



Integrated treatment ameliorates negative symptoms in first episode psychosis—results from the Danish OPUS trial

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Abstract

Purpose: To investigate the effect of integrated treatment on negative, psychotic and disorganised symptoms in patients with first episode psychosis.

Method: A RCT comparing integrated treatment (IT) with standard treatment (ST) was conducted, including 547 patients, aged 18–45, diagnosed with schizophrenia spectrum disorders. All patients were assessed with SCAN, SAPS and SANS at entry and after 1 and 2 years. The IT consisted of assertive community treatment, multifamily groups, psycho-education and social skills training, and the caseload was 1:10 compared with 1:25 in ST.

Since attrition was considerable, a mixed model analysis with repeated measurements was used to examine the possible effects of IT statistically.

Results: IT reduced both negative and positive symptoms significantly better than ST. Most marked were the results from the negative dimension, where all five global scores from SANS had a significantly better reduction in IT. Sub-analyses did not single out any one element in the integrated treatment that could explain this result.

Conclusion: Integrated treatment significantly reduced both negative and psychotic symptoms, assumably due to the different psychosocial treatment elements that were provided in the IT.

The results indicate that the integrated approach is crucial, since, most likely, many aspects of the integrated treatment have contributed to the reduction of symptoms.

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1. Introduction

Negative symptoms are often less visible than psychotic symptoms when patients with first episode

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psychosis are diagnosed or admitted. However, family members or partners will often report changes in energy, empathy or engagement in the surroundings of the patient over the last weeks, months or even years. Negative symptoms influence the patients' abilities to maintain their social functioning and to create social networks (Macdonald et al., 2000), since aspects like asociality, anhedonia and apathy all contribute to isolation and introvert behaviour. And since negative symptoms are known to correlate with poorer prognosis and poorer social outcome, their influence must not be underestimated or ignored (McGlashan and Fenton, 1992; Ho et al., 1998).

Negative symptoms can be divided into primary and secondary negative symptoms as suggested by Carpenter (Carpenter et al., 1988). Primary negative symptoms are the core symptoms of the disorder; they have an insidious development and an enduring nature and appear long before patients seek treatment. Secondary negative symptoms are negative symptoms caused by extrinsic factors like side effects of medication (Carpenter et al., 1985), abuse, social deprivation caused by hospitalisation or social isolation (Wing and Brown, 1970) or they are a psychological reaction to psychotic symptoms (Buchanan and Gold, 1996). Males have been shown to have more severe negative symptoms (Leung and Chue, 2000).

In principle, secondary negative symptoms can be treated by specific pharmacological and psychosocial treatment elements directed against the causing agent. However, while psychotic symptoms are by and large relieved by antipsychotic medication, negative symptoms are more resistant to pharmacological treatment (Arango et al., 2004). As mentioned, negative symptoms may even be a side effect of high doses of antipsychotic treatment of the psychotic symptoms (Moller, 2003). Nevertheless, the second generation antipsychotics (SGAs) seem to have a better effect on negative symptoms than first generation antipsychotics (FGAs) (Moller, 2003).

Both negative and psychotic symptoms have a complex origin and a global influence on the patients' lives biologically as well as socially and psychologically. The psychosocial point of view is crucial when treatment for future patients with first episode psychosis is being planned as described by, e.g. Lauriello et al. (2003) in his review "Maximizing

the synergy between pharmacotherapy and psychosocial therapies for schizophrenia".

2. Aim

We aimed to investigate if integrated treatment (abbreviated IT, please see Section 3.5 for description. OPUS being the name of the project) is more efficient in treating negative, psychotic and disorganised symptoms in first episode psychosis (mainly patients with schizophrenia) than standard treatment (ST). Second, to analyse if there was a specific effect of IT for subgroups divided by diagnosis of schizophrenia, abuse, gender, and age. The three subgroups were chosen on the basis of the literature. Diagnosis of schizophrenia is associated with poor prognosis and poor functioning (Davidson and McGlashan, 1997; Arndt et al., 1995), abuse is associated with treatment resistance (Hall and Degenhardt, 2000), and male gender is associated with more severe negative symptoms (Leung and Chue, 2000). Age was chosen since the IT contains elements that had special appeal to young patients. Third, we aimed to describe in detail how the two kinds of treatment that were provided differed and to analyse if one treatment element could account for the major effect.

