

# The impact of the group factor on outcome in group therapy: final results of RCT including 127 schizophrenia outpatients

Daniel R. Mueller, Conny Steichen, Kristin Schaller, Volker Roder  
University Hospital of Psychiatry & Psychotherapy Bern, Switzerland



daniel.mueller@upd.unibe.ch



## I. Introduction

Today, some evidence-based group therapy approaches focusing different treatment goals are available for the treatment of schizophrenia patients, e.g. psychoeducation, social skills training, CBTp or cognitive remediation. However, only few if any data are available regarding the impact of the group factor as an unspecific mechanism of change regarding outcome in schizophrenia patients. It seems to be a research gap to understand how group therapy works. (Burlingame 2013. Does the participation in goal-oriented groups per se affect therapy outcome? Patients' self-reports in validated instruments are crucial for a better understanding of group therapeutic processes (Mander et al. 2013). But only few questionnaires are available to assess group cohesiveness (eg. GQ-D; Bormann et al. 2011), the group clima (eg. GCQ-S; Tschuschke et al. 1991) or the comprehensive analytic approach (99 items) to assess therapy process by Yalom (1995). Consequently, brief questionnaire with few items including short, simple questions that are easy to understand for schizophrenia patients are demanded. Such a questionnaire should be based on the terminology addressing behavior therapy and cognitive therapy, and for the use in RCT designs in research, it should also be appropriate for patients not participating in group therapy.

## II. Methods

### Design

For this purpose, a cognitive remediation group approach (Integrated Neurocognitive Therapy, INT, groups (Roder & Mueller 2013, 2015; Mueller et al. 2015, 2017, 2020) has been compared with control patients not participating in therapy groups (Treatment as Usual, TAU). INT was developed in our lab and follows a restitution and compensation learning approach. INT consists of 5 modules addressing all NIMH-MATRICES domains of neuro- and social cognition. At the end of the last module, emotion regulation and stress reduction tasks are included (Fig. 1). INT was conducted twice a week over 15 weeks therapy duration.

### Assessments

The group factor was assessed by the newly developed questionnaire "Experience and Behavior In (Therapy) groups EBIT", a brief questionnaire including 13 items with a 5-point Likert scale (e.g., "In a group described above I get nervous, or ... I get fear, or ... I don't say anything personal about myself, or ... I have eye contact when someone tells me something"). Additionally, the following assessments instruments were used: Symptoms: Positive and Negative Syndrome Scale PANSS (Kay et al. 1987); functioning: Global Assessment of Functioning Scale GAF (DSM-IV); Attention-Test D2 (Brickenkamp et al. 2010); Cognition: speed: Trail Making Test TMT, Part A (Reitan 1958); verbal memory: Auditory Verbal Learning Test AVLTL (Lezak 2004); working memory: Letter-Number Span LNS (Gold et al., 1997); problem solving: Wisconsin Card Sorting Test WCST (Loong 1987); social schema: Schema Component Sequencing Task-Revised SCST-R (Vauth et al. 2004); emotion perception: Emotion Recognition Questionnaire EMOREC (Bähler 2012). The complete test battery was assessed before and after therapy as well as at 1-year follow up in both comparison groups.

### Sample

A total of 127 schizophrenia outpatients (ICD 10) has been randomly assigned to INT (N=65) or TAU (n=62). Patient characteristics are summarized in Table 1.

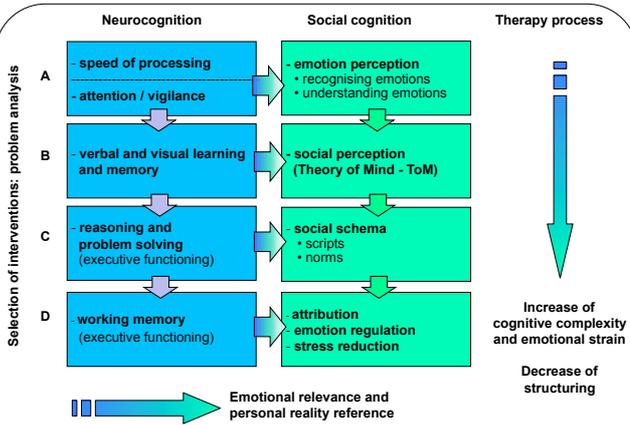


Fig. 1 Integrated Neurocognitive Therapy (INT).

Tab. 1 Sample characteristics (N=127).

