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A feasibility study of the translation of Cognitive Behaviour Therapy for Psychosis into an Australian adult mental health clinical setting

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Abstract

There is evidence that Cognitive Behaviour Therapy for Psychosis (CBTp) is an effective intervention for reducing the experience of psychotic symptoms. The recently updated Royal Australian and New Zealand College of Psychiatrists clinical practice guidelines (RANZCP CPG) recommend CBTp for the therapeutic management of schizophrenia and related disorders. Translational research is required to examine how well CBTp can be applied into public mental health services. This feasibility study aimed to provide preliminary evidence on how acceptable, implementable and adaptable individual or group CBTp may be within a public mental health service in Australia. Twenty seven participants initially agreed to participate in the study with 16 participants being randomised to either group or individual therapy, 11 starting therapy and 7 completing therapy. The intervention involved approximately 20 hours of manualised CBTp. Attendance was higher in the individual therapy. Subjective reports indicated the therapy was acceptable to all completers despite initial concerns about disclosure in the group participants. Participants who engaged in individual or group CBTp experienced a similar level of reduction in the severity of hallucinations and delusions. The results of this feasibility study provides preliminary evidence that individual CBTp may be a feasible, acceptable and effective intervention to include in Australian public mental health services. A pilot trial is now required to provide further evidence for and guidance of how best to translate CBTp protocols to Australian mental health services.

Keywords

Cognitive behaviour therapy for psychosis, mental health services, psychosis, translational research, feasibility

Schizophrenia commonly has onset in late adolescence or early adulthood and can be a disabling condition if functional remission or improvement is not attained (Tarrier, 2005). Sub-optimal outcomes of treatment are associated with personal, social, health service and economic costs. The most common principal diagnosis of patients accessing community mental health care services in Australia was schizophrenia accounting for 27% of all contacts (Australian Institute of Health and Welfare, 2013). A cost analysis by Neil, Carr and Mihalopoulos (2014) has shown that psychosis costs the Australian society \$4.91 billion per annum and the Australian government almost \$3.52 billion per annum. Unquestionably there needs to be ongoing research to develop new targeted interventions; but there is also a need to translate current interventions shown to be efficacious in clinical trials into interventions that can be effective within the Australian mental health care system.

Recommended care of schizophrenia spectrum disorders requires pharmacotherapy and psychosocial treatment (Lehman et al., 2004; Rowlands, 2004). Psychopharmacotherapy targets the positive symptoms of these illnesses with little impact on the other illness domains of negative symptoms, cognitive and social impairment (Reynolds, 2012). However, the limited effectiveness of pharmacotherapy for psychosis is now recognised with rates of treatment resistance reported between 25-55% and concerns about poor adherence (Dold and Leucht, 2014; Kane, Kishimoto and Correll, 2013).

Evidenced based psychosocial interventions exist but are erratically used in psychosis (Michie et al., 2007). Over the last 20 years cognitive behavioural therapy has been adapted to address the residual symptoms of psychosis, enhance coping strategies and improve illness self-management (Addington and Lecomte, 2012). Cognitive Behaviour Therapy for Psychosis (CBTp) has been used at various stages of the illnesses with various treatment targets, including negative symptoms (Addington and Lecomte, 2012). On the basis of a

number of meta-analytic reviews, CBTp has been recommended as part of standard psychosis care by a number of influential treatment guidelines (Lehman et al., 2004; Rowlands, 2004) and the recently published RANZCP CPG for the management of Schizophrenia and related disorders (Galletly et al., 2016). The majority of studies have evaluated CBTp delivered individually. A number of issues concerning the effectiveness of CBTp (i.e. what type of CBTp for whom and when?) require further elucidation with studies of improved methodological rigour (Wykes, Steel, Everitt and Tarrier, 2008). At the same time attention needs to be paid to research that will guide the implementation and scaling up of CBTp to improve access in routine care (Berry and Haddock, 2008; van der Krieke et al., 2015).

One potential approach to improve access to CBTp is to examine the treatment delivered in group format. Cognitive behavioural therapy has been successfully delivered in group format for other conditions, and there have been studies of group CBTp for auditory hallucinations (Barrowclough et al., 2010). Similarly other studies have showed benefits in reducing positive symptoms of psychosis in those who complete group CBTp (Lecomte et al., 2003; Lecomte et al. 2006). In public mental health services efficient delivery of effective care is paramount. Offering CBTp in a group format may improve access and increase the range of care delivered. Pragmatic studies can explore the acceptability and feasibility of group based CBTp compared with individually delivered CBTp. Previous studies have examined group based CBTp plus standard care compared with standard care rather than an active comparison group (Barrowclough et al., 2010).

