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Sustained reduction in health care costs after adjunctive treatment of graded intensive short-term dynamic psychotherapy in patients with psychotic disorders

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ABSTRACT

The aim of this pilot study was to evaluate the changes in symptom severity and long-term health care cost after intensive short-term dynamic psychotherapy (ISTDP) individually tailored and administered to patients with psychotic disorders undergoing standard psychiatric care. Eleven therapists with different levels of expertise delivered an average of 13 one-hour sessions of graded ISTDP to 38 patients with psychotic disorders. Costs for health care services were compiled for a one-year period prior to the start of ISTDP (baseline) along with four one-year periods after termination. Two validated self-report scales, the Brief Symptom Inventory and the Inventory of Interpersonal Problems, were administered at intake and termination of ISTDP. Results revealed that health care cost reductions were significant for the one-year post-treatment period relative to baseline year, for both physician costs and hospital costs, and the reductions were sustained for the follow-up period of four post-treatment years. Furthermore, at treatment termination self-reported symptoms and interpersonal problems were significantly reduced. These preliminary findings suggest that this brief adjunctive psychotherapy may be beneficial and reduce costs in selected patients with psychotic disorders, and that gains are sustained in long-term follow-up. Future research directions are discussed.

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1. Introduction

Despite advances in the pharmacological treatment of psychotic disorders (Kane and Correll, 2010) for reducing psychotic symptoms, around 80% of patients will relapse in the first 5 years following treatment (Nadeem et al., 2004). As a result, excess hospital and physician use relative to matched controls are reported over long-term follow-up (Wu et al., 2005; Rockland, 2010). For example, total excess societal costs for patients with schizophrenia in the United States were $62.7 billion. In fact, one study roughly estimated $32.4 billion in total excess costs of productivity loss and $22.7 billion in direct health care costs (Wu et al., 2005).

Recurrence is strongly influenced by social adversity and stress. A range of adjunctive psychotherapies have therefore been developed for people with schizophrenia and other psychotic disorders to target important psychosocial factors that impact the quality of long-term outcomes. These psychotherapies include training in social skills, family therapy and cognitive behavior therapy (CBT) (Pfammatter et al., 2006). Early research on the use of talking therapy for psychosis did not support the use of traditional psychodynamic talking therapy when used as the primary treatment approach for hospitalized patients requiring acute care (Malmberg and Fenton, 2001; Amos, 2012) as a result, the current evidence-based guidelines for schizophrenia mainly suggest CBT (NICE, 2014).

More recently however, modified forms of psychodynamic psychotherapy have been studied as adjunctive or maintenance treatments. Manualized supportive psychodynamic psychotherapy (Rosenbaum and Harder, 2007) was used in a Danish study (Rosenbaum et al., 2012) involving 269 patients with first episode psychosis consecutively assigned to either weekly individual sessions of psychodynamic psychotherapy in addition to standard treatment as usual (TAU) for a period of one to three years, or to TAU. At two years of follow-up, supportive psychodynamic therapy plus TAU had a significant advantage over TAU alone on levels of social function (GAF function) and general symptom severity (GAF symptom). Psychodynamic psychotherapy also showed significant improvement on measures of positive and negative symptoms (PANSS) over treatment.

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Personal Therapy, developed by Hogarty (2002), is a treatment method built to improve affect tolerance in patients with schizophrenia. It has been shown effective in producing long-term reduced rates of relapse in patients with schizophrenia who live with their families but showed a negative effect on those not living with families. The method also helped improve social and occupational function (Hogarty et al., 1997).

Another contemporary psychodynamic model, intensive short-term dynamic psychotherapy (ISTDP), can be modified for psychosis (Abbass, 2001; Abbass, 2002; Abbass and Bechard, 2007). It is a supportive, emotion-focused format of talking therapy that is graded and adapted to the capacity of each patient. It targets the residual symptoms of anxiety and depression as well as some residual psychotic symptoms that can persist after the patient is stabilized with medications. This model of psychotherapy has a specific format, called graded ISTDP, that was developed to help patients improve anxiety tolerance, and awareness of emotional processes that impact on symptoms, perception and social interaction (Abbass and Town, 2013).