3. Materials and methods

3.1. Design

A randomised controlled study was conducted in Copenhagen and Aarhus comparing standard treatment (ST) with "integrated treatment" (intensive psychosocial assertive community treatment—IT) while investigating the effects of early detection.

3.2. Subjects

Patients aged between 18 and 45 were included if they met the criteria for ICD-10 diagnoses of schizophrenia, acute or transient psychotic disorder, schizotypal disorder, schizoaffective disorder or other delusional disorders in the F.2 spectrum. All patients had to be able to speak and understand Danish; none of the patients had been treated with antipsychotic

medication for more than 12 weeks; and the psychiatric symptoms were not due to any organic condition. Use of psychoactive drugs did not cause exclusion as long as solely poisoning or a withdrawal state did not cause the psychotic condition.

The patients were referred to the project from general practitioners, psychiatric wards (both in- and outpatients) or from social service centres. 547 patients were included from January 1998 until December 2000, 224 women and 323 men.

At entry there were no differences between the two treatment groups concerning age, gender, socio-demography, diagnosis, duration of untreated psychosis (DUP), psychopathology (SAPS, SANS), abuse, GAF scores, work or educational status.

3.3. Randomisation

The Copenhagen Trial Unit carried out the randomisation in Copenhagen by using a computer generated randomisation list that was stratified in alternating blocks for five centres. In Aarhus a secretary drew lots when the researchers phoned her.

3.4. Assessments and data collection

The patients were interviewed and assessed by independent, trained professionals at baseline, and after 12 and 24 months. As part of a comprehensive interview several instruments were used to collect the data:

1. The diagnoses were based on SCAN interviews, version 2.0 and since 1999 version 2.1 (Wing et al., 1990). Any second diagnosis of substance abuse was also based on SCAN.
2. Socio-demographic status.
3. Psychopathologic symptoms were assessed using SAPS (The Scale for Assessment of Positive Symptoms (Andreasen, 1984) and SANS (The Scale for Assessment of Negative Symptoms (Andreasen, 1982). The positive symptoms can, according to Arndt et al. (1995), be divided into the two dimensions: psychotic (consisting of the global scores of hallucinations and delusions), and disorganised (global scores of bizarre behaviour, formal thought disorder and the single item “inappropriate affect”) while the negative dimen-

sion consists of the negative symptoms (global scores of affective flattening, avolition, and anhedonia). These three separate dimensions were used as the measures of psychopathology.

4. Medical records were used to register all service use, as well as medical prescriptions and compliance. Good compliance was defined as “having taken the prescribed antipsychotic medication in the recommended doses regularly during the previous three months”.

At the 1- and 2-year follow-ups the use of medication and service use was registered and data was, when possible, supplemented with information from medical records from the preceding year.

The interviewers were psychiatrists, psychologists or doctors training in psychiatry. For practical reasons they were not blinded to the type of treatment the patients received. Inter-rater reliability was measured for SAPS (12 interviews) and SANS (14 interviews) and was found very good for the psychotic dimension (intra-class correlation coefficient 0.88) and moderate for the negative dimension (ICC 0.54).

Approval by the Ethics Committee and by the Danish Data Protection Agency was obtained before the study started.

3.5. The intervention

The treatment period was 2 years. Patients in both treatment groups were offered antipsychotic medication according to guidelines from the Danish Psychiatric Society (Dansk Psykiatrisk Selskab DPS 1998) recommending a low-dose strategy for first episode psychotic patients and use of SGA drugs of first choice.

3.5.1. Integrated treatment (IT)

This study was described in detail by Petersen et al. (2005).

A multidisciplinary team with a 1:10 caseload provided the integrated treatment elements consisting of assertive community treatment, social skill training and multifamily groups. Included in the team were a psychiatrist, a psychologist, a psychiatric nurse, an occupational therapist and a social worker. As a part of the “integrated” approach, one primary staff member was responsible for coordinating all the

treatment elements and social arrangements and maintained the primary contact with the patient. An individual and flexible plan for treatment was made in cooperation with each patient in order to meet his or her needs and expectations and to ensure treatment adherence. Patients saw their primary staff member weekly, often in the patients' homes and the primary staff member kept in contact if patients were admitted and coordinated the treatment plan at discharge.

