Neurocognition and Social Cognition in Schizophrenia Patients
Key Issues in Mental Health

Vol. 177

Series Editors

A. Riecher-Rössler  Basel
M. Steiner  Hamilton
Neurocognition and Social Cognition in Schizophrenia Patients

Basic Concepts and Treatment

Volume Editors

Volker Roder  Bern
Alice Medalia  New York, N.Y.

16 figures, 1 in color, and 11 tables, 2010

Bibliographic Indices. This publication is listed in bibliographic services, including Current Contents* and Index Medicus.

Disclaimer. The statements, opinions and data contained in this publication are solely those of the individual authors and contributors and not of the publisher and the editor(s). The appearance of advertisements in the book is not a warranty, endorsement, or approval of the products or services advertised or of their effectiveness, quality or safety. The publisher and the editor(s) disclaim responsibility for any injury to persons or property resulting from any ideas, methods, instructions or products referred to in the content or advertisements.

Drug Dosage. The authors and the publisher have exerted every effort to ensure that drug selection and dosage set forth in this text are in accord with current recommendations and practice at the time of publication. However, in view of ongoing research, changes in government regulations, and the constant flow of information relating to drug therapy and drug reactions, the reader is urged to check the package insert for each drug for any change in indications and dosage and for added warnings and precautions. This is particularly important when the recommended agent is a new and/or infrequently employed drug.

All rights reserved. No part of this publication may be translated into other languages, reproduced or utilized in any form or by any means electronic or mechanical, including photocopying, recording, microcopying, or by any information storage and retrieval system, without permission in writing from the publisher.

## Contents

**Foreword**  
Brenner, H.D. (Valparaiso)  

**Preface**  
Medalia, A. (New York, N.Y.); Roder, V. (Bern)  

1. **Definition and Measurement of Neurocognition and Social Cognition**  
Kern, R.S.; Horan, W.P. (Los Angeles, Calif.)  

2. **The Relevance of Neurocognition and Social Cognition for Outcome and Recovery in Schizophrenia**  
Brekke, J.S.; Nakagami, E. (Los Angeles, Calif.)  

3. **Treatment Approaches with a Special Focus on Neurocognition: Overview and Empirical Results**  
Kurtz, M.M. (Middletown, Conn.); Sartory, G. (Wuppertal)  

3.1 **Compensatory Cognitive Training**  
Twamley, E.W.; Zurhellen, C.H.; Vella, L. (San Diego, Calif.)  

4. **Treatment Approaches with a Special Focus on Social Cognition: Overview and Empirical Results**  
Wölwer, W. (Düsseldorf); Combs, D.R. (Tyler, Tex.); Frommann, N. (Düsseldorf); Penn, D.L. (Chapel Hill, N.C.)  

4.1 **Training of Emotional Intelligence in Schizophrenia**  
Vauth, R. (Basel)  

5. **Combined Treatment Approaches: Overview and Empirical Results**  
Roder, V.; Hulka, L. (Bern); Medalia, A. (New York, N.Y.)  

5.1 **An Overview of the Neuropsychological and Educational Approach to Remediation**  
Medalia, A.; Mambrino, E. (New York, N.Y.)
5.2 Integrated Psychological Therapy and Integrated Neurocognitive Therapy
Müller, D.R.; Roder, V. (Bern)

6 Pharmacological Interventions
Hofer, A.; Fleischhacker, W.W. (Innsbruck)

7 Motivational Enhancements in Schizophrenia
Medalia, A.; Choi, J. (New York, N.Y.)

Author Index 173
Subject Index 175
This book comes at a particularly opportune moment and sets an important cornerstone in this crucial phase of the development of effective cognitive-behavioral treatment strategies for schizophrenia.

If one follows this development over time, the first therapeutic methods mirrored man’s picture of himself and assumed a one-sided dependency of behavior on environmental factors. In the 1970s, improving social competence became increasingly important, whereby highly structured programs taught the patient both verbal and non-verbal behavior patterns. It was expected that increased social competence would lead to a better quality of life with deeper social integration. The fact that only moderate therapeutic success was witnessed in this area was seen as a result (among other factors) of the patient’s cognitive deficits not being taken into consideration adequately enough. Subsequently, social aspects of the training programs were geared towards overcoming these deficits. As a result, cognitive rehabilitation, which aims to improve the comprehension and processing of information, gained importance. This included both cognitive therapy programs as well as combined cognitive-behavioral approaches. Earlier, cognitive rehabilitation had been neglected for different reasons: cognitive deficits were either considered as epiphenomena, without any functional clinical significance, or as being too deeply rooted in the patient and, thus, not changeable. These assumptions, however, had to be revised when, for example, the lack of learning aptitude postulated for schizophrenic patients was disproved by the complex tasks of tests such as the Wisconsin Card Sorting Test, and the so-called ‘vulnerability markers’ proved to be modifiable through targeted interventions. Although the initial results for cognitive and, in particular, computer-aided training were encouraging, further investigations only showed limited transfer from such programs to everyday life. The reason for this seemed mainly to be a result of the isolated
training of individual cognitive functions, not taking other cognitive deficits and social dimensions into account.