Relatively few studies have examined the cost-effectiveness of psychotherapies for psychotic disorders (The Committee on Psychotherapy Group for the Advancement of Psychiatry, 2010). Family therapy and related interventions for psychotic disorders have been shown to be cost-effective (Rockland, 2010). There is also some evidence that social skills training may reduce overall costs (Benton and Schroeder, 1990). A recent study of combined family therapy, assertive community treatment and skills training found evidence for cost-effectiveness (Hastrup et al., 2013). To our knowledge, no studies have yet investigated the long-term impact on health care costs of adjunctive psychodynamic psychotherapy or any other form of individual psychotherapy for psychotic disorders. Such research is important because Lazar reported that treatment effects tend to be short-lived in existing studies (The Committee on Psychotherapy Group for the Advancement of Psychiatry, 2010).

The objectives of this pilot study were to evaluate whether a group of patients with psychotic disorders treated with adjunctive graded ISTDP would experience improvement in symptoms and interpersonal problems and reductions in health care costs. A further objective was to examine whether any observed cost reductions would be sustained over a follow-up period up to four years after treatment termination.

2. Methods

2.1. Participants

Patients referred for psychotherapy assessment were referred from the early psychosis program, community mental health teams, psychiatrists or family physicians. Patients who were seen in the initial interview to have active psychotic features or psychosocial disorganization precluding engagement in a psychotherapy trial were excluded: in these cases a standard psychiatric assessment was provided and the patient was referred back to the referral source or elsewhere for treatment. Psychiatrists from the Centre performed all intake assessments. We included all patients who had graded ISTDP provided by professionals at all levels of expertise with this treatment method.

2.2. Setting

The clinical setting was The Centre for Emotions and Health, a tertiary psychotherapeutic service linked to Dalhousie University and located in the Queen Elizabeth II Health Science Centre in Halifax. This service receives referrals from psychiatry specialties, the emergency department, family practice offices, medical–surgical specialties and mental health professionals. It is a teaching and research service specializing in assessing and treating emotional contributors to diverse clinical presentations using ISTDP (Abbass et al., 2012).

2.3. Procedures

This was a substudy of a larger quasi-experimental study reviewed by the local hospital ethics review board and registered in ClinicalTrials.gov as identifier number NCT01924715. That study compared health costs pre and post-treatment both within group and between cases and a control group of non-treated referred patients. The baseline costs of this control group were vastly lower than the baseline costs of the psychosis group: hence, we opted only to report here the within group data in the psychosis group. There were no significant pre-versus-post cost changes in the control group in the overall study (Abbass et al., 2011).

For each participant health card numbers, dates, number of sessions of graded ISTDP treatment and demographic data were recorded. The treating therapist and supervising psychiatrist made DSM-IV diagnostic assessments using referral information, clinical interviewing, and observation during the treatment courses. Medications were monitored by the treating therapist or supervising psychiatrist. Standardized self-reports outcome measures of symptom severity were implemented partway through the years of this study.

For data extraction and analysis, all personal identifiers were removed, and provincial health card numbers were encrypted and sent to the PHRU, These data covered both hospital separations and billing data from all physicians. Health Canada and the Public Health Agency of Canada have both used administrative datasets for chronic disease surveillance (Kisely et al., 2009). Although these data were collected for billing rather than surveillance, studies using these datasets for disease surveillance have shown acceptable accuracy over time and relative to other measures (Williams and Young, 1996; Kisely et al.,. 2009).

