed in double spacing. All sheets must be numbered.

Cover letters are not mandatory; however, they may be supplied at the author's discretion. They should be pasted into the 'Comments' box in Editorial Manager.

Parts of the Manuscript

The manuscript should be submitted in separate files: title page; main text file; figures/tables; supporting information.

Title Page

You may like to use this template for your title page. The title page should contain**:**

A short informative title containing the major key words. The title should not contain abbreviations (see Wiley's best practice SEO tips);

A short running title of less than 40 characters;

The full names of the authors;

The author's institutional affiliations where the work was conducted, with a footnote for the author's present address if different from where the work was conducted;

Abstract;

Keywords

Data availability statement (see Data Sharing and Data Accessibility Policy);

Acknowledgments.

**Abstract**

Please provide a structured abstract under the headings: Objectives, Methods, Results, Conclusions. For Articles, the abstract should not exceed 250 words. For Brief Reports, abstracts should not exceed 120 words.

Articles which report original scientific research should also include a heading 'Design' before 'Methods'. The 'Methods' section for systematic reviews and theoretical papers should include, as a minimum, a description of the methods the author(s) used to access the literature they drew upon. That is, the abstract should summarize the databases that were consulted and the search terms that were used.

**Keywords**

Provide appropriate keywords.

**Acknowledgments**

Contributions from anyone who does not meet the criteria for authorship should be listed, with permission from the contributor, in an Acknowledgments section. Financial and material support should also be mentioned. Thanks to anonymous reviewers are not appropriate.

Practitioner Points

All articles must include Practitioner Points – these are 2-4 bullet points, following the abstract, with the heading 'Practitioner Points'. These should briefly and clearly outline the relevance of your research to professional practice. (The Practitioner Points should be submitted in a separate file.)

Main Text File

As papers are double-blind peer reviewed, the main text file should not include any information that might identify the authors.

The main text file should be presented in the following order:

Title

Main text

References

Tables and figures (each complete with title and footnotes)

Appendices (if relevant)

Supporting information should be supplied as separate files. Tables and figures can be included at the end of the main document or attached as separate files but they must be mentioned in the text.

**References**

References in published papers are formatted according to the Publication Manual of the American Psychological Association (6th edition). However, references may be submitted in any style or format, as long as it is consistent throughout the manuscript.

**Tables**

Tables should be self-contained and complement, not duplicate, information contained in the text. They should be supplied as editable files, not pasted as images. Legends should be concise but comprehensive – the table, legend, and footnotes must be understandable without reference to the text. All abbreviations must be defined in footnotes. Footnote symbols: †, ‡, §, ¶, should be used (in that order) and *, **, *** should be reserved for P-values. Statistical measures such as SD or SEM should be identified in the headings.

**Figures**

Although authors are encouraged to send the highest-quality figures possible, for peer-review purposes, a wide variety of formats, sizes, and resolutions are accepted.

Basic figure requirements for figures submitted with manuscripts for initial peer review, as well as the more detailed post-acceptance figure requirements.

Legends should be concise but comprehensive – the figure and its legend must be understandable without reference to the text. Include definitions of any symbols used and define/explain all abbreviations and units of measurement.

**Colour figures.** Figures submitted in colour may be reproduced in colour online free of charge. Please note, however, that it is preferable that line figures (e.g. graphs and charts) are supplied in black and white so that they are legible if printed by a reader in black and white. If an author would prefer to have figures printed in colour in hard copies of the journal, a fee will be charged by the Publisher.

**Supporting Information**

Supporting information is information that is not essential to the article, but provides greater depth and background. It is hosted online and appears without editing or typesetting. It may include tables, figures, videos, datasets, etc.

Wiley's FAQs on supporting information.

Note: if data, scripts, or other artefacts used to generate the analyses presented in the paper are available via a publicly available data repository, authors should include a reference to the location of the material within their paper.

General Style Points

For guidelines on editorial style, please consult the APA Publication Manual published by the American Psychological Association. The following points provide general advice on formatting and style.

**Language:** Authors must avoid the use of sexist or any other discriminatory language.

**Abbreviations:** In general, terms should not be abbreviated unless they are used repeatedly and the abbreviation is helpful to the reader. Initially, use the word in full, followed by the abbreviation in parentheses. Thereafter use the abbreviation only.

**Units of measurement:** Measurements should be given in SI or SI-derived units. Visit the Bureau International des Poids et Mesures (BIPM) website for more information about SI units.

**Effect size:** In normal circumstances, effect size should be incorporated.

**Numbers:** numbers under 10 are spelt out, except for: measurements with a unit (8mmol/l); age (6 weeks old), or lists with other numbers (11 dogs, 9 cats, 4 gerbils).

# Appendix Q- MRP: Emails regarding Ethics requirements

**From:** Nigel Wellman <nigel.wellman@admin.ox.ac.uk>
**Date:** 21 November 2019 at 13:11:12 GMT
**To:** "Emily.Gray@oxfordhealth.nhs.uk" <Emily.Gray@oxfordhealth.nhs.uk>
**Cc:** "rpm@oxfordjro.org" <rpm@oxfordjro.org>
**Subject: PID146484 - Appraisal modification in carers for first episode psychosis**

Dear Emily
We have completed an initial triage of your application in CTRG and our view is that your project really constitutes service development rather than research requiring sponsorship and ethical review. Your primary objective is to develop the intervention which would make it a service development project rather than research. If, having developed the intervention, you subsequently wanted to test it in some kind of trial or comparative study then that is the point at which it would cross-over into research. The advantage to you of treating your project as a service development project rather than research is that the project will not need sponsorship and you will not need to obtain ethical and HRA approval for this project, but rather just the agreement of the relevant trust R&D departments to support your project. You will need to amend your documents to reflect that this is a service development project rather than research and to remove all mention of sponsorship and ethical review etc. before submission to R&D.

If you want confirmation of the status of your project, we have a classification group which next meets on 28/11/19 and adjudicates on whether particular projects are audit, research or service development / service evaluation and I can ask the classification group to review your project.

With best wishes

Nigel Wellman

Senior Clinical Research Support Manager | Clinical Trials and Research Governance (CTRG)
Research Services, University of Oxford
Joint Research Office
Boundary Brook House, Churchill Drive Oxford OX3 7GB

---

**From:** Nigel Wellman <nigel.wellman@admin.ox.ac.uk>
**Date:** Monday, 25 November 2019 at 10:04
**To:** "Gray Emily (RNU) Oxford Health" <Emily.Gray@oxfordhealth.nhs.uk>
**Cc:** "rpm@oxfordjro.org" <rpm@oxfordjro.org>
**Subject:** RE: PID146484 - Appraisal modification in carers for first episode psychosis

Dear Emily
That's fine, I have forwarded your documents to the Classification Group who meet on Thursday afternoon so we should have a decision for you by the end of the week. With best wishes. Nigel

---

**From:** Gray Emily (RNU) Oxford Health <Emily.Gray@oxfordhealth.nhs.uk>
**Sent:** 25 November 2019 09:57
**To:** Nigel Wellman <nigel.wellman@admin.ox.ac.uk>
**Cc:** rpm@oxfordjro.org
**Subject:** Re: PID146484 - Appraisal modification in carers for first episode psychosis

Dear Nigel,

Thanks for your response, I would be grateful if it would be possible for you to take it to your classification group for me. As it is a non-routine intervention and I'll be collecting data on it I was under the impression that it would therefore be research. I'm happy for it to be service improvement of course, but would like to be sure!

Best wishes,

Emily

**Re: PID146484 - Appraisal modification in carers for first episode psychosis**

GE

Gray Emily (RNU) Oxford Health <Emily.Gray@oxfordhealth.nhs.uk>
**To:** Nigel Wellman

Tuesday, 3 December 2019 at 14:54

Hi Nigel,

Yes indeed thank you. I've sent the details to the service development lead at Oxford Health so assuming they are happy with the project being approved then I'm happy to go for this.

Best wishes,

Emily

---

**From:** Nigel Wellman <nigel.wellman@admin.ox.ac.uk>
**Date:** Tuesday, 3 December 2019 at 12:27
**To:** "Gray Emily (RNU) Oxford Health" <Emily.Gray@oxfordhealth.nhs.uk>
**Subject:** RE: PID146484 - Appraisal modification in carers for first episode psychosis

Dear Emily
I understand that the Classification Group reviewed your study last week and also came to the conclusion that it is essentially a service development project at this stage. I will be grateful if you can confirm if you are happy to proceed on this basis. With thanks in anticipation. Nigel

---

**From:** Gray Emily (RNU) Oxford Health <Emily.Gray@oxfordhealth.nhs.uk>
**Sent:** 25 November 2019 10:05
**To:** Nigel Wellman <nigel.wellman@admin.ox.ac.uk>
**Subject:** Re: PID146484 - Appraisal modification in carers for first episode psychosis

Thanks Nigel! Much appreciated.