	INT (n=65)	TAU (n=62)	$t/\chi^2$	$p$
	M (SD)	M (SD)		
Age: Baseline (years)	35.4 (8.5)	33.0 (8.3)	1.6	.11
Duration of illness (years)	10.7 (7.3)	9.8 (6.7)	0.7	.49
Number of hospitalizationen	3.6 (3.2)	4.8 (5.2)	1.5	.12
IQ (WAIS-R)	105.5 (9.9)	102.4 (12.8)	0.5	.61
Education (years)	11.1 (4.1)	11.0 (4.2)	0.2	.87
Symptoms (PANSS sum score)	65.5 (17.1)	67.2 (16.8)	0.6	.58
GAF	50.1 (8.3)	49.0 (9.1)	0.7	.46
Medication (chlorpromazine equivalents)	440.8 (462.0)	486.6 (392.8)	0.5	.61
Gender (% male)	63.1	72.6	1.3	.25

## III. Results

A factor analysis including the 13 EBIT-items obtained a 2-factor solution (reliability value for both factors >.80): Factor 1: *Affect and Communication Activities*; Factor 2: *Eye Contact during Communication*. First we statistically analyzed by GLM the course of both EBIT factors as well as for the mean score of all 13 EBIT-items (total score) over the 3 assessment points (pre- and post therapy and follow-up between INT and TAU groups). Results show significant improvement in the total score favoring patients in INT group during therapy (Fig.2). However, this effect got lost at follow-up (Fig. 3). The same course of effects could be observed regarding Factor 1 *Affect and Communication Activities* (Fig. 4) and Factor 2 *Eye Contact during Communication* (Fig. 5). In a second step, we correlated the EBIT total score with all patient characteristics and outcome assessments at post-therapy: EBIT outcome at post therapy seemed not to be associated with any variable of the patient characteristics and positive symptoms! But EBIT was highly significant correlated with negative symptoms (PANSS,  $r=.43$ ) and functioning (GAF,  $r=.34$ ) after therapy. Furthermore, EBIT was significantly correlated with social schema (SCST,  $r=.21$ ), attention (D2,  $r=.23$ ), speed (TMT,  $r=.2$ ), verbal memory (AVLT,  $r=.2$ ), but not with executive functioning (LNS, WCST) and emotion perception (EMOREC).

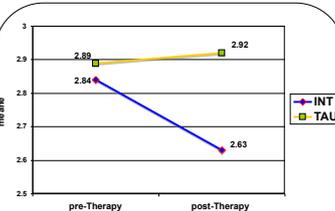


Fig. 2 Mean score of all 13 items during therapy phase (GLM:  $F=3.9$ ;  $p=.05$ )

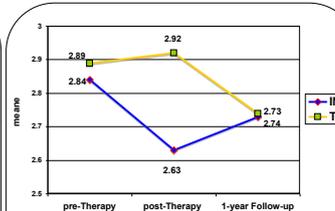


Fig. 3 mean of all 13 items during therapy & follow-up (GLM:  $F=4.2$ ;  $p=.03$ )

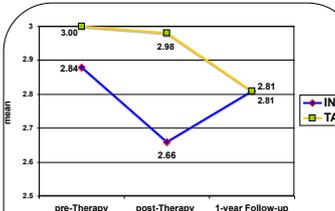


Fig. 4 Factor *Affect and Communication Activities* (GLM:  $F=3.2$ ;  $p=.04$ )

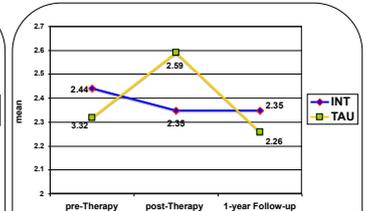


Fig. 5 Factor *Eye Contact During Communication* (GLM:  $F=3.3$ ;  $p=.04$ )

## IV. Conclusion

To some extent, EBIT may be an appropriate measure of the group factor in treatment groups with schizophrenia patients. The sum score as well as a 2-factor solution of the 13 EBIT-items may be used. The group factor works well during therapy but gets lost at follow-up. Furthermore, the group factor is strongly related to negative symptoms and social functioning both representing generalization effects of proximal outcome in cognitive remediation, and to a lesser degree also to some social cognitive and neurocognitive functions. For sure, the magic of group therapy regarding efficacy and generalization has not been detected in full, yet!