All patients were from Nova Scotia with valid provincial health card numbers; hence, all of their health care service use was recorded in the provincial health care registry and accessible by the Population Health Research Unit (PHRU), a population health database with access to provincial inpatient and outpatient health care service use (Department of Community Health and Epidemiology, 2014). Independent professionals at the PHRU extracted mean hospital costs, physician costs and total healthcare costs from government databases for the period of one year duration prior to start of psychotherapy (baseline), and for the post-treatment periods of one, two, three and four years after termination of psychotherapy. This database also yielded age, gender, income, place of residence (urban versus rural) and primary diagnoses made by physicians in the year before referral. To eliminate the effects of cost variations over time, the PHRU provided 2007-equivalent cost values for all physician services and hospital stays regardless of the year they were treated, based on diagnosis and procedure codes. These were compared with mean physician billings per person for the Nova Scotian population (Nova Scotia Department of Health, 2008) and Canadian population average inpatient costs for 2007 (Canadian Institute for Health Information, 2013).

2.4. Measures

To evaluate the effectiveness of graded ISTDP on clinical symptoms, treated cases completed baseline and post-treatment self-report ratings on two different scales. The Brief Symptom Inventory (BSI) (Derogatis, 1993) is a well-validated 53-item self-report measure with nine symptom subscales including paranoid ideation, depression, anxiety and 'psychoticism'. The Inventory of Interpersonal Problems (IIP) (Horowitz et al., 1988) is a validated 32-item self-report scale with eight subscales describing interpersonal difficulties. The BSI has been well studied in schizophrenia (Long et al., 2007) and both global scales and some subscales have been found to correlate with Positive and Negative Syndrome Scales ratings (Preston and Harrison, 2003). Both the global mean item score (BSI-GSI) and BSI subscales are considered valid instruments to measure symptoms in schizophrenia (Long et al., 2007). The IIP has been studied in psychotic disordered populations and been found to relate with treatment engagement and alliance and hence, may reflect important treatment variables (Johansen et al., 2013).

2.5. Psychotherapy intervention and therapists

All treated cases received graded ISTDP, an individual integrated form of psychotherapy emphasizing emotional awareness and augmenting the capacities to self-reflect as well as tolerate and experience emotions. The method begins with an extended therapeutic trial interview with a psycho-diagnostic procedure to help determine the relative contribution of emotional factors to the individual's clinical presenting problems (Abbass et al., 2009). The interview also includes therapeutic elements where emotions related to adverse life events are examined and processed where possible. This interview appears to bring symptomatic relief in diverse populations, with superior effects to standard psychiatric intake interviews (Abbass et al., 2008a; Abbass et al., 2009). Since Nova Scotia is a geographical region of over 55,000 square kilometers, one third of patients travel to the Centre from distance. Many patients only attend an extended trial therapy session, and recommendations are provided to local treating mental health professionals. Likewise, local mental health services often refer patients for a single session trial therapy to assist in designing psychotherapy treatment in a case where treatment

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is of limited effect. These trial therapies are video recorded where patients are willing and the recordings are made available to treating therapists.

For patients with psychotic disorders, treatment is supportive and tailored to the individual patient's anxiety tolerance (Abbass, 2001; Abbass and Bechard, 2007). Treatment sessions typically focus on specific situations in which the patient reports the onset or worsening of symptoms. The therapist closely attends to how a patient responds to the emotions that arise during this process and, specifically, levels of anxiety in the interview. The patient is helped to notice the physical and cognitive components of anxiety that arise while reviewing the incidents. This process has both a supportive and psycho-educational component which reduce anxiety and build self-reflective capacity. This method is devoid of any challenge to interrupt patient responses (defenses), thus clearly distinguishing it from the standard ISTDP approach typically used with a different population of treatment-resistant patients. It is therefore a process where emotional and cognitive processes are activated and reviewed with the aim of increasing self-awareness and developing better tolerance of emotions (Abbass and Bechard, 2007). After the patient has the capacity to tolerate emotions, some of these unprocessed emotions may be experienced to facilitate grieving of losses and resolution of internal conflicts (Abbass and Bechard, 2007). Losses related to the illness, hospitalizations and imposed treatments are also grieved (Abbass, 2001; Abbass, 2002). The treatment is, however, primarily focused on the "in office" processes of regulating emotions, even if the topic is past experiences. For some patients graded ISTDP treatment was limited to 20 weekly, one hour sessions, as a pilot study of this graded method for patients with early psychosis. Other patients treated outside this pilot had an unrestricted number of weekly, one-hour sessions.