Best wishes,

Emily

---

**From:** "Gray Emily (RNU) Oxford Health" <Emily.Gray@oxfordhealth.nhs.uk>
**Date:** Tuesday, 3 December 2019 at 12:07
**To:** "Ampofo Jelena (RNU) Oxford Health" <Jelena.Ampofo@oxfordhealth.nhs.uk>
**Subject:** Re: PID146484 - Appraisal modification in carers for first episode psychosis

Dear Jelena

Please find attached the completed form for this project. As stated in my previous email, I'd initially prepared the documents thinking this would require full ethics but the sponsor has reviewed it in their classification meeting and decided the following: 'The project has elements of pre-research, development of the eLearning programme, as well as service development and at this stage doesn't require REC/HRA approvals. In the future if the intension is in comparing participants, who will be receiving the eLearning with those who won't, than the project can be classed as a research project (requiring NHS REC and HRA approval).'

I would appreciate your thoughts and approval/further questioning from the perspective of Oxford health.

Best wishes,

Emily

**From:** "Cheal Liz (RNU) Oxford Health" <Liz.Cheal@oxfordhealth.nhs.uk>
**Date:** Monday, 3 February 2020 at 11:00
**To:** "Gray Emily (RNU) Oxford Health" <Emily.Gray@oxfordhealth.nhs.uk>, "Ampofo Jelena (RNU) Oxford Health" <Jelena.Ampofo@oxfordhealth.nhs.uk>
**Cc:** "Lofthouse Emma (RNU) Oxford Health" <Emma.Lofthouse@oxfordhealth.nhs.uk>
**Subject:** Local audit query - please respond

Hi Jelena

Has this project been approved by the directorate as Emily would like to commence?

Many thanks,

**Liz Cheal | Quality and Audit Specialist | Oxford Health NHS Foundation Trust**
Oxford Health NHS Foundation Trust | Corporate Services | Littlemore Mental Health Centre | Sandford Road | Oxford | OX4 4XN |
07900657607 | Liz.Cheal@oxfordhealth.nhs.uk

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**From:** "Cheal Liz (RNU) Oxford Health" <Liz.Cheal@oxfordhealth.nhs.uk>
**Date:** Friday, 22 November 2019 at 10:07
**To:** "Gray Emily (RNU) Oxford Health" <Emily.Gray@oxfordhealth.nhs.uk>, "Ampofo Jelena (RNU) Oxford Health" <Jelena.Ampofo@oxfordhealth.nhs.uk>
**Cc:** "Lofthouse Emma (RNU) Oxford Health" <Emma.Lofthouse@oxfordhealth.nhs.uk>
**Subject:** FW: PID146484 - Appraisal modification in carers for first episode psychosis

Dear Emily

Thank you for getting in touch. I have attached the proposal form for all new audits/service evaluations if you could please complete and return to Jelena Ampofo who will seek approval from the relevant directorate

Many thanks,

**Liz Cheal | Quality and Audit Specialist | Oxford Health NHS Foundation Trust**
Oxford Health NHS Foundation Trust | Corporate Services | Littlemore Mental Health Centre | Sandford Road | Oxford | OX4 4XN |
07900657607 | Liz.Cheal@oxfordhealth.nhs.uk

**From:** Ampofo Jelena (RNU) Oxford Health <Jelena.Ampofo@oxfordhealth.nhs.uk>
**Sent:** 18 February 2020 13:57
**To:** Gray Emily (RNU) Oxford Health <Emily.Gray@oxfordhealth.nhs.uk>
**Subject:** RE: Local audit query - please respond

Emily,

The project has been approved.

Best wishes

Jelena

**Jelena Ampofo | Quality and Clinical Standards Facilitator | Oxford Health NHS Foundation Trust**
Oxford Health NHS Foundation Trust | Mental Health Directorate | Littlemore Mental Health Centre | Sandford Road | Oxford | OX4 4XN |
Mob. 07787002849| Email: Jelena.Ampofo@oxfordhealth.nhs.uk

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# Appendix R- MRP: Questions for initial interviews with consultants

1. What are your immediate thoughts when the topic of this module is raised?

2. How hopeful did you feel during your family member/friend/partner's experience with psychosis about your ability to help and support them?

3. Is there anything you know now that you didn't know early on in their journey that would have helped you feel more empowered in helping or supporting them?

4. Are there any particular messages or information you think would be helpful to put in a module like this?

5. Is there anything that you think we should avoid or be careful about putting in this module for any reason?

6. Do you have any other thoughts or suggestions about this module?

# Appendix S- MRP: Further details on module content

The first message used in the online programme was the stress-vulnerability hypothesis of psychosis (Zubin & Spring, 1977). This suggests that symptoms of psychosis can be exacerbated or reduced in relation to environmental triggers. The well-established metaphor of a stress bucket (Brabban & Turkington, 2002) was used to demonstrate this hypothesis. This metaphor purports that everybody has a bucket that can hold a certain amount of stress. Environmental stressors increase the stress in the bucket and coping strategies decrease it. When the stress bucket overflows this can lead to outcomes such as anxiety, crying, low mood, anger or an increase in psychotic experiences such as voice hearing. Participants were encouraged to identify stressors and coping strategies in relation to their relative's stress bucket and identify ways in which they may support their relative to decrease stressors or increase coping.

The second core message of the module was based around expressed emotion. Expressed emotion is a well-established concept of communication intensity, such as hostility, critical comments and emotional over-involvement as being related to poorer relational and mental health outcomes (Butzlaff & Hooley, 1998). Within this section, participants were encouraged to reflect on any negative communication patterns they had noticed between them and their family member and any potential ways in which they might be able to modify these.

The third core message of the module was framed around self-care. This message used the 'Oxygen mask' metaphor that one is instructed in airplanes to always apply one's own mask before aiding others. This was related to the idea that if you are not able to support your own wellbeing and mental health, it is very challenging to support someone else's. Key messages here were around self-compassion and identifying personal coping strategies.

# Appendix T- MRP: Questions used for audio testimony from carers

**Introductory section**

- How did you feel when your relative first developed psychosis?

**Stress-vulnerability model section**

- How do you know your stress bucket is full?
- How do you know your relative has got a full bucket?
- Has there been anything you've been able to do or change together for your relative to help empty their bucket?

**Communication section**

- Have you noticed any negative communication patterns in your relationship with your relative?
- What do you find useful when communicating with your relative?

**Self-care section**

- What do you do to take care of yourself during this journey?
- What would you say to yourself if you could speak back to you early on in the journey?

## Appendix U- MRP: Example pages from online programme

# Supporting Someone with Psychosis

Having a friend or family member experiencing a first episode of psychosis can be a worrying and confusing time. Sometimes it feels like we can't do anything to help our friend or relative to feel better. Many people have spoken about how sudden and large the change is with their friend or family member when they develop psychosis. This can lead to you feeling like you don't know how best to support them.



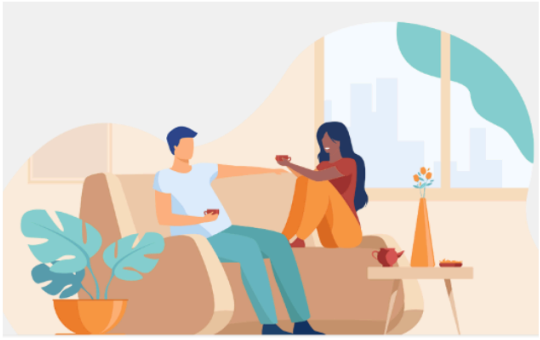
This module aims to help you feel more able to support your friend or relative. This resource is designed to help you to think through effective ways to support the person with psychosis. It allows you to hear the stories of other people who have been through similar experiences. We hope you find it useful.



An overflowing bucket looks different for different people. It may be that you become tearful, irritable, critical, defensive or anxious. It may be that you notice yourself getting into arguments, struggling to sleep, feeling poorly, or feeling numb and distant from other people.

Think about your own stress. What is in your bucket at the moment?

## Jenny and Michael



Jenny and Michael fought frequently over Jenny not doing an equal share of the housework. By agreeing to hire a cleaner, they reduced the triggers for their arguments and so found themselves arguing less.