Translational research has commonly been described by the phrase “bench to bedside” (Woolf, 2008). While a significant focus of translational research has been on moving pharmacological basic research to everyday clinical application, the term also relates to translating basic psychological knowledge to everyday clinical application (Tashiro and Mortensen, 2006). Earlier conceptualisations of translational research focused on the two

stages (Sung et al., 2003), and three stages (Westfall et al., 2007) of translation. Current conceptualisations tend to focus on four stages of translational research. For example, stages such as T1 (potential application), T2 (efficacy), T3 (effectiveness) and T4 (translation to population health) have been used to describe stages of translational research. A similar concept to translational research is implementation research. Implementation research involves understanding the what, why and how of implementing interventions into real world settings and testing approaches to improving them (Peters et al., 2014). Implementation outcome variables include acceptability, adoption, feasibility, fidelity as well as outcome in a real world setting (Peters, et al., 2014). While there is strong empirical evidence for the efficacy and the effectiveness of CBTp for psychosis, there is now a need for implementation research to examine how well this intervention is accepted by adults with schizophrenia attending Australian mental health services.

This study therefore aims to provide preliminary data to guide the introduction of a service delivery model that incorporates CBTp within an Australian mental health service context (Queensland Health). In particular this data will include the acceptability, feasibility, outcomes, and patient perspectives of participants receiving either individual or group cognitive behaviour therapy for psychosis within Queensland Health. This feasibility study will therefore provide preliminary data to guide considerations in planning pilot research trials. Such research is critical in developing mental health service delivery policies that are tailored for the typical Australian community public mental health system.

Method

Participants

Twenty seven participants with a primary diagnosis of schizophrenia, attending community mental health services (figure 1) were referred with randomisation of 16 out-patients (11 male, 5 female) aged between 18 – 65 years (mean = 38.63 years, *SD* = 6.54 years). Eleven participants withdrew or were withdrawn prior to randomisation (figure 1).

Participants were referred by their case manager or consultant. All participants provided informed consent prior to commencing the study. Separate consent was also sought for audio recording of sessions to enable checking of treatment fidelity.

Measures

The Psychotic Symptom Rating Scales (PSYRATS): The PSYRATS (Haddock et al., 1999) is a semi-structured interview that provides a measure of the dimensions of hallucinations and delusions. The hallucinations subscale contains 11 items and the delusions subscale contains 6 items, each of which are scored on a 5-point Likert scale. Items assess symptom intensity and severity, associated distress, and functional impairment. The test-retest reliability of the hallucinations subscale has been found to be 0.70, while the test-retest reliability of the delusions subscale has been found to be 0.75 (Kronmüller et al., 2011).

The Life Skills Profile - 16 (LSP-16): The LSP-16 (Rosen, Hadz-Pavlovic and Parker, 1989) is a clinician-rated scale assessing functioning in people with severe mental illness. The abbreviated 16-item version was developed for an Australian study of psychiatric classification within mental health services (Buckingham et al., 1998), and is a routinely used outcome measure within public mental health services. The 16 items form four subscales: Withdrawal (social and interpersonal), Compliance (with treatment and health services), Self-Care, and Antisocial behaviour. The total scores were used in this study. The test-retest reliability of the total score has been found to be 0.89 in patients with schizophrenia (Parker et al., 1991). Reported Cronbach alpha range from $\alpha=0.67$ to 0.88 (Thornicroft and Tansella, 2010).

Kessler – 10 (K-10): The K-10 (Kessler et al., 2003) is a self-report measure of symptoms of psychological distress. The questionnaire consists of 10 items, rated on a 5-point Likert scale, with higher scores reflecting greater psychological distress. The Cronbach alphas has shown to be excellent ($\alpha=0.90$) within an Australian population. (Furukawa et al., 2003). In the peer-reviewed literature, there appear to be no published studies of the test-

retest reliability of the K-10, however, the K-10 has been shown to reliably predict current state disorders (Cornelius et al., 2013).

Outcome Rating Scales (ORS): The ORS provides a measure of the clients' perception of their own functioning (Miller et al., 2003). At the start of each session participants rate their perceived functioning over the past week in the areas of individual (personal well-being), interpersonal (family, close relations), social (work, school, friendships) and overall (general well-being). These ratings are combined to provide a total score. Scores below 25 are considered as being clinically significant.