Therapist adherence to treatment guidelines was augmented in several ways. Firstly, therapists attended weekly didactic courses led by an experienced trainer. Secondly, weekly small-group supervision with an experienced supervisor was provided using review of video-recordings of treatment sessions (Abbass, 2004). Thirdly, therapists were provided technical literature on this format of psychotherapy (Davanloo, 2000). Finally, formal checks on treatment fidelity were conducted during supervision by the acting supervisor through review of video-recordings of treatment sessions, using a four-point likert scale in which a cut-off score of three was considered adherent (Abbass et al., 2008b).

2.6. Data analyses

The study had an open design. The PHRU provided health care costs for several time periods: one prior to graded ISTDP treatment (baseline), and then four consecutive one-year periods after termination. To assess changes in costs over time, we performed pre-versus-post comparative analyses (paired *t*-tests) for physician billings and hospital costs, contrasting the baseline year to the one-year period after treatment termination. These statistical analyses had to be computed by an external party (PHRU). As such, there were only pair-wise investigations of cost changes between the one-year period before and the one-year period after treatment. No statistical analyses were computed for costs changes between baseline year and two, three and four years after termination of treatment.

Table 1
Characteristics of the ISTDP-treated cases ($n=38$).

		n	%
Gender	Female	18	47.4
	Male	20	52.6
Age (years)	19–35	15	39.5
	36–60	22	57.9
	60+	1	2.6
Residence	Urban	33	86.8
	Rural	5	13.2
Income distribution[a]	First quartile	6	15.8
	Second quartile	15	39.5
	Third quartile	9	23.7
	Fourth quartile	6	15.8
	Unknown	2	
Diagnosis	Schizophrenia	17	44.7
	Delusional disorder	7	18.4
	Psychotic disorder NOS	7	18.4
	Schizophreniform disorder	5	13.2
	Schizoaffective disorder	1	2.6
	Brief psychotic disorder	1	2.6
Comorbidity	Anxiety disorder	17	44.7
	Personality disorder	14	36.8
	Depression	12	31.6

[a] Relative to area of residence mean incomes.

In terms of symptom and interpersonal problem severity (BSI and IIP), changes over time in the ISTDP group were investigated using random intercept models with Maximum Likelihood Estimation (Gueorguieva and Krystal, 2004) in order to handle missing data at post-treatment time. This form of estimation provides unbiased estimates under the less restrictive assumption of data missing at random (MAR; Mallinckrodt et al., 2001), which allows the probability of data being missing to be dependent of the outcome variables (e.g. symptom level as measured by the BSI and the IIP; Little and Rubin, 2002). In this study, data was assumed to be missing at random. The study was considered exploratory, hence, a Bonferroni correction was not used in the analyses due to its conservative nature. Therefore, the significance level was kept at 0.05. Within-group effect sizes (Cohen's *d*) were calculated by dividing the differences in means by the pooled standard deviations (Borenstein, 2009). Effect sizes can be interpreted as follows: an effect size in the range of 0.20–0.49 is small, while 0.50–0.79 is moderate, and an effect size of 0.80 or greater is large (Cohen, 1988).

3. Results

3.1. Description of sample

Forty-six patients with psychotic disorders were referred during the study interval. Of these, eight patients received only a standard psychiatric assessment and medication recommendations due to active, unstable psychotic symptoms with psychosocial impairment precluding a psychotherapy trial. Psychiatrists from the Centre performed all these intake assessments. The remaining 38 patients comprised the included sample. These were mainly young patients residing in urban residential areas with modest mean incomes (mostly 2nd to 4th income quartiles, see Table 1). Twenty-two were single, 10 were married and 6 were divorced. Twenty-three were not employed, 9 were employed (2 part-time) and 2 were full-time students (2 missing data). Twenty-two lived with family, 13 lived alone and 2 lived in supported housing (1 missing data). They were on a total of 23 antidepressants, 21 antipsychotics (mean 3.4 mg equivalents of risperidone), 12 benzodiazepines (mean 1.2 mg clonazepam equivalents), four other sedatives and four mood stabilizers. Demographic and clinical characteristics of the sample are presented in Table 1.