A social skills training programme focusing on psycho-education, e.g. basic social skills, relapse prevention, medication and side effects, as well as drug abuse, was provided either individually or in

groups, always on the basis of an evaluation of the patients' abilities and needs. It was based on problem solving strategies learned from role-plays and principles from cognitive therapy. It took place biweekly for the first 2 months and then once a week for the following 10 months. Depending on the patients' and the relatives' needs and willingness to cooperate, there were offers to join psycho-educational multifamily groups a.m. McFarlane, focusing on problem-solving procedures. Starting with individual family meetings without the patient and a workshop with formal education for four to six families, the multifamily groups met 1½ h bimonthly for 18 months.

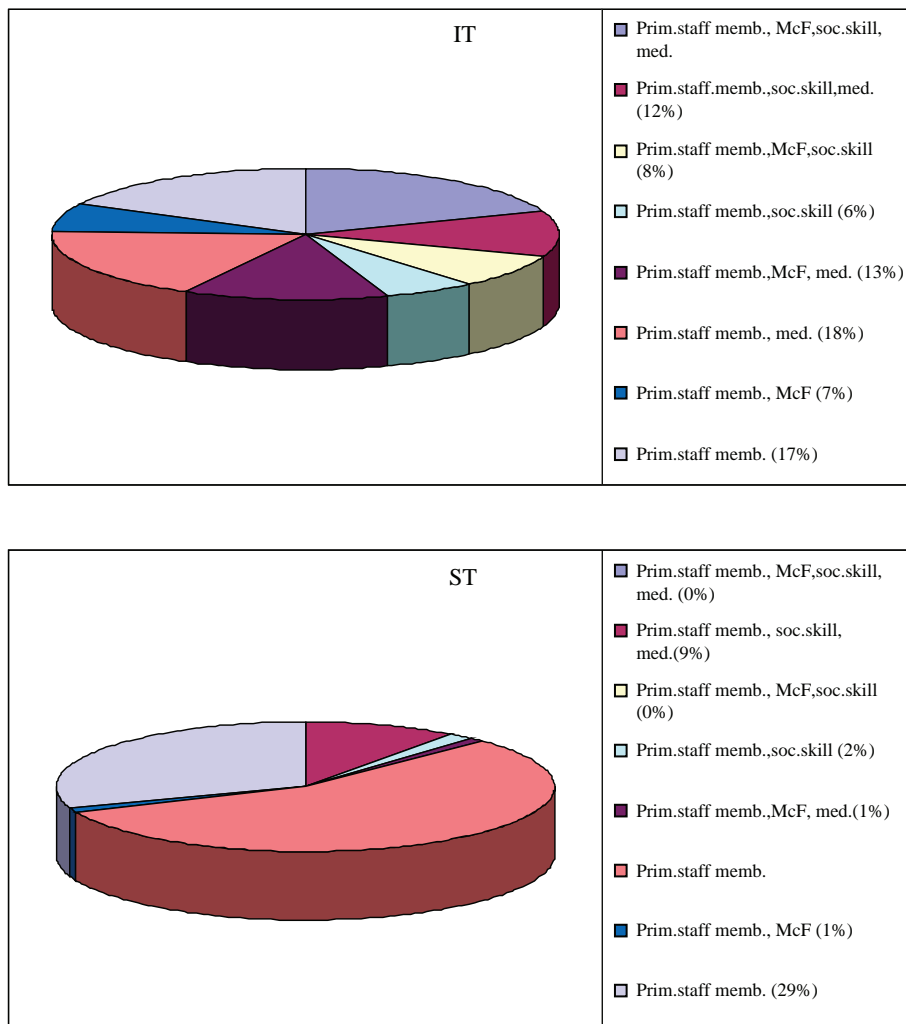


Fig. 1. Distribution of treatment elements provided in IT and ST (0.8% insufficient registration in IT and 5.6 % in ST).