Session Rating Scales (SRS): The SRS is a scale designed to assess the strength of the therapeutic alliance within each session (Duncan et al., 2003). Participants are asked to rate at the end of each session their experience within the therapeutic relationship, goals and topics, approach and method, and overall experience. These ratings are combined to provide a total score. Scores of 36 or higher are considered evidence of a strong therapeutic alliance (Duncan et al., 2003).

Treatment Adherence Assessment

A random selection of 12 audiotaped sessions were independently rated for adherence using the Revised Cognitive Therapy for Psychosis Adherence Scale (R-CTPAS) (Rollinson et al., 2008) This scale was developed for the Fowler CBT model (Fowler, Garety and Kuipers, 1995) and examines factors central to applying CBT to psychosis in particular, engagement and assessment, and formulation (Morrison and Barratt, 2010). The 21 item scale rates frequency within the session on a 1 to 7 scale and then a rating of competence using 1 to 7 for competent practice and -1 to -7 where competence is not displayed. The scale is recommended to be scored using all 21 items with reported satisfactory inter-rater reliability and concurrent validity (Rollinson et al., 2008).

The mean ratings of adherence for each of the 21 items ranges from 0.25 (SD=0.62) for relapse prevention to 4.83 (SD = 2.62) for enhancing self-regulatory strategies. The mean

adherence for all 21 items across 12 sessions was 2.34 (SD=2.36) with a range of ratings from 0 to 7. These scores are markedly higher than accepted norms for adherence to CBTp using this measure (Rollinson et al., 2008) and so indicate a high level of adherence by the therapists.

Procedure

Ethical approval was obtained by the Research Ethics and Governance Unit, The Prince Charles Hospital, Metro North Hospital and Health Services District (HREC/13/QTCH/191). Once written informed consent was provided, an initial assessment was conducted. This consisted of the PSYRATS (administered by the research officer who was a trained clinical psychologist, the LSP-16 (completed by the participant's case manager), and the K-10. Following the initial assessment, participants were randomly allocated to receive either individual or group CBTp (figure 1). A random number generator was used for randomisation, and allocation was carried out by a member of the research team not directly involved in the recruitment or assessment process. Following allocation, participants received their allocated treatment as described below. A post-treatment assessment was conducted using the same outcome measures as were administered pre-treatment. Participants also completed a semi-structured interview about their experience of the therapy by the research officer. Participants assigned to individual therapy attended therapy at their usual mental health outpatient clinic. Participants assigned to group therapy attended therapy at a community mental health and recovery centre. Outcome raters were not blind to treatment allocation.

CBTp Intervention

The manualised intervention was based on the Turkington and Fowler models (Fowler, Garety, & Kuipers, 1995; Kingdon & Turkington, 2005; Turkington & Siddle, 1998). Individual therapy consisted of 20 weekly sessions of approximately one hour

duration. Group therapy consisted of 10 fortnightly sessions of approximately two hours duration. Initial sessions focused on identification of problem areas for each individual and their existing coping strategies, an introduction to the CBT approach, together with psycho-education about psychosis, and collaborative generation of a formulation of key problems. This was followed by sessions focused on skills for managing low mood and anxiety. Subsequent sessions focused on beliefs about delusions, voices and strategies to reduce any relevant safety behaviours which maintain symptoms. Later sessions focused on relapse prevention.

Results

Assessment of Feasibility

Recruitment. Participants were recruited over a period of 5 months. The recruitment phase was protracted due to a lower than expected take-up rate. Reports from case managers suggested that one main reason for this was an unwillingness of potential participants to be randomly allocated to the group therapy.

Engagement. Nine participants withdrew from the study prior to or soon after commencing treatment: two participants withdrew due to an exacerbation of their illness requiring inpatient admission, six participants withdrew due to practical concerns such as transport or conflicting work schedules, and one participant withdrew in the context of ongoing ambivalence about the perceived usefulness of therapy. One participant withdrew midway through the program. There were no significant pre-treatment differences between participants who withdrew and those who completed the program on age [$t(14)=0.85, p >.05$]; gender [Chi-square = 0.04, $p >.05$], the PSYRATS, [$t(14) = -.44, p >.05$], LSP-16, [$t(14) = -.20, p >.05$], or the K10, [$t(14) = -.49, p >.05$]. Participants in the individual therapy program attended 100% of sessions, whereas participants in the group program attended 66.7% of sessions. Figure 1 illustrates the flow of participants from initial identification to completion of the program.