Michael tried hard to remind himself when he was feeling frustrated that it was the psychosis, he was angry at, not Jenny and that she wasn't behaving this way on purpose. They agreed that if one of them was starting to get angry at the other, that they would take a five minute 'cool off' period before talking about the issue again.

Additionally, Michael supported Jenny to start attending yoga classes. This allowed Michael some time without Jenny each week which allowed him time to recharge and gave them some space from each other.

Listen to Jason's final thoughts about what advice he would give to himself at the beginning of his journey with psychosis:

0:00 / 1:15

**Click here to see a written transcript of this audio clip**

Listen to Mary's final advice for others experiencing something similar to her family:

0:00 / 3:01

# Appendix V- MRP: Demographic questionnaire

Gender:

- Male
- Female
- Prefer not to say
- Prefer to self-describe

Age:

Ethnicity:

- White or white British
- Black or Black British
- Asian or Asian British
- Mixed race
- Other ethnic group or prefer to self-describe

Relationship to person with psychosis:

- Parent
- Spouse/partner
- Child
- Sibling
- Friend
- Other

Length of time since your friend or relative developed psychosis:

- 0-3 months
- 3-6 months
- 6-12 months
- 12-24 months
- 24+ months

# Appendix W- MRP: Brief IPQ - Relatives

Below are some general questions about your relative's mental health problem. For each question, please select the number that best indicates your response.

**1. How much does your relative's mental health problem affect his/her life?**

Rated from 0 (no affect at all) to 10 (severely affects their life)

**2. How much does your relative's mental health problem affect your life?**

Rated from 0 (no affect at all) to 10 (severely affects my life)

**3. How long do you think your relative's mental health problems will continue**?

Rated from 0 (a very short time) to 10 (forever)

**4. How much control do you feel your relative has over their mental health problems (that is, to what extent could they improve their mental health by their own efforts)?**

Rated from 0 (absolutely no control) to 10 (total control)

**5. How much control do you feel you have over your relative's mental health problems? (that is, to what extent could you improve their mental health by your efforts)?**

Rated from 0 (absolutely no control) to 10 (total control)

**6. How able do you feel to cope with your relative's mental health problem?**

Rated from 0 (not at all able to cope) to 10 (completely able to cope)

**7. How much do you think your relative's treatment can help with their mental health problems?**

Rated from 0 (not at all) to 10 (extremely helpful)

**8. How much does your relative experience symptoms from their mental health problems?**

Rated from 0 (no symptoms at all) to 10 (many severe symptoms)

**9. How concerned are you about your relative's mental health problems?**

Rated from 0 (not at all concerned) to 10 (extremely concerned)

**10. How much effort do you think your relative is making to get well?**

Rated from 0 (no effort at all) to 10 (as much effort as they can)

**11. How much effort do you think you are making to help you relative get well?**

Rated from 0 (no effort at all) to 10 (as much effort as I can)

**12. To what extent do you think your relative's mental health were caused by their own behaviour?**

Rated from 0 (not at all caused by their own behaviour) to 10 (totally caused by their own behaviour)

**13. Do you ever think your relative is to blame for their mental health problems?**

Rated from 0 (not at all) to 10 (completely to blame)

**14. Do you ever blame yourself for your relative's mental health problems?**

Rated from 0 (not at all) to 10 (completely to blame)

**15. How well do you feel you understand your relative's mental health problems?**

Rated from 0 (don't understand at all) to 10 (understand very clearly)

**16. How much does your relative's mental health problems affect you emotionally? (eg. does it make you angry, scared, upset or depressed?)**

Rated from 0 (not at all emotionally affected) to 10 (extremely emotionally affected)

# Appendix X- MRP: Post-intervention feedback questionnaire

1. **How helpful did you find this resource?**

Very helpful  A lot helpful  Somewhat helpful  A little helpful  Not at all helpful

2. **Did you experience any technical problems with module? If so, please let us know what they were below.**

*Freeform answer*

3. **How did you find the length of the module?**

Much too short  Slight too short  About the right length  Slightly too long  Much too long

4. **Do you have comments about the module content you would like to feed back?**

*Freeform answer*

5. **Do you have comments about the questionnaire you would like to feed back?**

*Freeform answer*

6. **To what extent does this module encourage you to think differently about psychosis or your friend or family member?**

Very much so  A lot  Somewhat  A little  Not at all

7. **If you indicated a change on the above question and would like to, please give detail about how your thoughts towards them have changed. You may leave this box blank if you prefer.**

*Freeform answer*

8. **To what extent does this module encourage you to behave differently towards your friend or family member?**

Very much so A lot Somewhat A little Not at all

9. **If you indicated a change on the above question and would like to, please give detail about how your behaviour towards them might change. You may leave this box blank if you prefer.**

*Freeform answer*

10. **To what extent does this module encourage you to think or behave differently regarding your own self-care?**

Very much so A lot Somewhat A little Not at all

11. **If you indicated a change on the above question and would like to, please give detail about how your thoughts or behaviour might change. You may leave this box blank if you prefer.**

*Freeform answer*

12. **How likely would you be to recommend this resource to others in a similar position to you?**

Very much so A lot Somewhat A little Not at all

13. **Is there anything about this resource that you found unhelpful or didn't like for any reason?**

*Freeform answer*

14. **We are looking to improve this module to make it more helpful for others. Please write here any thoughts you have about how we might improve.**

*Freeform answer*

# Appendix Y- MRP: Qualitative feedback from pilot participants

**Do you have comments about the module content you would like to feed back?**

*Pilot 1: To my satisfaction this module provided me with positive information that psychosis is not a lifetime diagnosis.*

*Pilot 2: I really liked the bucket analogy and I feel like I have a much better understanding of how to deal and communicate with my partner. I feel like there could be a little less content in the module, or maybe have "optional" content to make it feel and take less time to complete.*

*Pilot 3: It was interesting to read about other people's experiences.*

**Do you have comments about the questionnaire you would like to feed back?**

*No responses given*

**If you would like to, please give detail about how your thoughts towards your relative with psychosis have changed. You may leave this box blank if you prefer.**

*Pilot 1: My thoughts towards my daughter are that she can overcome psychosis with the support of her family and friends.*

*Pilot 2: I liked the examples of other careers and their experience, where it was shown how they dealt with their situation and how psychosis is not something that necessarily lasts forever. My previous impression was that this was something that would be reoccurring and would occur "randomly", but the bucket analogy helped a lot in understanding what can cause a psychotic episode.*

*Pilot 3: It helped to make me feel more positive, in quite a negative situation.*

**If you would like to, please give detail about how your behaviour towards your relative with psychosis might change. You may leave this box blank if you prefer.**

*Pilot 1: I now understand that her behavior is due to her illness and try to be more positive in our interactions.*

**If you and would like to, please give detail about how your thoughts or behaviour might change regarding self-care. You may leave this box blank if you prefer.**

*Pilot 1: I now firmly understand that in order to be very supportive to my daughter I have to pay attention to my own health and care about my wellbeing.*

**Is there anything about this resource that you found unhelpful or didn't like for any reason?**

*Pilot 2: It took me a lot longer than just one hour to complete and I would appreciate if this could be mentioned prior to starting, or changes that could be added to shorten the module or make certain aspects of it optional. Other than that, I think it is effective in letting relatives know what psychosis is and how to deal with it together with the relative.*

**We are looking to improve this module to make it more helpful for others. Please write here any thoughts you have about how we might improve.**

*Pilot 2: I would suggest in having the text boxes in "bullet points" format where you can continually add more bullet points/text boxes. This may make it easier to spot out typical keywords, such as anxiety, anger, etc. that may be common words used for this module. It may also make it feel less like you are writing a giant paragraph to explain something and*

*make it feel less long, which I think will help keep people engaged in the module, as I felt a bit bored after a while when I had to write very long and thought out paragraphs.*

# Appendix Z- MRP: Qualitative feedback from case series participants

**Do you have comments about the module content you would like to feed back?**

*Participant 1: Most of this has been covered already with the EIS although it was helpful to think about communication issues. It only took me 40 minutes and not the two hours that was advised*

*Participant 6: A wider variety of voices / experience would make it a much richer experience, as would video rather than audio (even if you use actors to maintain anonymity)*

*Participant 8: All scenarios are very different to ours. Our relative is not communicative, cannot reason, cannot stay in the room with us, finds emotion confusing.*

