Training of Memory Strategies in Schizophrenia

G. Sartory, D. Bic, C. Korn, D. Seitz & B. Müller*

Dept. Psychology, University of Wuppertal

Psychiatric Clinic, University of Duisburg-Essen*

sartory @uni-wuppertal.de

The effect of training a visualization strategy was compared with that of subvocal rehearsal. Previous studies have shown visualization to be beneficial to memory performance in healthy subjects. Visual imagery activates visual association areas, which are not compromised in schizophrenia. It was therefore hypothesized that patients with schizophrenia may show improvement in verbal memory performance after visualization training.

Participants:
A total of 33 patients (23 m, 10 f) with schizophrenia (DSM-IV criteria) were recruited after having been stabilised on medication. Their mean age was 34.8 years (SD = 1.8; 20 – 57) and mean years of education were 10.9 (SD = 1.8; 8 – 16). Exclusion criteria were a present or past diagnosis of substance-related or neurological disorder and an age < 58 years. The majority, i.e., 25 were of the paranoid type, and the remaining patients of the disorganized (2), undifferentiated (5) and residual (1) type, respectively. One patient took no medication and 91 % received atypical and 6 % typical antipsychotic medication.

Design:
Patients were randomised into two groups one of which received visualization training (**VISUAL**) and the other was instructed to rehearse the material to be learned (**REHEAR**)

Groups	Day 1	Day 2	Day 3
VISUAL	PANSS Neuropsychol. assess. incl. verb. mem. Test (VLMT)	6 lists visualization training – test list	TEST LIST Verb. mem. test (VLMT)
REHEAR		6 lists rehearsal training- test list	

The Training lists were presented three times. They consisted of an increasing number (10 to 15) of nouns which were presented for a decreasing duration (5 to 2 s) and had to be repeated immediately.

VISUAL: patients were instructed to visualize the items and concentrate on their colour, size and context

REHEAR: patients were instructed to repeat each word subvocally until the next word was presented

The TEST LIST consisted of 18 words which had to be repeated immediately. Patients were asked to recall the list again 24 hours later.

Results
Assessment Day 1:
There were no significant differences between groups with regard to their performance in the neuropsychological tests.

| Neuropsychological Tests	REHEAR (N = 16)		VISUAL (N = 17)	
	Mean	(SD)	Mean	(SD)
Visual memory (WMS-R)	34.75	(7.26)	35.06	(5.78)
Verbal memory (WMS-R)	9.94	(4.09)	9.76	(5.62)
Digit symbol (ZST A)	37.63	(12.03)	38.76	(12.98)
Verbal fluency (FAS)	27.75	(10.94)	29.35	(6.79)
Verbal memory (VLMT)	84.00	(19.40)	81.18	(21.86)

Training Day 2
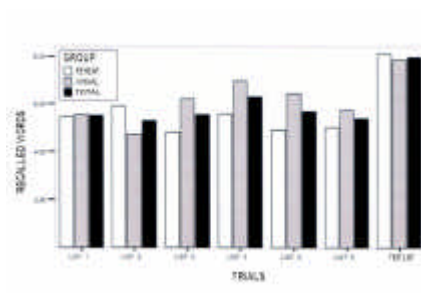
Visualization conveyed a marginal benefit on recall during training, not, however, with regard to recall of the test list.

Test Day 3
Patients recalled either one or no word of the test list from the previous day.
There was a significant Group x Measurement occasion effect with regard to the verbal learning test (F(1, 30) = 6.35, p<.02; e² = .18). REHEAR group showed decreased recall at the second measurement occasion compared to the VISUAL group, particularly with regard to recall after the interference list (No 6).
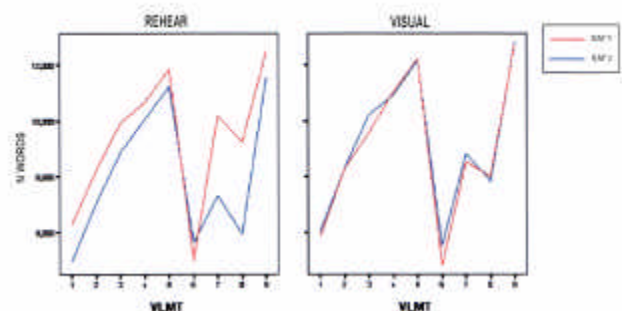
Compared to visualization, the rehearsal strategy appears to be more vulnerable to interference.