3.2. Treatment and adherence

Eleven therapists provided individual ISTDP therapy to these 38 patients. The average patient was treated by a therapist with an average of 1073 (S.D. 638) hours of didactic training, along with 303 (S.D. 138) hours of supervision and a total of 1399 (S.D. 782) training hours. The average number of psychotherapy sessions was 13 (S.D. 24, range 1–100) per patient. Twelve of the 38 patients were only seen for an extended trial therapy with treatment recommendations provided to referring clinicians. The remainder of patients were seen for 17.8 (S.D. 28, range 2–100) sessions of ISTDP. These supportive sessions appeared to be well tolerated, with only two patients (5.3%) dropping out.

Therapists' adherence to graded ISTDP was measured in seven therapists over several sessions, using a four-point Likert scale. The mean therapist adherence was 3.1 (S.D. 1.1), suggesting sufficient adherence. Twenty-two of the treatments were provided by the instructor and were also considered treatment adherent.

3.3. Healthcare costs

Descriptive parameters for health care costs (physician, hospital, and total) over time are presented in Table 2. Significant cost reductions were observed during the one-year post-treatment period, relative to pre-treatment baseline year, for both physician costs, $t(37)=2.13$, $p<0.05$, and hospital costs, $t(18)=3.57$, $p<0.01$.

In terms of group average reductions in health care costs after ISTDP treatment, the first post-treatment year revealed a marked regression in costs (Fig. 1); this drop involved a 68% ($17,622)

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Table 2
Means (standard deviation) for health care costs[a].

Timeline		Health care		
		Physician	Hospital	Total
Prior to start of ISTDP	Baseline year	1016(1673)	24,974(65,028)	25,990(45,977)
After termination of ISTDP	Year 1 ($n=38$)	610(669)*	7758(36,399)**	8368(27,053)
	Year 2 ($n=31$)	523(652)	1483(3972)	2007(3104)
	Year 3 ($n=28$)	397(436)	1238(1860)	1635(1351)
	Year 4 ($n=14$)	294(346)	851(2182)	1045(274)

[a] In Canadian dollars and in 2007-equivalent.
* Within-group change from baseline year is significant at $*p < 0.05$.
** Within-group change from baseline year is significant at $**p < 0.01$.

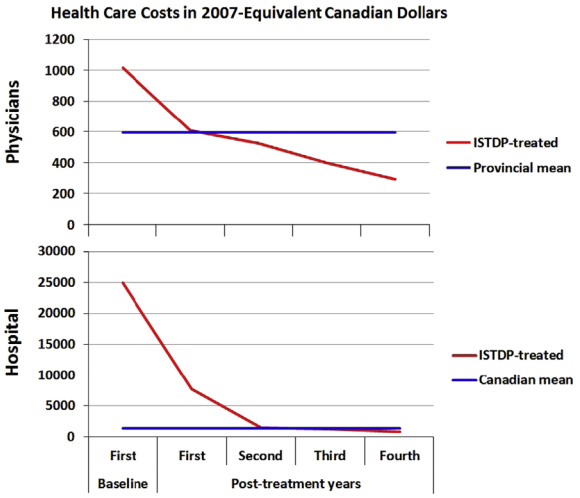


Fig. 1. Health care costs in 2007-equivalent Canadian dollars.

reduction in total health care costs relative to baseline year. Reductions in health care costs were further accentuated in the three following years. Relative to total health care costs computed for post-treatment year one, further average reductions of 76% ($6361), 80% ($6733) and 88% ($7323) were observed for the follow-up years two, three and four, respectively. The costs decreased each subsequent year. Physician costs in follow-up years two, three and four were below population norms of $600 (Nova Scotia Department of Health, 2008). Hospital costs in years three and four were below population norms of $1289 (Canadian Institute for Health Information, 2013).