*Participant 9: I am sorry, but I got very little from it. The proposed strategies all have value, but we have been unsuccessful with virtually all of them.*

**Do you have comments about the questionnaire you would like to feed back?**

*Participant 1: I find the questionnaire interesting as views do change on a daily basis that affect what you put down as a score. I have found that it helped me track where I am in my feelings and thoughts.*

**If you would like to, please give detail about how your thoughts towards your relative with psychosis have changed. You may leave this box blank if you prefer.**

*Participant 3: A reminder of how far my son has come, and how proud and grateful l am!*

*Participant 4: This module reinforced and reminded me of some key ideas I had already picked up from experience, professionals and reading sources. It encourages me to deal with psychosis in a positive and practical way which will benefit my children's mental health and mine too.*

*Participant 8: Try not to fill her stress bucket*

**If you would like to, please give detail about how your behaviour towards your relative with psychosis might change. You may leave this box blank if you prefer.**

*Participant 1: Just need to spend time on not assuming things but asking him and communicating more clearly.*

*Participant 3; To stay positive*

*Participant 8; We will try not to ask questions, but find activities and discussions.*

*Participant 9: The module reinforced that we are approaching my son in a valid way, we are just being unsuccessful in doing so.*

**If you and would like to, please give detail about how your thoughts or behaviour might change regarding self-care. You may leave this box blank if you prefer.**

*Participant 1: Just highlights how important it is that I look after myself as well and how much this has affected me.*

*Participant 3: That I matter too*

*Participant 8: To go out walking more*

**Is there anything about this resource that you found unhelpful or didn't like for any reason?**

*Participant 1: I think it depends on what you have covered already. We had some good intervention initially which helped us enormously and have had some very useful conversations with the mental health worker we have been assigned. I have also felt that I have been able to ask a lot of questions at the medical reviews which have been very useful.*

*Participant 3: with the audio clips, would like to have heard more from the man and less from the woman*

*Participant 5: no mention of how medication might make the person feel*

*Participant 6: This would have been far more useful at the start of the journey with our son's psychosis. the earlier relatives can gain understanding and develop strategies to take care of themselves and their loved ones the better.*

*Participant 7: I think I know it already so I found it bit frustrating.*

*Participant 8: We are pleased that they found a way forward but their circumstances started from a different place and seem irrelevant to our situation.*

*Participant 9: It was all helpful in setting the right aims*

**We are looking to improve this module to make it more helpful for others. Please write here any thoughts you have about how we might improve.**

*Participant 1: It is a good module but maybe some more about the initial feelings of shock and worry that you experience when this first happens - a viewpoint of what is happening for your relative at the time versus what is happening for you. I think I was hoping to learn a little more about what causes/triggers psychosis.."*

*Participant 2: Having been dealing with complex issues, psychosis being the most recent, I felt that this was probably not that useful - but only because we are veterans of caring for our daughter and have read much of this advice already. Had this been available earlier, or she had had a diagnosis earlier then it would have been really useful.*

*Participant 5: I would find it useful to have some descriptions of side effects of medications that prevent the person from being able to achieve/attempt certain tasks to overcome/recover from psychosis "*

*Participant 8: Scenarios were of positive behaviours not negative psychosis.*

# Appendix AA- Further information on randomisation tests

Randomisation tests can be used in study designs where the point of intervention can be randomly assigned in advance of the study. These tests allow for the control of a number of threats to validity present without randomisation, such as history, (an unrelated external event influencing outcomes), and maturation, (outcomes changing as a natural result of time; Morley, 2018). Using statistical tests in case series research allows for increased statistical conclusion validity compared to other forms of evaluating case series such as visual inspection and therefore increases the possibility of generalisation of the result to a wider population (Kratochwill & Levin, 2010b). Parametric tests are not appropriate for case series designs as the studies often violate the assumptions of normality, homogeneity of variances and independence of observations (Bouwmeester & Jongerling, 2020). Therefore, non-parametric tests such as the randomisation test can be used to statistically evaluate the effect of an intervention in a case series design.

The null hypothesis tested in the case of the randomisation tests used here is that the mean difference between baseline and intervention observations is equal for all permutations of baseline lengths. A significant result would indicate that the scores on the questionnaire item increased following the intervention, and that the point of the intervention delivery is the point that leads to the greatest increase compared to any other time point. For each participant in the case series, for each questionnaire item, the change between the mean score on the baseline measures and the post-intervention measures was calculated for all possible timepoints for intervention; in this case, all days between day 3 and day 8. The change for each day was then ranked in order of magnitude. Depending on the position of the observed score within the magnitude of change scores possible for all timepoints, the probability can be calculated as the proportion of possible values that are as extreme or more extreme than the observed value.

As an illustration of this, Figure 4 shows the results of participant 1 on the carer control item. The mean baseline and intervention scores have been calculated for each permutation of baseline length. The difference for each is then calculated and ranked in order of magnitude, with the most positive first as we expect the score on the questionnaire item to increase following the intervention. In this case, the observed change of 1.29 is the largest change. The probability of this occurring by chance is calculated by the rank order divided by the number of possible timepoint permutations available in this design, in this case 6. As such, for this participant, the probability of the observed change occurring by chance is calculated as $p$= .167.

| Intervention day | Mean baseline | Mean intervention | Difference | Differences Ranked | Rank order | Probability |
|---|---|---|---|---|---|---|
| 3 | 5.333333333 | 5.875 | 0.54166667 | 1.291666667 | 1 | 0.16666667 |
| 4 | 5.5 | 5.857142857 | 0.35714286 | 0.821428571 | 2 | |
| 5 | 5.4 | 6 | 0.6 | 0.6 | 3 | |
| 6 | 5.5 | 6 | 0.5 | 0.541666667 | 4 | |
| 7 | 5.428571429 | 6.25 | 0.82142857 | 0.5 | 5 | |
| 8 | 5.375 | 6.666666667 | 1.29166667 | 0.357142857 | 6 | |

*Figure 4- Example calculation of the test statistic from one of the randomisation tests conducted in this study.*

After computing these probabilities for each participant, the results are then combined using the additive procedure described by Edgington & Onghena, (2007). The probabilities for each participant are added together to create an overall probability, S. The probability of getting a sum as small as S given $n$ participants is given by:

$$\frac{C(n,0)\ (S-0)^n - C(n,1)(S-1)^n + \ C(n,2)(S-2)^n - \ C(n,3)(S-3)^n \ \ldots}{n!}$$

As the numerator expands, the plus and minus signs alternate between each term until the term $(S-x)^n$ becomes negative.

As an example, in the case of the carer control measure, the additive probability of all individual participant results, S was 3.33 and therefore the equation becomes:

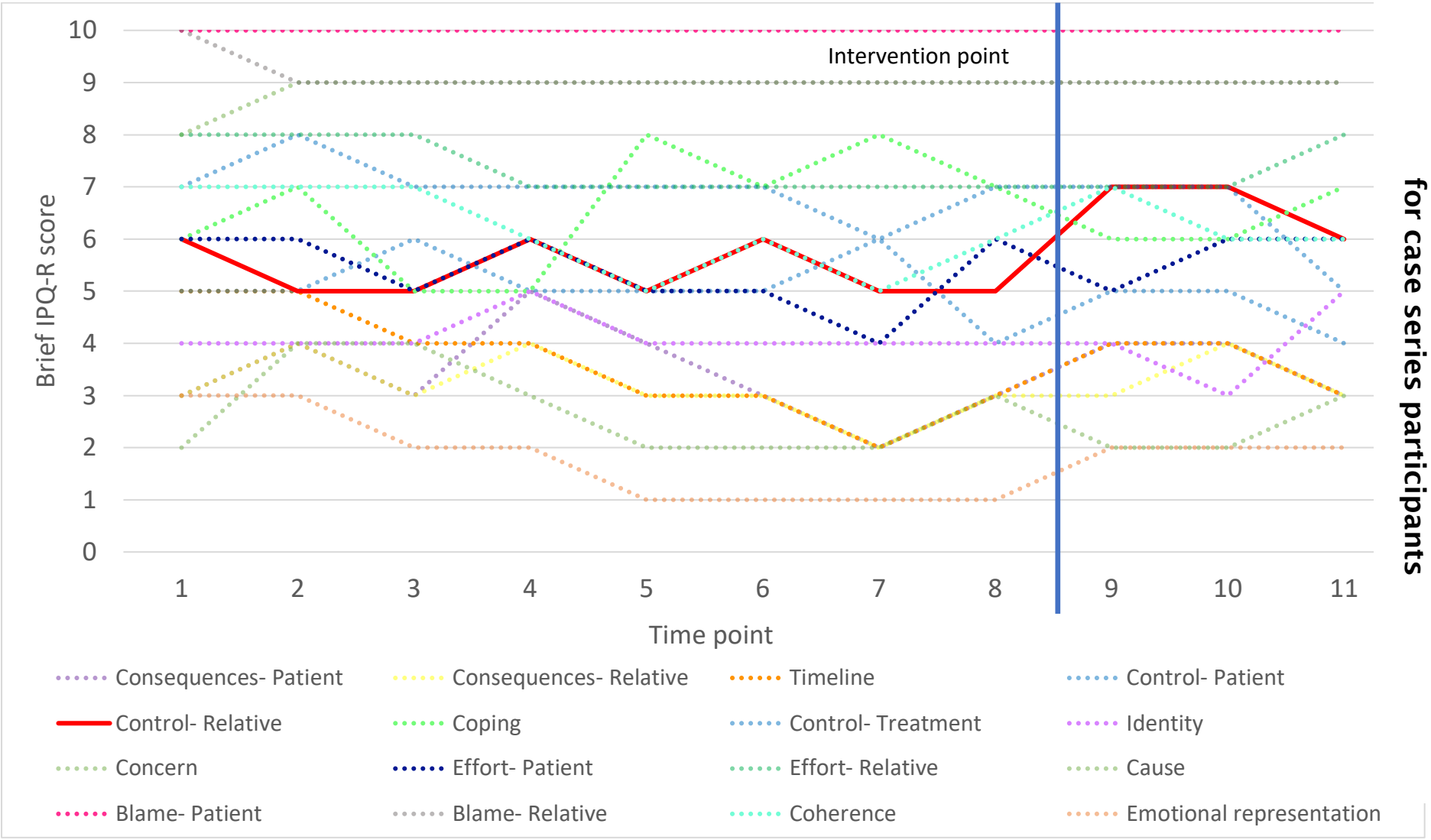
$$\frac{C(9,0)(3.33-0)^9 - C(9,1)(3.33-1)^9 + C(9,2)(3.33-2)^9 - C(9,3)(3.33-3)^9}{9!}$$

After this term, the $(S-x)^n$ term becomes negative and so no more terms are included. The equation above becomes:

$$\frac{1 \times 3.33^9 - 9 \times 2.33^9 + 36 \times 1.33^9 - 84 \times 0.33^9}{362880} = 0.09$$

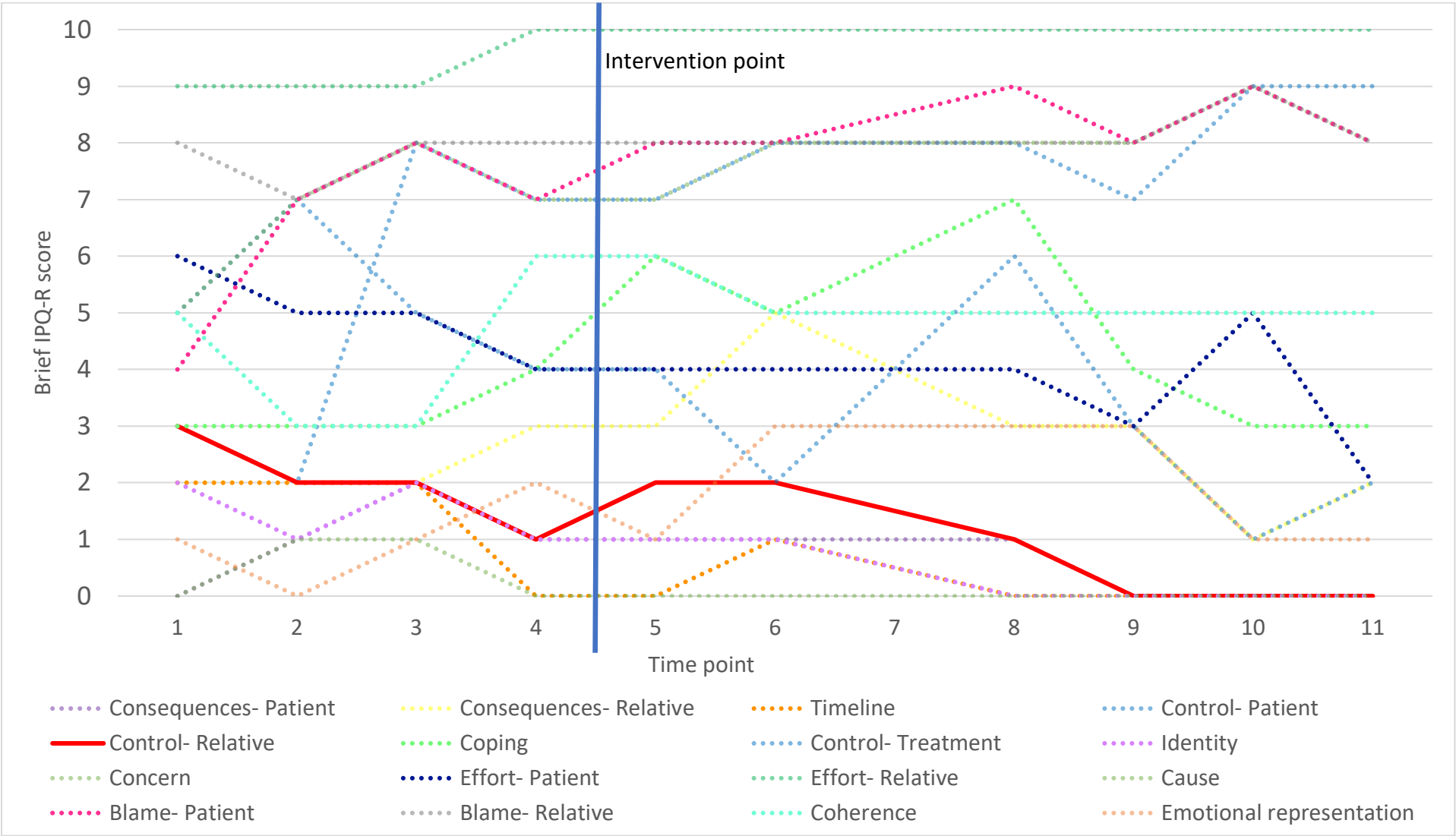
The resulting $p$ value is the chance of getting a sum as small as S from the 9 participants when the null hypothesis is true, that is that there is no effect of the intervention on the IPQ carer control item. When this probability is smaller than 0.05, this we can reject the null hypothesis and conclude that the intervention does cause a statistically significant change on the item measured.

