Cognitive remediation of autobiographical memory in schizophrenia and its relation with depressive mood.

SYLVIE BLAIRY

UNIVERSITY OF LIEGE - BELGIUM

University of Oxford
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Why it is important to improve AM is schizophrenia?

Schizophrenia is characterized by several cognitive dysfonctions (attention, executive functions, memory impairments).

This syndrome is accompanied by deficits in the <u>specificity</u> of autobiographical memory.

AM impairment is a better predictor of patient social functioning than other cognitive deficits or clinical symptoms.

AM is closely related to the self-identity

How to connect AM and Self-identity?

The recollection of a personal specific memory is accompanied by a subjective experience called **autonoetic awareness**.

Autonoetic awareness allows individuals to relive past experiences with the feeling of individuality.

Impairment in autonoetic awareness in schizophenia results from a failure of the strategic processes which bind the separated characteristics of the event (what happened, where, when, my feelings and thoughts during the event).

The therapeutic interventions to enhance the abilities to generate specific personal events in schizophrenia.

Blairy, S., Neumann, A., Nutthals, F., Pierret, L., Collet, D., Philipot,P. (2008). Improvements in autobiogrphical memory in schizophrenia patients after a cognitive intervention. Psychopathology, 41:388-396.

Ricarte, J., Hernandez-Viadel, J., Latorre, J. Ros, L. (2012). Effects of event-specific memory training on autobiographical memory retrieval and depressive symptoms in schizophrenic patients. J. Behav. Ther. & Exp. Psychiatry, 43, S12-S20.

Lalova, M., Baylé, F., Grillon, M-L., Houet, L., Moreau, E., Rouam, F., Cacot, P., Pioloni,P. (2013). Mechanisms of insight in schizophrenia and impact of cognitive remediation. Therapy. Compr. Psychiatry, 54, 369-380.

Potheegadoo, J., Cordier, A., Berna, F., Danio, J.M. (2014). Effectiveness of a specific cueing method for improving autobiographical memory recall in patients with schizophrenia. Schiz Research, 152, 229-234.

Ricarte,J., Hernandez-Viadel, Latorre, J., Ros, L., Serrano, J. (2014). Effects of specific positive events training on autobiographical memories in people with schizophrenia. Cogn Ther Res, 38: 407-415.

Improvements in autobiographical memory in schizophrenia patients after a cognitive intervention.

The purposes of the intervention

To increase the ability of schizophrenia patients to generate specific **past** events.

To increase the ability of schizophrenia patients to generate specific **future** events.

To improve the affective state (depression).

The efficacy has been tested at 3 months follow-up

Blairy, S., Neumann, A., Nutthals, F., Pierret, L., Collet, D., Philippot,P. (2008).

Improvements in autobiographical memory in schizophrenia patients after a cognitive intervention.

Dependant measures.

Task for past events

French version Autobiographical Memory Test (AMT) – 10 cues (5 positive & 5 negative)

« can you recall a personal event that the word …. evokes »

Task for future events

This is a replication of AMT- participants were instructed to imagine a future events that could occur to them in the future. « can you report a future personal event that the word…evokes »

Intensity of affective symptoms

Beck Depression Inventory

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Autobiographical memory intervention

Intervention: group setting - 10 weekly group sessions- 90 min

Psychoeducation about the aims of the intervention

Personal diary - Homework : Each participant has received a diary and was asked to report, **every day** a detailed personal event (what happened, when, where), the associated emotions, and an evaluation of the importance for oneself.

During sessions: Revisions on the content of the diary. Different exercices (games) to stimule their thoughts about their personal identity have been proposed.

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The control intervention

Interventions: 10 weekly group sessions- 90 min

Psycho-education about schizophrenia and conversation trainings.

Same therapist for both groups (memory & control)

Blairy, S., Neumann, A., Nutthals, F., Pierret, L., Collet, D., Philippot,P. (2008).