3.4. Self-report outcomes

Due in part to implementation of standardized outcome measures partway through the years of this study, self-reports of symptom severity were acquired only for 19 (50%) of the 38 ISTDP-treated cases. Patient groups with and without such measures had no differences in age or gender. Thirteen and 11 patients completed the BSI and the IIP at termination, respectively. Mixed-effects model analyses showed a significant pre- to post-treatment improvement on both the BSI-GSI, $F(1, 13.4)=6.77$, $p<0.05$, $d=0.42$, and the total IIP, $F(1, 14.7)=5.54$, $p<0.05$, $d=0.39$, with small effect sizes. Self-reported "paranoid ideation" and "social inhibition" (among other subscales) were improved significantly (Table 3). In the case of paranoid ideation, a key feature of psychotic disorders, it was more than halved to 0.67, which was within community norms. Interpersonal problem domains related to individuals with psychosis, social inhibition, coldness and self-centredness, were likewise significantly reduced with modest to moderate effect sizes.

Table 3
Descriptive and statistical parameters for self-report measures.

Scale	Subscale	Intake	Termination	Effect of time		
		M(S.D.)	M(S.D.)	*F*	*p*	*d*
BSI	Somatization	1.04(0.8)	0.91(0.6)	0.05	0.835	0.18
	Obsessive	2.04(1.1)	1.39(0.9)	8.76**	0.010	0.32
	Interpersonal	1.91(0.9)	1.42(1.0)	3.64[tr]	0.074	0.37
	Depression	1.90(0.9)	1.46(1.3)	3.26	0.092	0.22
	Anxiety	1.74(0.8)	1.43(1.0)	5.04*	0.040	0.26
	Hostility	1.11(0.8)	0.83(0.8)	2.84	0.110	0.34
	Phobic anxiety	0.95(0.9)	0.62(0.5)	1.80	0.203	0.37
	Paranoid ideas	1.38(1.0)	0.67(0.6)	6.99*	0.018	0.36
	Psychoticism	1.65(0.9)	1.17(1.0)	1.32	0.269	0.01
	Total score	1.51(0.7)	1.08(0.6)	6.77*	0.021	0.42
IIP	Domineering/controlling	0.90(0.8)	0.89(0.7)	0.03	0.872	0.04
	Vindictive/self-centered	1.43(1.0)	0.83(1.0)	7.92*	0.013	0.58
	Cold/distant	1.72(1.2)	1.06(1.0)	4.72*	0.046	0.47
	Socially inhibited	2.06(1.2)	1.31(0.8)	5.19*	0.038	0.41
	Non-assertive	1.92(1.2)	1.30(1.1)	4.33[a]	0.056	0.40
	Overly accomodating	1.76(1.1)	1.21(0.8)	3.46[a]	0.085	0.38
	Self-sacrificing	1.09(0.8)	1.04(0.7)	0.09	0.773	0.04
	Intrusive/needy	0.84(0.8)	0.88(0.8)	0.25	0.626	−0.25
	Total score	1.48(0.7)	1.07(0.7)	5.54*	0.033	0.39

BSI, Brief Symptom Inventory. IIP, Inventory of Interpersonal Problems. Sample size for self-reports at intake was 19 cases; at termination, it was 13 and 11 patients for the BSI and IIP, respectively. *F*, computed from Maximum Likelihood Estimation.
[a] Trend, $p<0.10$.
* $p<0.05$.
** $p<0.01$.

4. Discussion

With specific limitations, we found preliminary evidence that an adjunctive psychotherapy targeting emotion self-regulation, self-reflective capacity and interpersonal function, may add benefits in stabilized patients with psychotic disorders. Our findings of sustained healthcare cost reduction and improvements in self-reported symptoms suggest possible benefits that warrant further study.