Insert Figure 1 About Here

Acceptability

Participants rated their experience with the therapeutic relationship using the weekly SRS.

There was no significant difference between the mean ratings of those attending the individual versus group therapy modes of CBTp [$t(14)=0.24, p >.05$]. As such the participants appeared to have similar experiences with the therapists in each modality.

In order to better understand the experience of participating in the CBTp interventions, the participants were asked open-ended questions regarding a number of aspects of the interventions. Although the sample size was small, where possible emerging themes and representative quotes are presented below in order to illustrate the experiences of the participants.

The experience of taking part in the therapy. Most of the participants provided positive general evaluations concerning the usefulness of the therapy. For example, one participant stated ‘...it was very useful, very useful, because it was exactly what I needed’. Many participants were positive about particular experiences within the group, talking with enthusiasm about certain memorable activities. For example, one participant stated ‘the handouts were really good’, while another commented ‘the techniques (the therapist) instructed me to use, exploring... the condition... challenging the beliefs’ was useful’.

Techniques reported as consistently useful included; psycho-education “talking about my symptoms’ and handouts “the paperwork that was handed out was helpful”.

One participant though did find the experience with individual therapy draining:

“I was starting to get really exhausted and somewhat depressed from going over some of the things again, and I would just leave feeling just really emotionally exhausted in every way”.

The impact of the therapy upon the participant's life. The main emerging themes regarding the impact of therapy revolved around an increased insight and increased ability to cope with their symptoms of psychosis. One participant stated:

'...talking about my symptoms. I experience this; this is what I do to cope with it...I think I'm really in control of my illness now', and 'the fact that it helps me to cope...I'm going to be sick with schizophrenia but I'm going to be alright'.

A third participant provided a narrative of his/her illness which captures the difference in the way he/she perceived him/herself, their illness, and their ability to cope post intervention.

'Have you ever had a bad case of the flu? That's what schizophrenia is like in your brain. Your thoughts are not all cloudy, it's like someone had melted down a whole heap of tyres and encased them with bitumen. The bitumen is the schizophrenia. Its black in colour and it looks like ...melted tyres mixed with barbwire. You know, that's what it's like. It's all scitzy... It's like a world of wire ...in your head. Yeah but you know you're going to be able to cope'.

It was encouraging to hear that some of the participants could identify the implementation of some of the main messages of the CBTp intervention:

'Just with regards to the voices themselves, now I realise that they're not real. And they can't hurt anybody, me or anybody else'.

While another participant stated:

'The voices are going to be there, but you just let them be and ignore em'.

The importance of the therapeutic relationship. It appeared that the relationship between therapist and participants was of considerable importance irrespective of being in individual or group therapy. For example one participant noted:

'...the instruction was magnificent... (the therapist) was a really good counsellor... (the therapist) guided us, but knew when to give us room to express something and

then (the therapist) knew when to bring us back on track...(the therapist) held our hand the whole way. (the therapist) was so lovely, patient as Job...kind...funny and nonjudgmental', and '(the therapist) was a catalyst for change in my life...' .

Another participant stated:

'Telling them (therapist) about my problems with the voices, and she's/he's understandable [sic]. Yeah, she's/he's a good listener, and she'd/he'd give me advice on what to do, and how to manage it properly. Yeah'.

The experience of being in a group. Several participants' accounts demonstrated their perception of the group as a shared experience, for example:

'...knowing that other people in the group were having similar problems and it wasn't just my struggle, it was something that a lot of people struggle with', 'the social interaction to the shared experiences... learning other peoples journeys was...really helpful and have me insight into my own journey', and '...I think the group dynamic, you can't replace that'.

While participants indicated a valued 'shared experience' from the group, all group participants spoke of their difficulties and anxieties of sharing;

'we shared what we had to share', 'the only...problem with a group, there are some things you don't want to share in a group environment, so I might have been a little more comfortable sharing some things in a smaller...maybe solo session', and '...I only talked about the bad thoughts a little bit because nobody else there said that they had them'.

Outcomes

Reliable change indices were calculated for each participant as per Jacobson and Truax (1991). If test-retest reliability were not available, inter-rater reliability measures were substituted as per Gaudiano (2006) and Jacobson, Wilson and Tupper (1988). Change scores from pre to post-treatment are displayed in Table 1. Three of four participants in individual

therapy improved in severity of hallucinations. One participant in individual therapy demonstrated improvement in severity of delusions and one had a slight increase in severity of delusions. One participant in the individual condition improved in hallucinations but had a slight increase in severity of delusions. All three participants in the group condition improved in the severity of delusions. Two group participants improved in severity of hallucinations with an increase in severity for one participant. One participant in the group therapy had an increased severity of hallucinations but reduced severity of delusions and reported the greatest reduction in distress as measured by the K-10. In contrast there was no significant improvement in the overall functioning of the participants (LSP), and only one participant experienced an improvement in distress (K10).