3.5.2. The standard treatment (ST)

The standard treatment consisted of the standard mental health service routines in Copenhagen and Aarhus. Participation in the trial had no influence on the treatment offered to these patients. The average caseload was 1:25. Contacts usually took place at the community mental health centre. Patients receiving ST and patients receiving IT were admitted to the same psychiatric departments, but unlike the IT patients, the ST patients did not have the special weekly supporting meetings with the primary staff member from the IT team. The primary staff members in ST were case managers who had limited time and resources for arranging home visits or groups. Psychosocial treatment elements like supporting counselling, psycho-education, and contact with family were provided infrequently and in a less intensive, non-systematic way and only for a minority of cases (for details, please see Fig. 1 and Table 3). There was no offer of multifamily groups a.m. McFarlane or manual based social skills training, the social skills training referred to in Table 3 in ST being groups with activities of daily living.

3.6. Statistics

The data from SANS and SAPS dimensions was examined by using SPSS 11.0, Bloms' test for normal distribution and was found to be approximately normally distributed.

Comparison between groups in analyses of representativeness and dropout were chi-square tests and one-sample *t*-tests, level of significance was *p*-values below 0.05.

Analyses were conducted on an intention-to-treat basis with patients being analysed in the treatment group to which they were randomised. In order to account for the considerable and skewed attrition and to assess the influence of missing data, a repeated measurements model with unstructured variance matrix was applied. The condition for using this method is that the dropouts are "missing at random" (MAR), meaning that whether a patient is missing after 2 years may depend on the observed values initially and after 1 year. This approach assumes that the distribution of the missing data could be estimated on the basis of the information available from previous interviews. Values at entry, 1 and 2 years

are included, with unstructured variance matrix and without allowance for treatment difference at entry. Before the analyses were executed the covariates "treatment", "abuse at entry" and "centre" were chosen to be obligate covariates in all repeated measurements analyses allowing for a differential effect at each time point. These covariates were all chosen beforehand because they are associated with dropout.

4. Results

4.1. Representativeness

Analyses of representativeness revealed that the number of patients included in the project corresponded to 90% in Aarhus and 63% in Copenhagen of the patients registered in the psychiatric case register as having had their first contact with psychiatric services in the same period and diagnosed within the same diagnostic spectrum. Comparison between the patients included in the project and the official statistics revealed no differences in sex distribution, but at both centres the patient group included in the project were significantly younger and significantly more were diagnosed with schizophrenia (66% in the project versus 42% in the register). Still, the group of patients included in the project represents the core group of the diagnostic spectrum.

4.2. Follow-up rates

The follow-up rate was on average 67% after 2 years, but not equally distributed between the two types of treatment, since a significantly greater part of the patients offered standard treatment failed to attend the follow-up interviews. The follow-up rate for the integrated treatment was 75% and 60% for the standard treatment. The follow-up rate was higher in Aarhus than in Copenhagen (75% vs. 60%, $p < 0.05$), and a slightly larger proportion of the dropouts had a second diagnosis of substance abuse (33% vs. 24%; $p < 0.05$), but there were no correlations between main diagnoses and dropout. There were no differences between the dropouts and the participants concerning social functioning (measured by GAF scores (American Psychiatric Association, 1994)) or psychopathology at entry.

4.3. Clinical outcome measures and service use

IT patients experienced a significantly larger improvement in both the negative and the psychotic dimension (Table 1). The analyses of all global scores reveal that the IT effect on negative symptoms is not concentrated on a single aspect, but that IT intervenes widely in the negative symptom range. The effect, on the other hand, on the reduction in the psychotic dimension is mainly due to a reduction of the global scores of hallucinations.

Table 2 shows that a majority of all subgroups had enjoyed a positive effect from the IT in the negative and the psychotic dimensions, but also that none of the subgroups had a significantly better effect of IT.

Fig. 1 illustrates the difference in distribution between the treatment elements provided in the two treatment groups. While the most common combination of treatment elements in ST is contact with primary staff member and medication (53%), the combination of all elements is the most common in IT (19%). Approximately 30% of the patients in both groups did not receive any antipsychotic medication at the 2-year follow-up (Petersen et al., 2005).

Table 3 shows treatment outcome measures and treatment characteristics. There was a trend indicating that the IT group were less hospitalised. While the IT group received significantly lower doses of SGAs measured as haloperidol equivalences, no difference was found between the treatment groups concerning

doses of FGAs. There were no significant differences in medical compliance for the last 3 months between patients receiving IT and ST (data not shown). The patients in IT had on average 77 outpatient contacts during the 2 years of intervention, compared to on average 27 contacts for the ST patients (not outcome measure).