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Results - AM specificity

Intervention	Past events	Future events	Total
AM (n = 15)			
Before treatment	4.93 (2.28)	4.53 (1.99)	4.73 (1.82)
After treatment	6.94 (2.60)	7.06 (1.94)	**7.00 (2.04)**
Control (n = 12)			
Before treatment	3.92 (2.02)	3.66 (1.92)	3.79 (1.61)
After treatment	4.41 (1.97)	5.08 (2.37)	**4.75 (1.68)**

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Improvements in autobiographical memory in schizophrenia patients after a cognitive intervention.

Results - Intensity of affective symptoms

Intervention	AM intervention	Control
Before treatment	14.80 (10.62)	18.00 (4.94)
After treatment	14.20 (9.58)	19.20 (7.05)
Across treatment	14.50 (8.57)	18.60 (5.29)

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Improvements in autobiographical memory in schizophrenia patients after a cognitive intervention.

Results from the follow-up – 3 months later – 10 subjects

Intervention	Past events	Future events	Total
AM			
Before treatment	5.10 (1.91)	4.30 (2.31)	4.70 (1.82)
After treatment	6.90 (2.29)	7.30 (1.63)	7.10 (2.11)
3 months later	7.10 (1.66)	5.60 (2.45)	6.35 (1.97)

Blairy, S., Neumann, A., Nutthals, F., Pierret, L., Collet, D., Philippot, P. (2008).

Improvements in autobiographical memory in schizophrenia patients after a cognitive intervention.

Discussion – main finding

It is possible to improve the capacity of schizophrenia patient to generate past and future specific events by a cognitive intervention.

The cognitive intervention did not improve the affective symptoms.

the specific underlying cognitive mechanisms responsable for the changes are not identified.

No measure of autonoetic awareness

Blairy, S., Neumann, A., Nutthals, F., Pierret, L., Collet, D., Philippot,P. (2008).

Effects of event-specific memory training on autobiographical memory retrieval and depressive symptoms in schizophrenic patients.

Self-defining memories: « memories that help you to define more clearly how you see yourself and that help to explain who you are to another person » (Singer, 2005).

Impairments in **extracting meaning from personal memories** could represent a core disturbance of autobiographical memory and has serious consequences in terms of personal identity and social adaptation.

Ricarte, J., Hernandez-Viadel, J., Latorre, J. Ros, L. (2012)

Effects of event-specific memory training on autiobiographical memory retrieval and depressive symptoms in schizophrenic patients.

Personal diary - homework
Participants completed a detailed diary during the entire intervention (place, time, person, action, feeling). Revision of personal diary during all sessions.

Self-defining memories training

From session 6 to session 10: a specific retrieval task

Participants were trained to recover significant personal events or self-defining memories from childhood, adolescence, adulthood and the previous year.

1. Session 6: Childhood games
2. Session 7: My first communion day (8-9 years of age)
3. Session 8: A party from adolescence
4. Session 9: A trip from last year
5. Session 10: Christmas dinner from the previous year

Ricarte, J., Hernandez-Viadel, J., Latorre, J. Ros, L. (2012)

Effects of event-specific memory training on autobiographical memory retrieval and depressive symptoms in schizophrenic patients.

The control group - 10 weekly group sessions- 90 min

Participants took part in treatments targeting social skills and occupational therapy.

The same therapist for both groups.

Ricarte, J., Hernandez-Viadel, J., Latorre, J. Ros, L. (2012)

Effects of event-specific memory training on autiobiographical memory retrieval and depressive symptoms in schizophrenic patients.

The dependant measures

The intensity of depressive symptoms

Beck Depression Inventory

Memory specificity

Autobiographical Memory Test (AMT) – 10 cues (5 positive & 5 negative)

« can you recall a personal event that the word …. evokes »

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The dependant measures

Autonoetic awarness - Autobiographical Memory Enquiry

Four periods:

- From childhood to 9 years of age
- From 10 years to the onset age of illness (before diagnosis)
- From the onset age of illness to one year before the test
- The year prior to the present assessment

Four each period, participants were asked to report a specific event related to

1. Personal events
2. Other persons
3. Social events
4. Family events
5. Trips or journey

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How to measure the state of awareness ?