Insert Table 1 About Here

In addition to comparing the participants on pre-therapy and post-therapy measures, comparisons were made on their weekly ratings on functioning (ORS) and the level of distress they were experiencing with their psychotic symptoms (PSDS). There was no significant difference between the individual and group therapy modalities on these weekly ratings (ORS $t(14) = 0.14, p >.05$, PDRS $t(14) = -.007, p >.05$) during the study.

Discussion

The results of this study provide preliminary evidence that suggests that individual CBTp may be feasible and acceptable to clients of the public adult mental health service. In this study there was no significant difference in participants receiving individual or group CBTp in terms of reduction in severity of hallucinations and delusions and in subjective ratings of the sessions. However attendance was better for those receiving individual therapy compared to group. In addition, reports from case managers indicated that participant concerns about being randomised into group therapy was the major reason for the high rate of participants not wanting to participate in this study.

The concerns about the group mode and the different rates of attendance however did not translate into differences in outcome, session ratings or attrition once therapy commenced. This is consistent with the findings of a meta-analysis which found no difference in effect sizes for CBTp delivered by individual versus group mode (Wykes, Steel, Everitt, Tarrrier, 2008). While the finding that both individual and group CBTp were helpful in reducing positive symptoms was consistent with the findings from Wykes et al. (2008) meta-analysis, our findings did contrast in that we found no improvement in functioning. It is possible that the lack of change in functioning may reflect the lack of a particular focus on function in the model used (Cather et al., 2005; Penn et al., 2004; Wykes, et al., 2008).

Although the benefits were equivalent between the two delivery modes, the expressed concerns of participants about the group delivery format suggests that those concerns could be a major barrier to engagement with a group. On a large scale this would translate into poor voluntary uptake of group CBTp by clients and potentially case managers. Future research should therefore consider the option of allowing participants to choose between individual or group CBTp rather than random allocation. Associated with this, a review of individual vs group CBT for early psychosis studies by Saksa, Cohen, Srihari and Woods (2009) noted that in the group therapy component of the EPPIC study (Albiston, Francey & Harrigan, 1998) clients self-selected and were found to be more severely ill at baseline. The Saksa et al. (2009) review suggested that individual therapy may be more effective for chronic cases and group therapy may be more beneficial in the early phases of illness. Participants in the present study were not allocated to treatment modality on the basis of length of illness nor severity and so this is a consideration to explore in future translational studies.

Limitations

Analyses, interpretation and generalisation are necessarily constrained by the relatively small sample size and so the findings in this study provide preliminary data to guide future translational studies that are needed to replicate these findings.

Implications

Despite the small sample size the results were consistent with the research in that individuals who persist with either individual or group CBTp experience benefits in terms of reduced severity of hallucinations and delusions (Wykes et al., 2008). Psychological distress and functioning did not change despite these reductions. This suggests that revisions of the manualised intervention based on the Turkington and Fowler models (Fowler, Garety, and Kuipers, 1995; Turkington and Siddle, 1998) may need to include an additional focus on more specific aspects of the experience such as functioning (Cather et al., 2005).

Tiered or stepped care CBTp interventions are likely to be the best organisational fit in terms of effectiveness and efficiency of resource utilisation (Brabban, Tai and Turkington, 2009). In this structure of therapy provision all staff working in psychosis would have an awareness of cognitive models of psychosis and be able to apply basic CBT techniques into routine care and make appropriate referrals for therapy; other staff would be trained in delivering brief CBTp (Lecomte et al., 2008; Sensky et al., 2000). In this study there was a clear expressed preference for individual therapy and a substantially lower attendance rate for the group modality. This indicates that for clients in the adult mental health system, any potential cost/time/labour benefit in group delivery would be negated by poor engagement and attendance. Hence, it may overall be more efficient for services to train CBTp specialists who would specialise in individual CBTp.

Conclusions

The findings from this feasibility study indicate that even though the outcomes may be similar for both individual and group CBTp for those who complete therapy, individual CBTp may be a more feasible and acceptable psychological intervention for adult psychosis

than group CBTp in adults with schizophrenia within an Australian mental health service. As such this study provides preliminary evidence to support the implementation of larger studies to explore the translation of individual CBTp into a viable psychological intervention for psychosis within an Australian mental health service and in accordance with the most recent regional guidelines (Galletly et al., 2016).