**Participant 1**

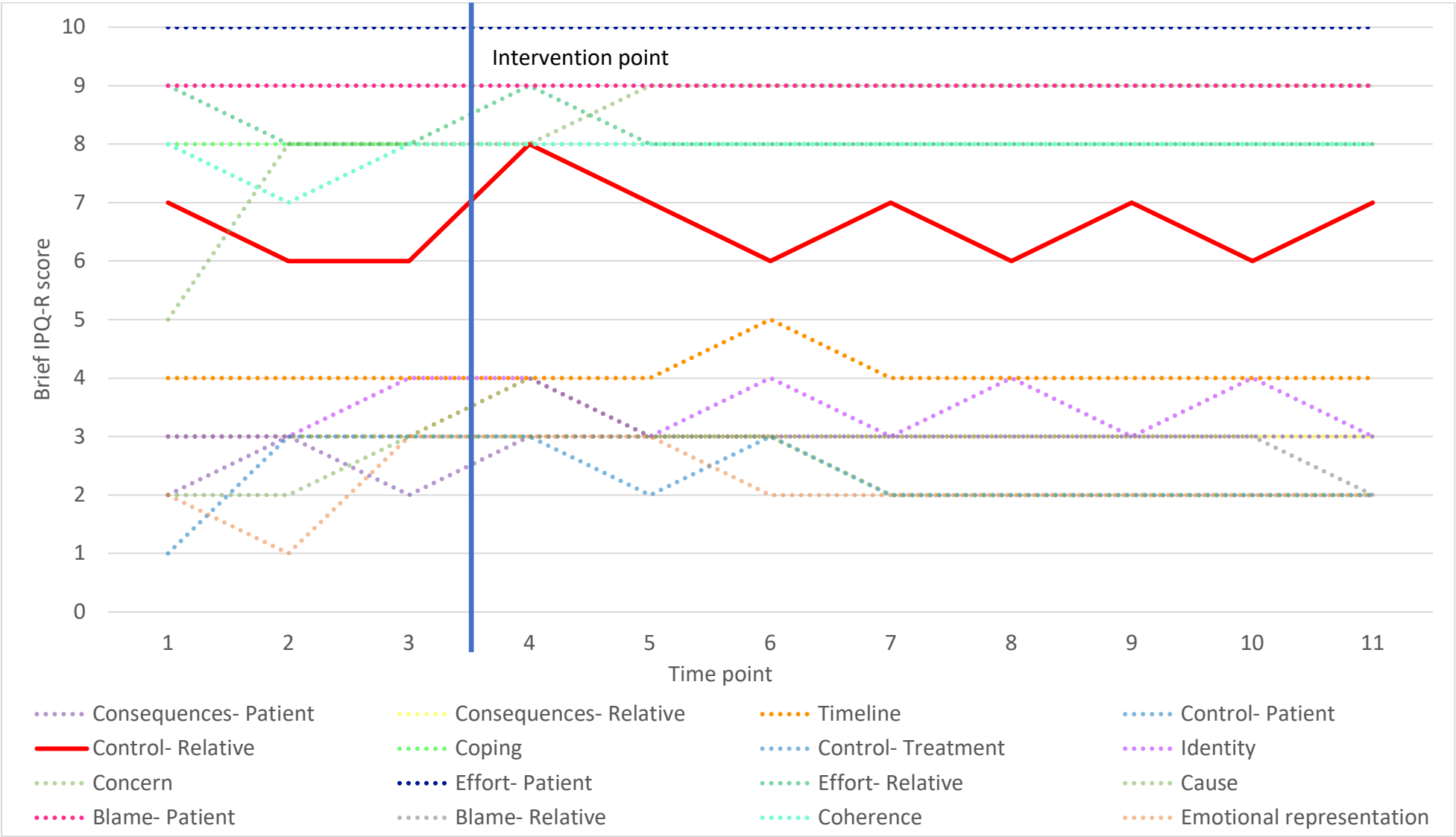



**Appendix AB- MRP: Graphs of IPQ responses over time for case series participants**

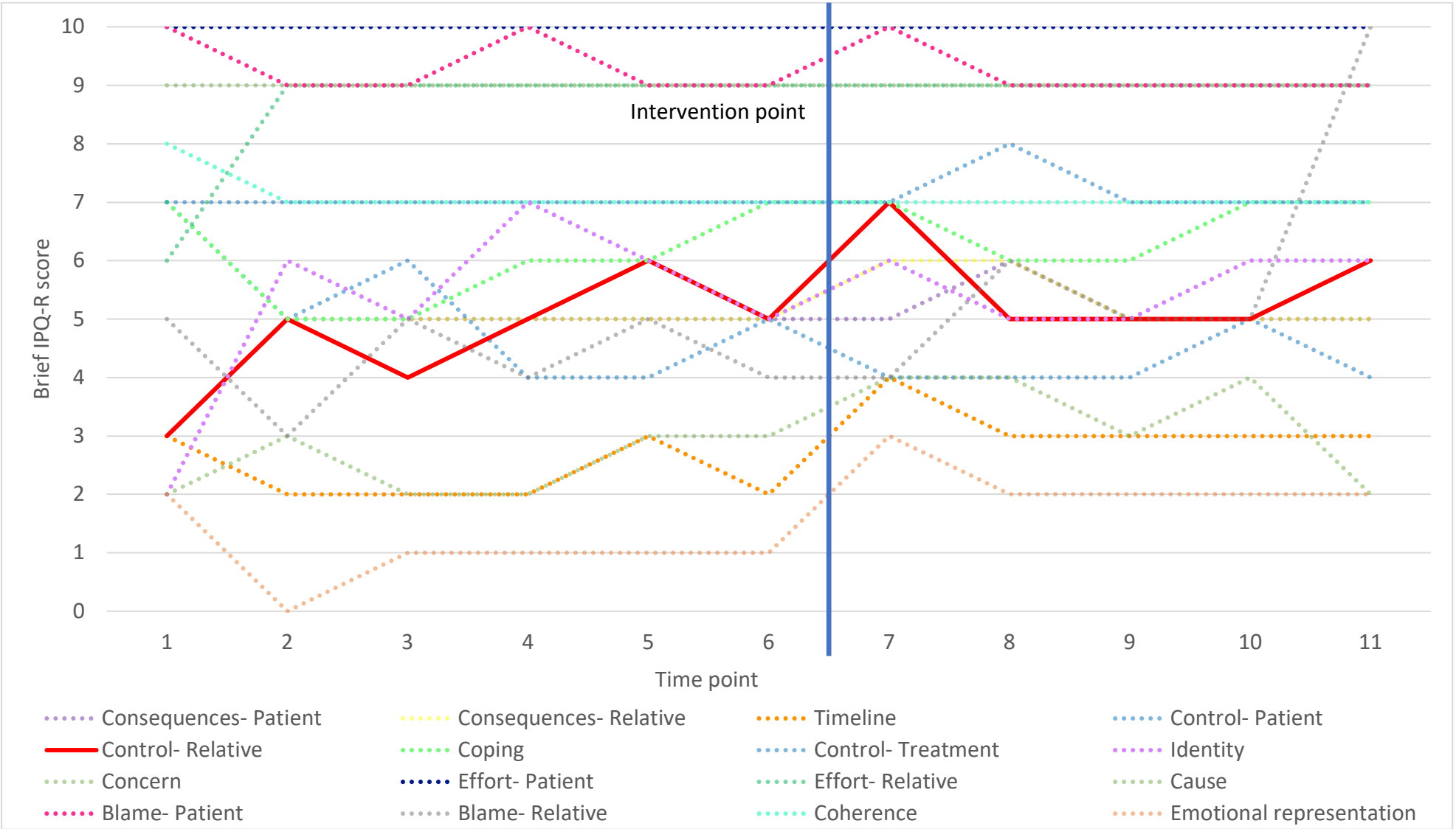