Further analyses with the repeated measurements method were made in order to investigate if a single treatment element could explain the IT effect. Social skills training, multifamily groups, primary staff member, and type of medication were included as covariates in the analyses. However, the parameter estimate for the effect of IT only changes marginally and remained significant, thus indicating that on its own none of the IT elements could account for the effect of IT.

5. Discussion

The IT reduced both the negative and the psychotic symptoms more efficiently than the ST for these young patients with first episode psychosis, but no single treatment element in the IT could explain these results. The most remarkable result is the impact of the IT on the negative symptom score. Negative symptoms are known to be more resistant to treatment than positive symptoms (Arango et al., 2004; Arndt et al., 1995), and the complexity of their origin contrib-

Table 1

Estimates of the effect of integrated treatment on negative, psychotic and disorganised dimensions and SANS and SAPS global scores at 2-year follow-up

	Mean scores (N=539)		Difference in parameter estimates	Confidence intervals (95%)
	IT	ST		
Negative dimension	1.42	1.84	-0.45*	(-0.67 to -0.23)
global scores of affective flattening	1.53	2.01	-0.40*	(-0.66 to -0.14)
global scores alogia	0.92	1.30	-0.44*	(-0.67 to -0.20)
global scores of avolition/apathy	1.42	1.79	-0.39*	(-0.68 to -0.10)
global scores of anhedonia/asociality	1.79	2.25	-0.51*	(-0.78 to -0.23)
global scores of attention	0.70	0.93	-0.21*	(-0.41 to -0.02)
Psychotic dimension	1.07	1.29	-0.32*	(-0.58 to -0.06)
global scores of hallucinations	0.88	1.12	-0.37*	(-0.67 to -0.08)
global scores of delusions	1.25	1.47	-0.26	(-0.56 to 0.04)
Disorganised dimension	0.37	0.50	-0.12	(-0.25 to 0.01)
global scores of formal thought disorder	0.45	0.58	-0.12	(-0.31 to 0.07)
global scores of bizarre behaviour	0.38	0.55	-0.18	(-0.37 to 0.05)
scores of inappropriate affect	0.29	0.36	-0.06	(-0.22 to 0.10)

* $p < 0.05$.

Table 2

Mean scores and parameter estimates of the effect of integrated treatment (IT) on negative, psychotic and disorganised dimension at 2-year follow-up for subgroups of the OPUS sample

	Negative dimension				Psychotic dimension				Disorganised dimension			
	Mean scores		Parameter estimate of the IT effect	<i>P</i> -value for significance of the difference between subgroups	Mean scores		Parameter estimate of the IT effect	<i>P</i> -value for significance of the difference between subgroups	Mean scores		Parameter estimate of the IT effect	<i>P</i> -value for significance of the difference between subgroups
	IT	ST			IT	ST			IT	ST		
Schizophrenia only (<i>N</i> =362)	1.50	2.04	−0.49*	0.60	1.25	1.50	−0.39*	0.43	0.36	0.61	−0.23*	0.03**
All other diagnosis (<i>N</i> =185)	1.23	1.47	−0.37		0.68	0.92	−0.17		0.40	0.31	0.07	
Second diagnosis of abuse (<i>N</i> =146)	1.56	2.43	−0.77*	0.10	1.32	1.39	−0.25	0.77	0.27	0.55	−0.25	0.27
No second diagnosis of abuse (<i>N</i> =401)	1.37	1.67	−0.35*		0.98	1.26	−0.34*		0.41	0.48	−0.08	
Males (<i>N</i> =323)	1.64	2.05	−0.45*	0.94	1.12	1.27	−0.23	0.41	0.42	0.61	−0.20*	0.15
Females (<i>N</i> =224)	1.13	1.49	−0.44*		1.01	1.33	−0.45*		0.32	0.32	−0.01	
Age 18–25 (<i>N</i> =286)	1.27	1.74	−0.56*	0.32	1.00	1.31	−0.48*	0.22	0.37	0.47	−0.13	0.96
Age 26–45 (<i>N</i> =261)	1.56	1.94	−0.33*		1.14	1.28	−0.15		0.38	0.53	−0.12	

* $p < 0.05$, significant difference between ST and IT effect.