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Declaration of interest

Three of the contributing authors to this paper worked for Queensland Health at the time of the research which was funded by Queensland Health. The funding of the project paid for one of the authors (JW) who was project officer.

Ethical Standards

The authors assert that all procedures contributing to this work comply with the ethical standards of the relevant national and institutional committees on human experimentation and with the Helsinki Declaration of 1975, as revised in 2008.

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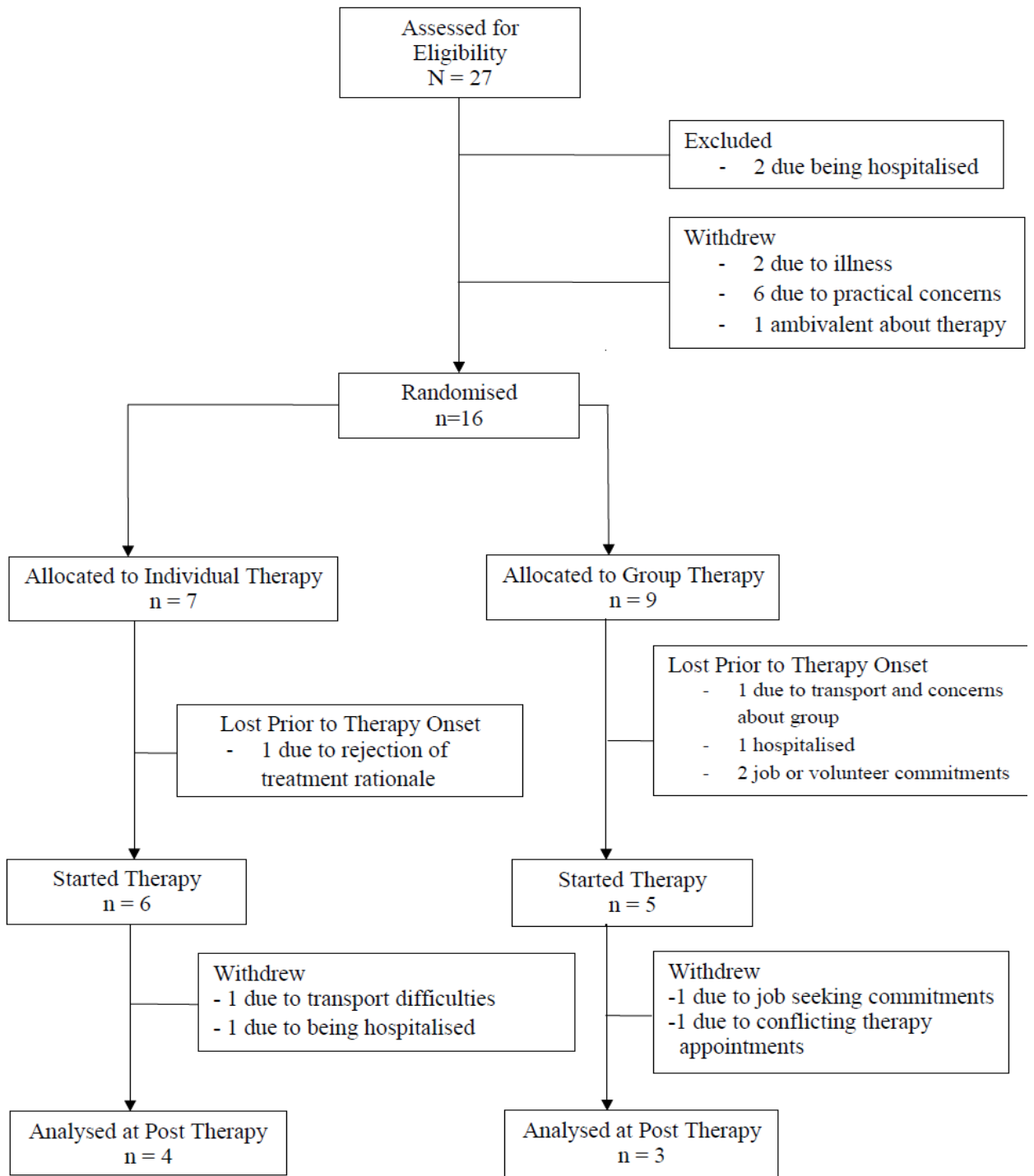


Figure 1. Flow diagram for study