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Cognitive behaviour therapy for improving social recovery in psychosis: Cost-effectiveness analysis

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ABSTRACT

A randomised trial was conducted in order to estimate the clinical and cost-effectiveness of social recovery orientated cognitive behavioural therapy (SRCBT) for people diagnosed with psychosis, compared to case management alone (CMA). The mean incremental health and social care cost, and the mean incremental quality adjusted life year (QALY) gain, of SRCBT was calculated over the 9 month intervention period. The cost-effectiveness of SCRBT was in turn estimated, and considered in relation to the cost-effectiveness threshold of £20 000 per QALY. The level of uncertainty associated with that decision was estimated by calculating the cost-effectiveness acceptability curve for SRCBT. $N=35$ received SRCBT and $N=42$ received CMA. The mean incremental cost was estimated to be £668, and the mean incremental QALY gain 0.035. SRCBT was estimated to be cost-effective as it had a cost per QALY of £18 844, which was more favourable than the assumed cost-effectiveness threshold of £20 000 per QALY. At that threshold the probability of being cost-effective was however estimated to be 54.3% according to the CEAC, suggesting that further research may be warranted in order to reduce the level of uncertainty associated with the decision as to whether SRCBT is cost-effective.

1. Introduction

Affective and non-affective psychosis are associated with poor social outcome—less than 50% of people with non-affective psychosis achieve social recovery, and only 10% return to work (Harrison et al., 1996). The associated annual cost is high—in England the societal cost of schizophrenia was estimated to be £6.7 billion in 2004/5 (equivalent to more than >£130 per population member) (Mangalore and Knapp, 2007). Social recovery orientated cognitive behavioural therapy (SRCBT) in early psychosis can improve activity and symptom levels (Fowler et al., in press), however as health care resources are scarce (Drummond et al., 2005; Sach et al., 2007) one has to ensure that provision of SRCBT constitutes value for money, compared to other health care services which might be provided. Thus, here we seek to estimate the cost-effectiveness of SRCBT, where young people in early psychosis were specifically targeted. For the following reasons, we also assess how such estimates of cost-effectiveness would have changed if medication costs had not been monitored. The use of modern anti-psychotics has increased 20-fold in the last 10 years (Appleby, 2007), and the associated per patient annual medication cost is now more than £1000 per annum (Davies et al., 2008). In spite of this, cost-effectiveness studies of psychological interventions often neglect to monitor medication costs e.g. (Byford et al., 2003; McCrone et al., 2004; Beecham et al., 2006; van Roijen et al., 2006). As this contradicts the recommendation of measuring the costs of as many services as possible (Glick et al., 2007), we seek to estimate the impact of this potential oversight.

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2. Methods

2.1. Participants

All individuals were taking part in the improving social recovery in early psychosis (ISREP) trial, the methods of which have been outlined elsewhere (Fowler et al., in press). Briefly, the ISREP trial was a randomised controlled trial which was designed to compare the effectiveness and cost-effectiveness of two interventions—case management alone (CMA), and SRCBT. Participants were recruited from two secondary care mental health services, and the inclusion criteria were: i) a current diagnosis of affective or non-affective psychosis (including schizophrenia, schizo-affective disorder, bipolar disorder, and psychotic depression), ii) illness duration ≤ 8 years, iii) positive psychotic symptoms (a score ≤4 on individual symptoms on the Positive and Negative Syndrome Scale (Kay et al., 1987)), and iv) currently unemployed or engaged in <16 h employment/education. Participants with acute psychosis, psychotic disorders thought to have an organic basis, or a primary diagnosis of drug dependency on opiates or cocaine were excluded.

2.2. Interventions

The interventions have been described in full elsewhere (Fowler et al., in press). Briefly, CMA (treatment as usual) involved active case management by multi-disciplinary secondary care mental health teams. SRCBT consisted of three stages and combined CBT techniques with vocational case management. In stage one a formulation of the person in social recovery was developed using assessment and history taking with respect to personal motivation, premorbid hopes/expectations and goals. Stage two involved identifying and working towards medium to long term goals (where appropriate this included referral to vocational agencies, or direct liaison with employers or education providers). Here, cognitive work sought to promote a sense of agency and address any feelings of stigma and negative beliefs. Stage three involved the active promotion of social activity, work, education and leisure linked to meaningful goals (including behavioural experiment approaches, as described in Butler (1999)), while managing symptoms of anxiety and low level psychotic symptoms. Mastery and pleasure associated with achieving goals was also reviewed, drawing upon Beck et al. (1996). SRCBT was available for a 9 month period, in one centre it was provided by therapists who had attended approved CBT courses, case managers (with previous experience of working in an early intervention in psychosis team, but no previous formal training in CBT) provided it in the other (both types of staff were employed on a similar grade). Adherence and competence was monitored using tape recordings and individual/group supervision.

2.3. Methods of data collection

2.3.1. Costs

In line with recommendations by the UK National Institute for Health and Clinical Excellence (NICE) (2008), costs were monitored from the perspective of the health service and personal social services, using the following methods. The number of SRCBT sessions received by each participant was monitored by those who provided such therapy. Other levels of resource use were monitored via a modified version of the Client Service Receipt Inventory (CSRI) (Beecham and Knapp, 1992) at both baseline and 9 months post-randomisation (9 month assessment). Participants were asked to report services received in the past 6 months, including: i) in-patient, out-patient, and residential care, ii) health professional visits e.g. general practitioner and psychiatrist (including contact time), and iii) any medication taken for their mental health problems.

Unit costs (in UK sterling (£) at 2006/7 financial year levels) were assigned to each type of resource use—medication costs were estimated from the British National Formulary (2006), all other costs were extracted from Curtis (2007). Thereby, (for each participant) the total SRCBT cost (over the 9 month intervention period) and the total 6 monthly cost of other health and social care services (prior to both the baseline and 9 month assessment) was calculated.

2.3.2. Benefits

The benefits according to the primary outcome measure (weekly hours spent in constructive economic and structured activity) and other secondary measures have been summarised elsewhere (Fowler et al., in press). Within cost-effectiveness analyses benefits are commonly assessed in terms of utility (where 0 is equivalent to death and 1 is equivalent to full health), in order to enable the effectiveness of many interventions to be compared on a common scale (Drummond et al., 2005; Sach et al., 2007). In line with recommendations by NICE (2008) we thus used the EQ-5D (Brooks, 1996) to measure, and compare, the benefits of both SRCBT and CMA (responses were sought at the baseline and 9 month assessment). The EQ-5D asks about the level of problems (none, some/moderate, or severe/extreme) with regard to mobility, self-care, usual activities, pain/discomfort, and anxiety/depression (Brooks, 1996). Utility scores were subsequently assigned to each of these elicited health state descriptions using the York A1 tariff (Dolan, 1997). We report the mean EQ-5D baseline, 9 month and change score.

2.4. Cost-effectiveness analysis

2.4.1. Missing data

In order to enable an intention to treat analysis to be undertaken, where all participants are included, when a level of resource use or the EQ-5D was not completed hot-deck imputation (HDI) (Fayers and Machin, 2000) was used to assign a value in place of the missing data point. Consequently, a missing value was replaced by a substitute value, drawn at random, from another participant in the same arm of the trial who had completed the respective question.

2.4.2. Base-case

We estimated the incremental health and social care cost (referred to hereafter as incremental cost), the incremental effect, and the incremental cost-effectiveness ratio (ICER) for SRCBT (compared to CMA), over the 9 month intervention period, using the following methods. Only SRCBT costs were monitored for the full intervention period. In order to