** $p < 0.05$, significant difference between the IT effect on the two subgroups.

Table 3

Differences in service use and medication and characteristics between standard treatment (ST) and integrated treatment (IT) at 2-year follow-up

	IT	ST	CI of the difference	P-value
Days of admission ^a	88.8	111.7	(−48.8 to −2.92)	0.08
Mean doses of second generation antipsychotics (SGAs, haloperidol equivalences) ^b	4.02	4.93	(−1.61 to −0.20)	0.01
Mean doses of first generation antipsychotics (FGAs, haloperidol equivalences) ^c	3.26	2.96	(−0.99 to 1.57)	0.66
Number of contacts with primary staff member (mean 0–2 years) ^a	77	27	(42.8 to 56.4)	<0.001
Attending social skills training ^a	43%	11%	–	<0.001
Relatives involved in treatment ^a	61%	20%	–	<0.001

^a N=485.^b N=219 (all patients receiving SGAs).^c N=89 (all patients receiving FGAs).

utes to that. Therefore, this is a very important finding, although our study has some limitations.

5.1. Limitations

5.1.1. SANS ratings

The interviewers were not blinded to the kind of treatment the patients had received when they were assessed after 2 years and therefore the ratings have not been “objective”. Still, it is most likely that high degrees of person continuity in the research interviews have increased the number of patients followed up. This has disadvantages too, though. Repeated interviews may influence the emotional relationship between the patient and the interviewer, thereby making the ratings more optimistic than those provided by an unfamiliar interviewer (Barnes and McPhillips, 1995), but in this case the possible influence would be present in both IT and ST. The inter-rater reliability in the negative dimension was only measured as moderate (ICC 0.54 (Altman, 1993)), which indicates that it is difficult to reach the same understanding of the concept negative symptoms and that the definition of the concept is vague. Although the manual belonging to SANS is quite detailed, it is not based on frequencies of the symptoms as the SAPS manual is. It is based on terms like “mild”, “moderate” and “severe”, which makes it less exact.

5.1.2. Dropouts

40% of the patients from the ST dropped out compared to 25% from the IT. The dropout rates are not surprising and are similar to what others have

reported (Muijen et al., 1992). Since a part of the IT was having an assertive attitude towards the patients, the skewness of data was not unexpected.

5.2. Statistical considerations

Dropout analyses showed that a significantly higher number of patients with substance harm or dependence at entry dropped out (Petersen et al., 2005). If we assumed that the patients who failed to attend the 2-year follow-up interviews matched the participants, then this would bias against IT, since a larger proportion of the ST patients dropped out. If, however, which is more likely, the patients who did not manage to participate were those with the worse outcomes and poorer prognoses than the participants, this, too, would bias against IT. To anticipate that the dropouts had all been cured would be unrealistic. The alternative method “Last Observation Carried Forward” was to our opinion also far too unrealistic and biased since fortunately most patients will experience some improvement after 2 years compared to entry. Our analyses are therefore based on the mixed model analysis including the repeated measurements method. In most cases this results in a slightly higher treatment effect than when only the observed data is included, because the intensive treatment is better able to retain the most severe patients in treatment.

5.3. The intervention

As mentioned no single element in the IT could be shown to account for the difference in symptom

reduction between IT and ST. The IT effect probably consists of several contributions provided by the specialised teams. All staff were enthusiastic, well-educated and aware that they were part of a trial. Their qualifications enabled them to understand the special problems and challenges faced by this group of patients and to propose creative or sometimes unconventional solutions.

5.3.1. The negative dimension

IT consisted of several elements and the pragmatic trial design is not optimal when trying to point out a single factor as the “negative-symptom-reducing ingredient”. Lenroot et al. (2003) stressed the importance of an *integrated approach* in a review of the interactions between pharmacological and psychosocial interventions—it is the holistic and integrated effort that gives the results. Klingberg et al. (1999) carried out a randomised trial with different psychosocial elements in order to look at their interactions. One of the conclusions was that the patients with the most unfavourable prognoses benefited less from the psycho-education in coping skills.