**Participant 2**



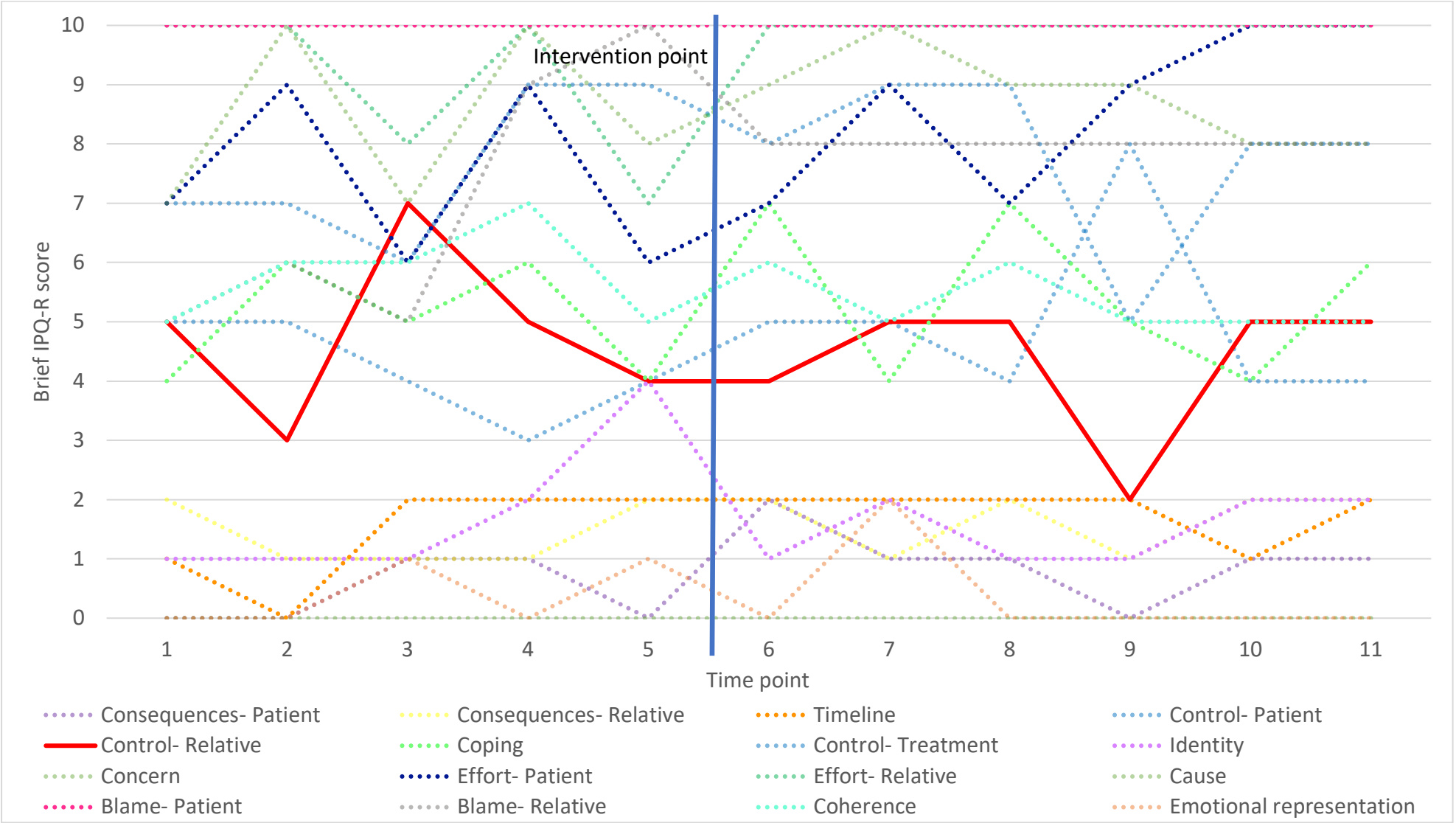
**Participant 3**



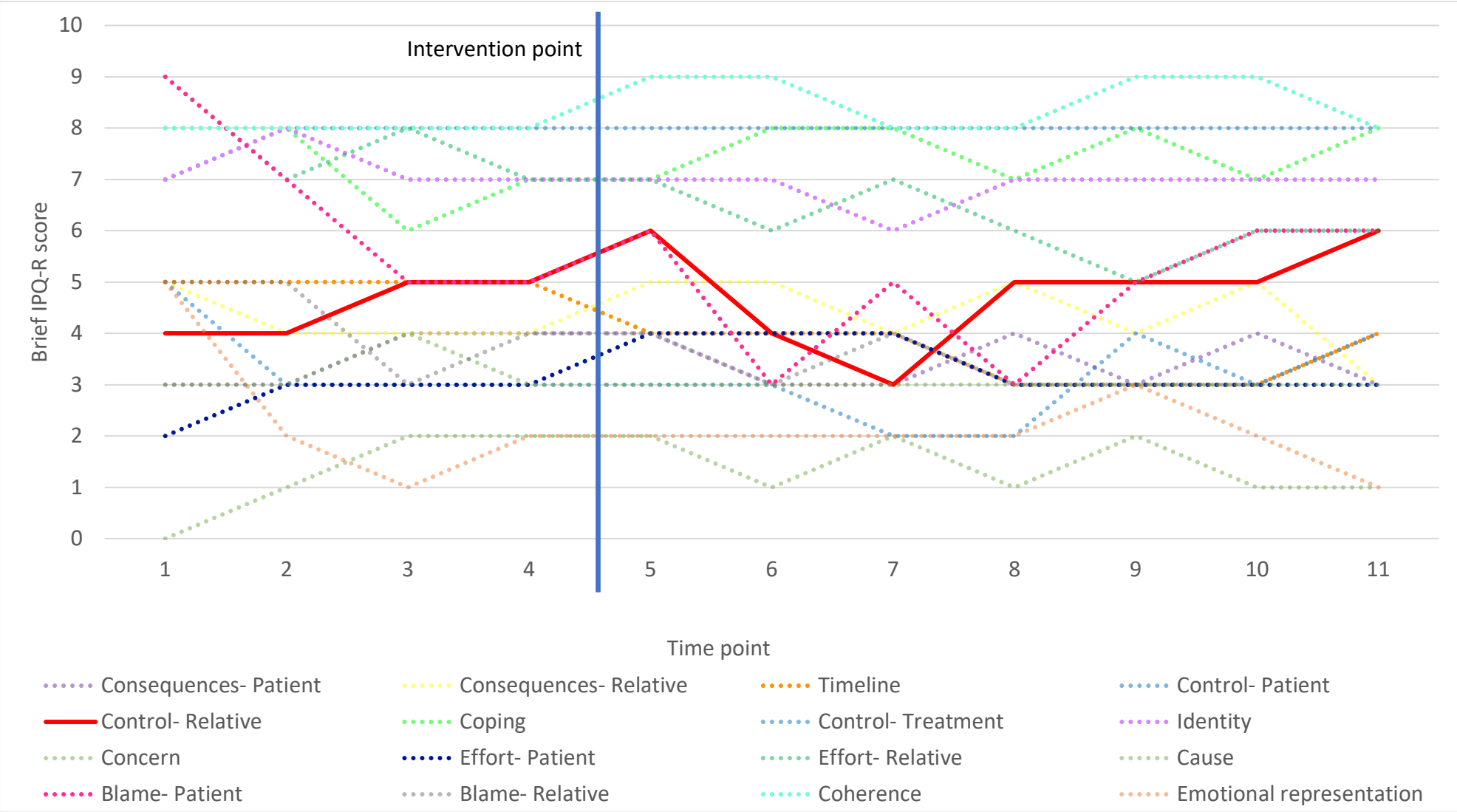
**Participant 4**



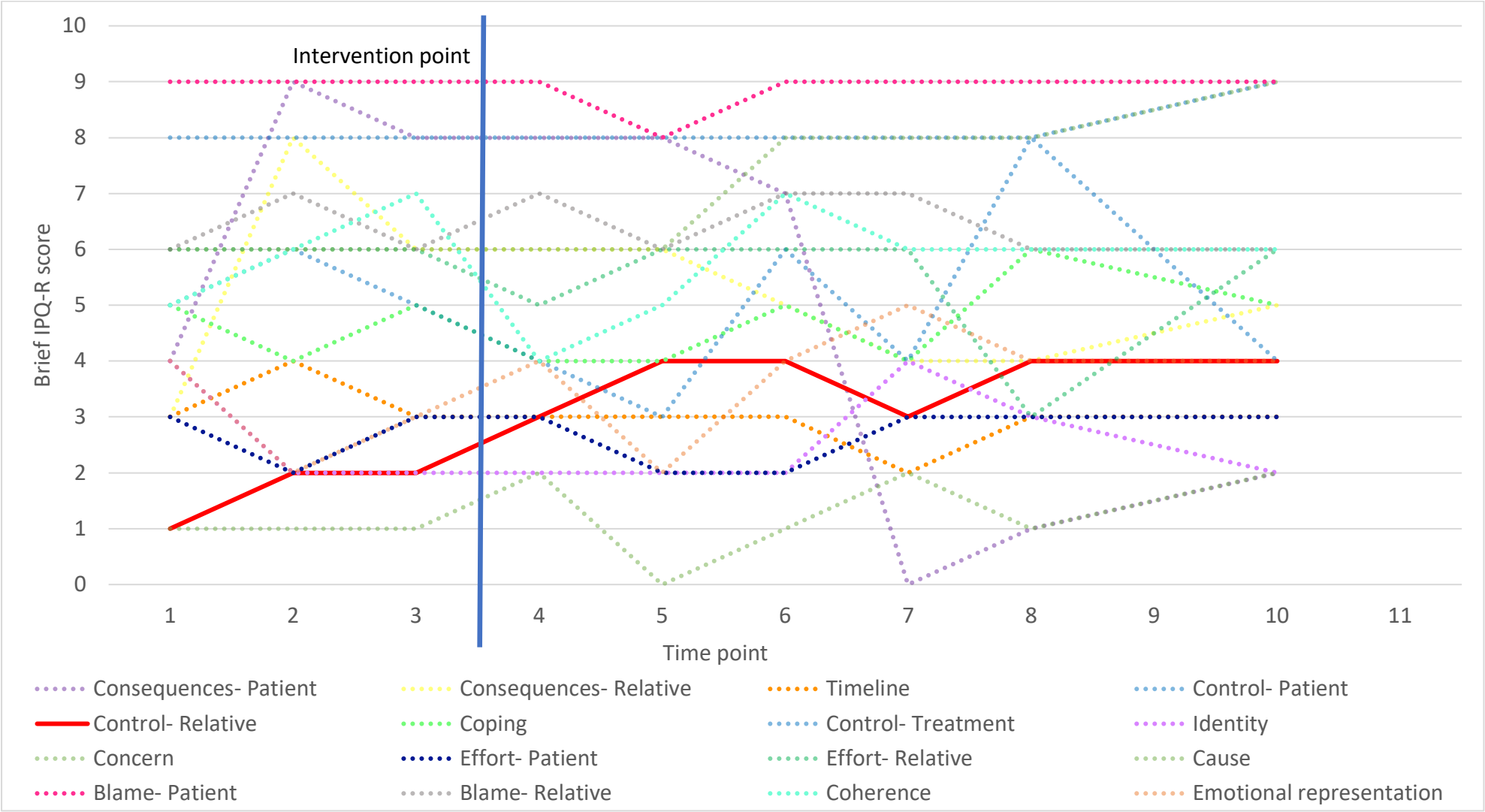