The four-year average cost reduction per patient was greater than $85,000, a sum over 50 times the cost for 13 treatment sessions (Abbass and Katzman, 2013). In comparison with population averages, these patients went from being extremely high to low users of the healthcare system. Although we do not have control data for patients with psychosis alone, the mixed control group of the parent study (referred to the service but not seen for ISTDP treatment) did not experience any reductions in hospital costs or overall healthcare costs (Abbass et al., 2015). This study

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offers further data that a treatment like ISTDP may facilitate health cost reduction when provided to diverse clinical populations (Abbass and Katzman, 2013).

In comparison with other studies, this group of patients with psychotic disorders had baseline symptom severity levels on the BSI-GSI that were similar to those reported in psychiatry outpatients from the United States and Great Britain (1.32 and 1.65, respectively) (Ryan, 2007). Following the acute stage of psychosis and during remission, such symptoms and deficits commonly remain. These residual symptoms interfere with social recovery and psychological functioning; therefore, they can be expected to contribute to excess health care service use. Thus, it is important to find that this treated sample both reported symptom/interpersonal gains and experienced large, significant healthcare cost reductions at long-term (4-year) follow-up. Although we lack active follow-up after treatment, diverse research in this method has found symptom and interpersonal gains to increase over long-term follow up in diverse treated samples: hence, accrued effects from this therapy may account for sustained gains and health service use reductions (Town et al., 2012b, Abbass et al., 2014a). Furthermore, the therapy appeared to be well tolerated given that these patients had an average of 13 sessions each.

Such treatment benefits are not always found in psychotherapy trials with this population. A large multicenter randomized controlled trial (RCT) assessing the effects of cognitive behavioral therapy (CBT) and family interventions in this population found no adjunctive treatment effects on remission, relapse and hospitalization rates over the post-treatment periods of one and two years after treatment (Garety et al., 2008). Regarding symptom reduction, a recent meta-analysis compiling the effects of adjunctive CBT across 34 studies in this population (Jauhar et al., 2014), reported a pooled effect size of 0.33 for overall symptom reduction but this effect size was reduced to 0.15 when studies with unblinded ratings were removed from the analysis.

It maybe that a combination of common and specific psychotherapy factors in these two treatments, including degrees of emotion processing, produce differential results in specific psychiatric populations. For example, recent neuroimaging studies suggest that psychodynamic psychotherapy can be effective in treating depression in cases with specific imaging findings that predict poor response to CBT (Abbass et al., 2014b). These same functional neuroimaging findings, including over-activity in the anterior cingulate cortex and other markers of functional disconnection in regions involving emotion regulation, are found in patients with schizophrenia (Ruiz et al., 2013). One testable hypothesis to explain any differential treatment effects is that some patients with psychotic disorders selectively respond to efforts to address emotion regulation deficits.

The limitations of this study are significant, rendering these results preliminary and underscoring the need for formal evaluation. First, this study is observational in nature, meaning that other factors might account for the findings. For example, many of these cases concurrently or subsequently received other mental health care, such as that provided by the early psychosis program or referring therapists. Some of these cases were only seen for a single extended therapy trial in order to facilitate treatment in the community: hence, these cases had a small dose of this therapy, even if it influenced psychotherapy provided afterward. Incomplete self-report data, the lack of objective ratings and the relatively small sample size altogether limit the conclusions that can be reliably drawn from the outcome results. We lack details of treatment tolerance, possible therapist effects and patient reports on their perspectives of the treatment: thus, we lack data on the generalizability of this approach in this clinical population. Finally, limitations existed in terms of the type of statistical analyses possible due to the limits on available data.

5. Conclusion

These preliminary data suggest that this form of short-term therapy, targeting ongoing symptoms and deficits in stabilized patients with psychosis, may be beneficial for select patients with psychotic disorders. Formal study is warranted, including diagnostic and treatment standardization, a randomized control group, session-by-session evaluation and objective outcome ratings. Such research should also examine if in-session processes inherent to ISTDP, such as capacity to identify and experience complex emotions, predict subsequent self- report gains and healthcare cost reduction (Town et al., 2012). It should also examine the patient characteristics of more versus less responsive patients to determine guidance on when a clinical trial of this approach may be warranted.

Conflict of interests

The authors declare no conflicts of interest.

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