The remember- know-guess procedure

Specific characteristics emerged : the perceptions, thoughts ou feelings experienced at the same time of the event. Remember response. (3 pts)

Simply knows some characteristics of the event without conscious recollection. Know response. (2pts)

The characteristics of the event were guessed and not consciously recalled or known. Guess response (1pt)

Ricarte, J., Hernandez-Viadel, J., Latorre, J. Ros, L. (2012)

Effects of event-specific memory training on autiobiographical memory retrieval and depressive symptoms in schizophrenic patients.

Changes in memory specificity and BDI scores after the treatments

	CONTROL GROUP		MEMORY GROUP	
	Before	After	Before	After
Number of specific events (AMT)	4.61 (2.7)	**5.34 (3.1)**	4.21 (2.8)	**7.75 (2.8)**
BDI scores	12.42 (10.2)	11.92 (11.0)	**18.25 (12.3)**	**10.16 (8.4)**

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Effects of event-specific memory training on autobiographical memory retrieval and depressive symptoms in schizophrenic patients.

Changes in autonoetic awareness

	CONTROL GROUP		MEMORY GROUP	
	Before	After	Before	After
Total score	46.19 (9.7)	45.88 (9.2)	41.54 (7.0)	**47.08 (7.6)**
Pre-diagnosis period	23.80 (4.9)	**24.07 (4.6)**	22.25 (4.2)	**24.75 (3.5)**
Post-diagnosis period	22.48 (6.5)	21.81 (5.6)	19.29 (4.1)	**23.33 (4.7)**

Ricarte, J., Hernandez-Viadel, J., Latorre, J. Ros, L. (2012)

Effects of event-specific memory training on autiobiographical memory retrieval and depressive symptoms in schizophrenic patients.

Main findings

1. Changes in specificity of autobiographical memory were produced independantly of changes in depressive symptomatology.

2. The training program produced a improvement in the consciousness of post-diagnosis events.

3. Emotional recovery after the AM intervention.

Ricarte, J., Hernandez-Viadel, J., Latorre, J. Ros, L. (2012)

Effects of positive events training on autobiographical memories in people with schizophrenia.

Summary of the intervention

Life review therapy based on positive events (LRTspev)

<u>Individual</u> weekly sessions during 4 weeks
Each week, 5 specific **<u>positive events</u>** from different life period were explored

Week 1: childhood (five positive events)
Week 2: adolescence (five positive events)
Week 3: adult life (five positive events)
Week 4: the last year (five positive events)

The therapist insists to obtain an exhaustive description of unique events with sensory and perceptual details

Ricarte,J., Hernandez-Viadel, Latorre, J., Ros, L., Serrano, J. (2014)

Effects of positive events training on autobiographical memories in people with schizophrenia.

Summary of the main findings

	LRTspev (n = 16)			TAU (n = 16)	
	Pre	**Post**		**Pre**	**Post**
Number of specific memories	3.93 (3.15)	**6.37 (3.24)**		4.93 (3.23)	4.43 (3.03)
Number of recovered details	9.37 (6.17)	**15.12 (6.72)**		8.12 (4.86)	9.75 (7.18)
Mood (BDI scores)	13.75 (10.49)	<u>11.43 (10.58)</u>		12.12 (7.09)	<u>10.87 (7.05)</u>

BDI scores decreased for both groups after treatment

Ricarte,J., Hernandez-Viadel, Latorre, J., Ros, L., Serrano, J. (2014)

Conclusions

The specific questions asked to the patients during the interventions seem to facilite the retrieval of memory details – and probably provide to the patient a recollection strategy. The learning could be preserved at least 3 months after the intervention.

Schizophrenia patients may improve their ability to project onself specifically in the future.

Autobiographical training based on specificity doesn't seem efficient enough to reduce depressive symptoms in schizophrenia.

Future perspectives

Schizophrenia patients exibit higher prevalence of autobiographical memories of negative traumatic events than controls (Berna et al., 2011).

These negative experiences need to be integrated into the self to avoid their negative effects on mood (Ricarte et al., 2014).

The emotionnal recovery could be higher with combined interventions on AM and on depression.