**Participant 5**



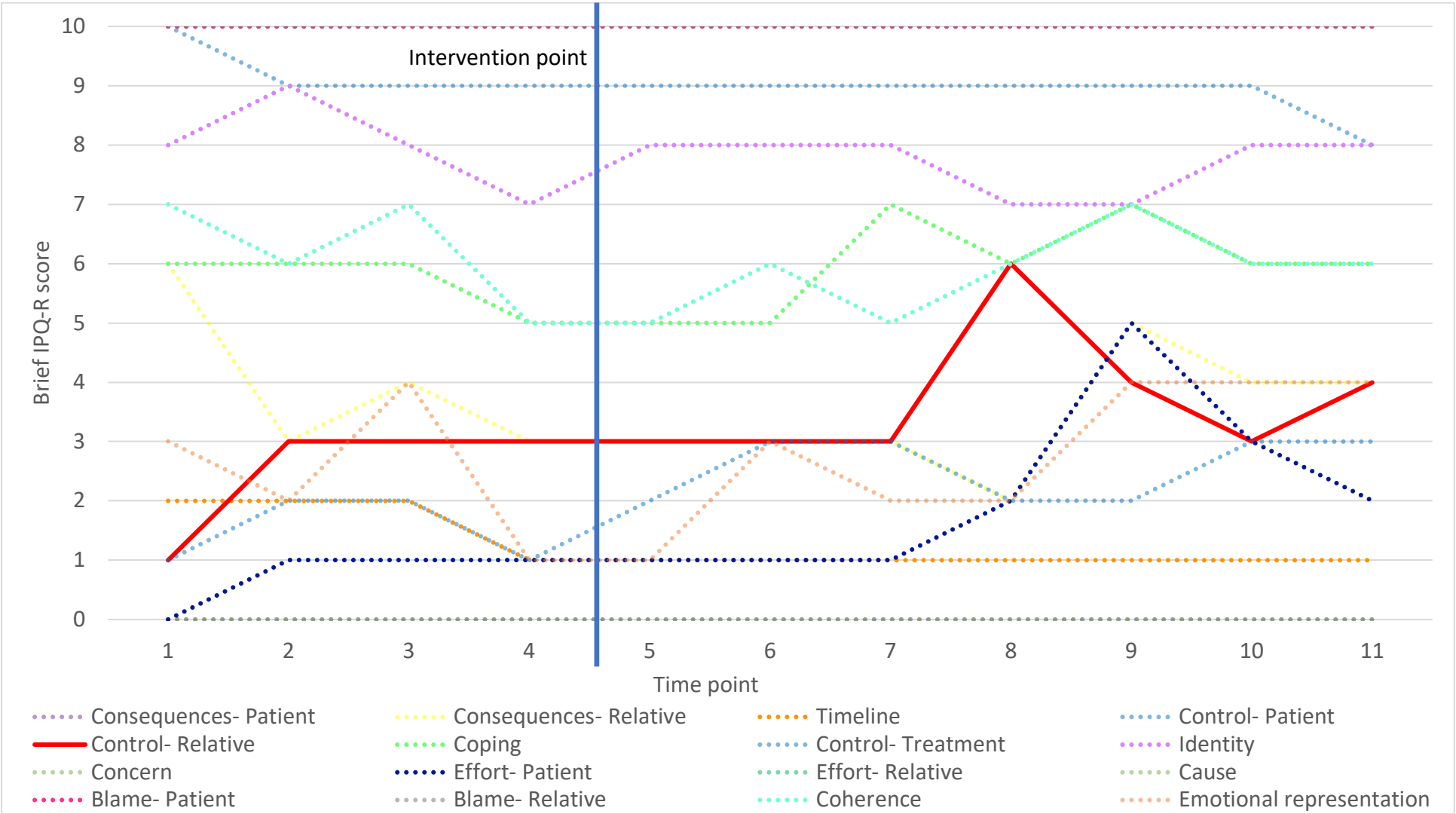
**Participant 6**



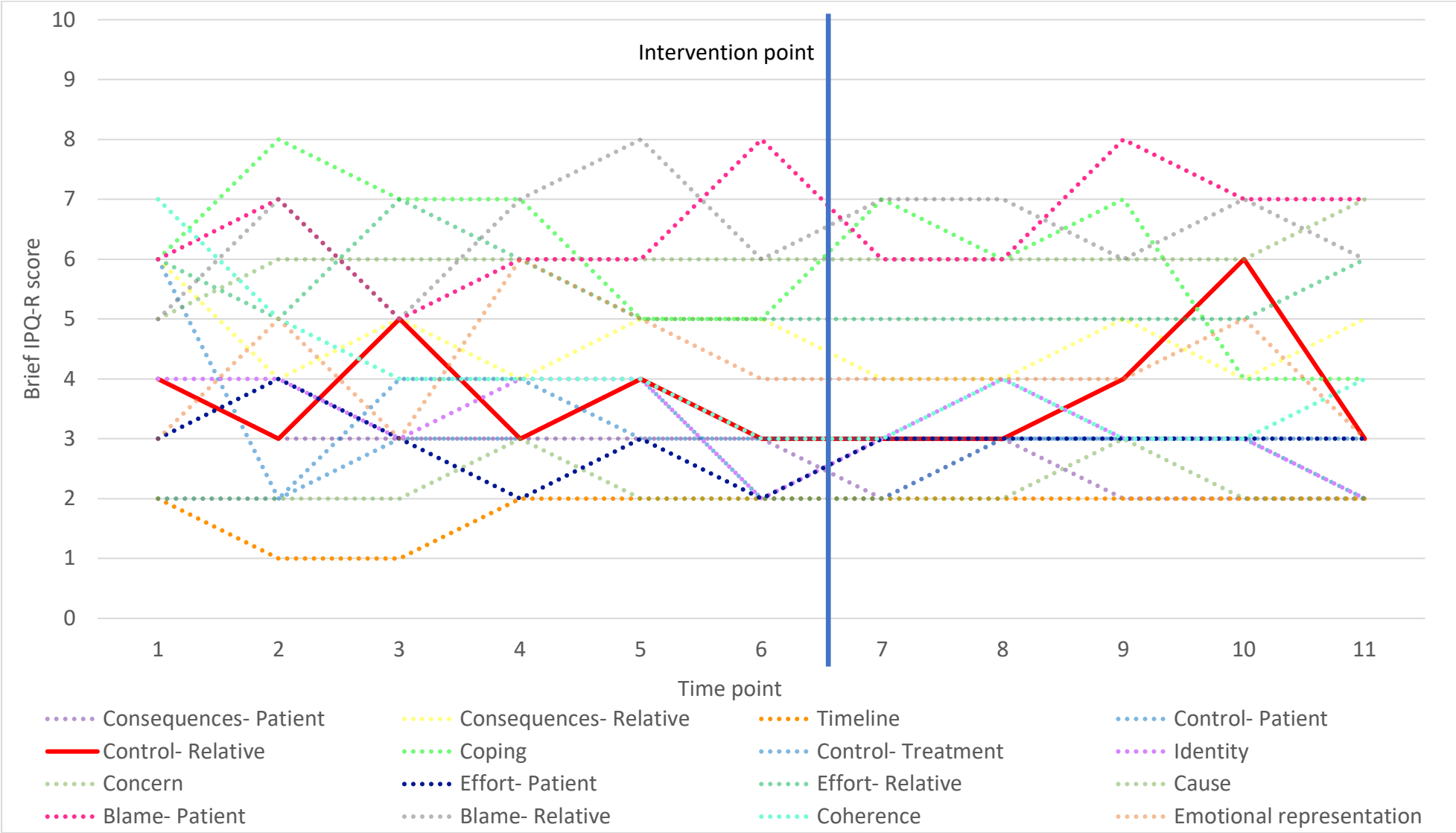
**Participant 7**



**Participant 8**



**Participant 9**



**Participant 10**

