Recovery in Schizophrenia: Focus on Neurocognitive Functioning

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Summary

Recovery encompasses symptom remission and functional elements such as cognition, social functioning and quality of life. Personal recovery is also important in illness management to help the person stay on track with treatment and focus on activities unrelated to taking medication that maintain mental health. In the present study we aimed to identify neurocognitive functioning in two clinically stable groups of patients with personal recovery and non-recovered patients. The results showed generalized cognitive deficits in both groups while the non-recovery group was more impaired in verbal and visual memory, acoustic and tactile gnosis and neurodynamics and executing functioning. Interestingly the recovery group demonstrated lack of programming of actions and sufficient error monitoring and self-correction whereas the non-recovery group was significantly more impaired in all executive domains. The obtained results could be beneficial in identifying a target for psychosocial treatments and specifically cognitive remediation for patients with schizophrenia to facilitate the process of recovery.

Key words: recovery - schizophrenia and schizophrenia spectrum disorders - neurocognitive functioning

Introduction

Since the time of Kraepelin, schizophrenia has been considered a chronic illness with an almost inevitably deteriorating course. Even though the heterogeneity of outcomes in schizophrenia has been acknowledged (Bleuler 1950), unfavourable outcomes confounded the prognosis with the diagnosis (McGorry 1992).

As a result recovery from schizophrenia has been considered rare or even impossible (Warner 1985). However, a number of epidemiological longitudinal outcome studies with large numbers of patients, have reported symptomatic and social recovery from schizophrenia after many years of illness (Ciompi et al. 1980, Harding et al. 1987, Harrison et al. 2001, Huber et al. 1980, Ogawa et al. 1998). An optimistic view of the course of illness emanating from the recovery movement emphasizes recovery as a process of developing a meaningful life beyond illness (Mental Health 1999).

Recently several models have been established which define recovery from either clinical or psychological perspectives. Thus, clinical recovery is repeatedly associated with symptomatic and functional remission (Slade et al. 2009). Another type of recovery, known as illness management (Gingerich et al. 2005) derives from general management of chronic illnesses such as hypertension, diabetes, and HIV disease. The third type of recovery, personal recovery (Slade et al. 2009), involves functioning at one’s best despite ongoing symptoms of illness. Anthony (1993) defines such a type of recovery as ‘the development of new meaning and purpose as one grows beyond the catastrophe of mental illness’.

Many studies have been focused on the predictors of recovery in schizophrenia reporting stable social life and normal social functioning (Albert et al. 2011), high premorbid social adaptation (Bobes et al. 2009), shorter duration of untreated psychosis (Faber et al. 2011) and several neurocognitive tests, especially tests measuring speed of processing (Faber et al. 2011). At the same time there might be other factors which facilitate recovery in schizophrenia. Although, cognitive symptoms are rarely eliminated when present at the onset of illness, they have been found to correlate and predict better social learning, social problem solving, and acquisition of social skills in schizophrenia (Green, 1996). Kapelowicz et al (2005) showed several domains of executive functioning to be associated with recovery, however they rather predicted clinical recovery then personal one.

The aim of our study was to evaluate neurocognitive functioning in remitted patients with chronic schizophrenia and schizophrenia spectrum disorders who experienced personal recovery and compare it to the neurocognitive functioning of non-recovered group.

Methods

All participants have been under continuous observation in Moscow Research Institute of Psychiatry for more than 5 years. We classified patients as being recovered (n=24) if they had a stable remission of both negative and psychotic symptoms during the last 2 years, had not been hospitalized during the last 2 years, had a GAF score of over 60, had a job or were studying and possessed the features of personal recovery, demonstrating specifically the development of new meaning and purpose in life, hopefulness, identification of personal goals and re-establishing identity. Non-recovered patients (n=24) matched by demographical
and clinical characteristics fulfilled the criteria of clinical recovery however they have not showed any personal recovery features (see table 1).

Groups were also matched by diagnosis and the diagnoses at inclusion according to ICD-IV for the samples: schizophrenia (n=18), schizophreniform disorder (n=2), schizoaffective disorder (n=5). Patients used atypical antipsychotics in more than 95% of cases (mainly risperidone). The average dosage was 2.5–3 mg haloperidol equivalents per day.

All patients underwent neuropsychological testing based on Luria’s systematic approach (Luria 1966). The Luria diagnostic test consist of numerous procedures designed to assess verbal and visual memory, motor functions, gnosia, and praxis, verbal and non-verbal thinking. Cognitive functions were evaluated according to 0-3 rating scale, where 0 is no deficit, 3- marked deficit. Moreover, the overall parameters of neurodynamics (optimal level of cortical tone is essential for the organized course of mental activity) and executing functioning differed in rating and were evaluated as follows: neurodynamics: 0-normal; 1- inability of the stable productive performance; 2- presence of non-severe exhaustion, delay in activity, impulsivity, inertness; 3- exhaustion, significant oscillations with the loss of the program, severe impulsivity, severe inertness; executive functioning: 0- normal, 1-slight decrease in the control of activity with the ability of correction, difficulties in programming of actions, 2- necessity of secondary correction, 3-difficulties in self-monitoring, impossibility of the correction. Scores of the recovered subjects were compared to scores of non-recovered using nonparametric statistics with the significance level of p≤0.05.

RESULTS

Patients in the recovered group showed better performance than in the non-recovered group on the following neurocognitive subtests: verbal memory (z=-3.287, p=0.001), visual memory (z=-2.185, p=0.028), acoustic gnosia (z=-3.024, p=0.002), tactile gnosia (z=-2.497, p=0.012), verbal thinking (z=-3.386, p=0.001) and non-verbal thinking (z=-2.611, p=0.012) and overall parameters of neurodynamics (z=-4.259, p=0.001) and executive functioning (z=-3.035, p=0.002) (see table 2).

When we analyzed the distribution of overall neurodynamics scores we found that a significantly higher proportion of personally recovered patients demonstrated less exhaustion and impulsivity, most
DISCUSSION

The study was designed to identify the peculiarities of neurocognitive functioning in patients with personal recovery from schizophrenia who possibly facilitate the recovery process. Taking into account the stable clinical state, the comparison between the two clinically stable groups of recovered and non-recovered patients with schizophrenia allowed us to pinpoint weaknesses and also strengths of cognition in the recovery group. Despite the fact that both groups were significantly impaired and the cognitive deficit was quite diffuse, the recovery group had more potential in memory processing and less impaired gnosis (tactile and acoustic perception) as well as in overall neurodynamics and executive functioning.

Luria’s systemic approach allowed us to qualitatively analyze executive functioning in 3 dimensions: formulation of the goal, programming of the action and control. Interestingly, recovery patients seem to have more prominent deficit in programming of actions than in control while the non-recovery group demonstrate deficits in all domains and do not benefit even from external correction. In other words, the following results suggest that executive dysfunction is not homogeneous and retaining control possibly helps in fulfilling new individual goals and enable better social adjustment. At the same time, the lack of the programming of actions might serve as a target for psychosocial interventions.

CONCLUSION

It is obvious that even when a person is in remission (clinical recovery) from any severe illness, he or she still needs to work on personal recovery, returning to work, studies and other previous activities, and perhaps even relearning some activities if the illness was prolonged (Barber et al. 2012). In this case cognition could be a factor which facilitates the recovery process.

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