Dyck et al. (2000) found that the multifamily groups reduced negative symptoms by reducing expectations from the family members through psycho-education and by displaying social role models and problem solving attitudes at the meetings. For the 47% of the IT patients who participated in the multifamily groups this mechanism may have contributed to the IT effect. The families met other families in the same situation, and this could possibly reduce feelings of being the only ones to experience these problems or feelings of being “odd” or different. The multifamily groups provide a forum for reflection, identification, inspiration and community.

Low caseload in the IT made it possible for the primary staff members to see the patients more often than in the ST. The higher frequency of contacts has most probably enhanced the relationship and thereby transferring hope, initiative and support. It improves the primary staff members’ chances to judge whether a negative symptom is primary or secondary, and then adjust the treatment plan.

More IT patients attended a social skills training programme than ST patients—as expected from the design of the study. Young first episode patients met in groups and discussed their problems with

the therapists and the other group members. They were ensured the contact with community of other young people and practised social behaviour like “how to start a friendly conversation” and “how to go to the movies”.

On average, the IT group received smaller doses of atypical SGAs (Table 3), which may lead to less sedation and apathy, contributing to the ameliorating effect on the negative symptoms of the IT. The patients received equal doses of FGAs in IT and ST. Thus we cannot expect any differences in the level of extrapyramidal side effects. An equal proportion of patients in both groups received FGAs and SGAs, respectively (Petersen et al., 2005).

Previous results from this study showed that number of days of admission was significant lower in the IT group than in the ST group after 1 year (61.4 vs. 81.9, $p=0.02$, (Petersen et al., 2005) and this trend is found at the 2-year follow-up as well. This result is only near significant due to lacking power since only few patients were admitted from 1 to 2 years. Still, it is likely that the IT patients were less institutionalised, and therefore experienced fewer secondary negative symptoms. Lenior et al. (2001) found in a study comparing standard treatment with standard treatment plus family intervention that the patients who had received the additional family intervention spent fewer months in institutions. The authors suggest that the parents who received the family intervention being better equipped to support their children could explain this. Also, Dyck et al. (2002) concluded that family psycho-education may reduce psychiatric hospitalisation without increasing use of community mental health services.

Most likely the effect of the IT is of a psychological nature, more than pharmacological. Although the generally accepted idea is that negative symptoms are very stable over time and are mainly biologically founded, they can be ameliorated by integrated psychosocial intervention combined with medication. Strauss et al. (1989) have suggested that negative symptoms can be viewed from a psychological and social angle, stressing that negative symptoms can be understood as a mechanism of defence or protection against conflicts with the surroundings.

5.3.2. The psychotic dimension

We found that the psychotic symptoms were significantly better reduced in the IT group, mainly by a reduction in the global score of hallucinations. This might partly be explained by better medical adjustment through more frequent contact between patient and primary staff member in the IT group compared to ST. The primary staff members were in a better position to pay close attention to early warning signals or signs of psychotic relapse. Also the psychosocial interventions may play a role here by representing a forum for reality correction and stimulation.

5.4. Subgroup analysis

A majority of the results from the subgroup analysis show significant values for the parameter estimates measuring the difference in effect between IT and ST. However, the differences between the subgroups (schizophrenia/other diagnosis, abusers/non-abusers, males/females, younger/older) all turned out to be insignificant, except for the disorganised dimension, which was significant for the patients with schizophrenia. Not surprising, since they are also the group of patients who display these symptoms.

Thus, the intention of the IT teams to provide flexible and individually tailored treatment plans has been fulfilled and gives results.

6. Conclusion

Integrated treatment (IT) reduces negative symptoms in first episode psychosis in all global scores of SANS. It is assumable that this result is caused by the integrated and differentiated treatment plan and through the lower doses of SGAs and the reduced need for admission that was seen in the IT group. Subgroup analysis revealed no significant effect as between schizophrenia and other first episode psychosis, abusers and non-abusers, men and women or younger and older patients, thus indicating that the individually adjusted treatment planning seems to contain all patient categories.

IT also reduces the psychotic symptoms, mainly via a reduction of hallucinations. These results

indicate that the intensive psychosocial approach including frequent primary staff member contacts, psycho-education, social skills training and involvement of the relatives in the treatment are beneficial to this group of first episode patients.

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