Based on new models of schizophrenia, therefore the combination of elements from cognitive and social therapies appears to be especially promising. On the one hand, mounting evidence suggests that certain neurocognitive and social cognitive deficits are more related to certain areas of functional outcome than psychotic symptoms. The recent advances made in the understanding of these relationships can be directly linked to the development of innovative treatment approaches. On the other hand, the ability to implement the skills practiced in therapy into everyday life requires an implicit knowledge of social situations. In this context, aspects of social perception as well as the perception and management of emotions have gained importance.

Finally, the developments described above have converged with other influences calling for professionals to 'look at the person behind the illness', which appears to find the most visible expression in the concept of recovery. This is the view Neurocognition and Social Cognition in Schizophrenia Patients: Basic Concepts and Treatment focuses on; particularly as the editors point out that this book is about much more than just symptomatic relief and stability, but rather the attainment of functional stability and progress in professional formation, work, independent living and social interaction. The understanding and effective treatment of schizophrenia-specific problems with cognition are recognized as central requirements for successful recovery and their various aspects are illuminated: basic information about the nature, measurement and meaning of neurocognitive and social cognitive deficits and processes is provided; the most recent advances in the knowledge about the role of these deficits and processes on functional recovery are highlighted, and the latest innovative approaches to respective treatments, as well as practical examples, are outlined.

Thus, Neurocognition and Social Cognition in Schizophrenia Patients: Basic Concepts and Treatment provides a most timely synopsis of this developing field with an emphasis on the integration of neurocognitive and social cognitive functioning in psychiatric rehabilitation. Last but not least, the efforts required to integrate behavior therapy with optimal pharmacotherapy are also acknowledged. From whatever perspective, behavior – cognitive, emotional, social, intellectual and instrumental modes of personal functioning – can be understood as the product of a circular causality between neurophysiological, cognitive, emotional, social and environmental variables constantly interacting with each other. Further advances can only be expected when individual fields within research and practice utilize the current knowledge available in neighboring fields. Overall, this book thus is extremely well suited to scientists and practitioners alike and provides an excellent theoretical and empirical basis for evidence-guided clinical practice as well as for innovative research.

Hans D. Brenner
Valparaiso, December 2009
Preface

People with schizophrenia struggle with an array of positive and negative symptoms, which together often make it difficult to achieve the common life goals of working, living independently, finishing school and forging and maintaining rewarding relationships. The positive symptoms of hallucinations and delusions, disorganization and agitation have received the bulk of attention over the years, and tremendous progress has been made in developing pharmacologic treatments that ameliorate these strikingly abnormal behaviors. With such advances in treatment, more people with schizophrenia live in the community, and the aspiration of achieving recovery is no longer dismissed as impossible but recognized as a meaningful and feasible, although admittedly highly elusive goal.

Why is it that recovery is so difficult to achieve? It is because recovery embraces more than symptomatic relief and stability. Recovery also refers to the attainment of functional stability. Recovered people have made progress in their attempts to finish school, work, live independently and socialize. They are not just living in the community but actively engaged in community life and able to negotiate the challenges with some independence. In the last 2 decades, researchers have carefully studied predictors of functional recovery, and it has become recognized that relief from the positive symptoms is insufficient to garner progress in the functional arena. Rather it is a different array of ‘symptoms’ that cobble the efforts of patients as they struggle toward recovery; it is the problems with cognition, socialization and motivation.

Impairments in cognition, motivation and socialization have been recognized as core features of schizophrenia for over 100 years. At the turn of the 20th century Emil Kraeplin wrote about a progressive decline in the cognitive abilities of attention, problem solving and learning, which he speculated was negatively effecting social, vocational and independent functioning. Since he identified the problems, numerous
studies have been and continue to be done to characterize the nature of the deficits. When the role of these deficits in functional outcome had been demonstrated, the clinical significance of developing treatments for these disabilities gained recognition.

Cognition is a term that broadly refers to thinking abilities. It encompasses the range of skills from isolated processes like memory and attention, which are the focus of neuropsychological investigations and therapies, to the form and content of thought, which are often the focus of cognitive behavioral therapies. The study of cognitive processes appreciates that while most processes are neuropsychological, some are primarily in the service of social interactions, and the term social cognition is used to identify those particular processes. The cognitive ability to perceive, interpret and generate responses to social interactions is included in the term social cognition. Together neurocognition and social cognition refer to the basic processes that allow one to learn about, understand and know the world one lives in.

This edited volume addresses the neurocognitive and social cognitive processes that are known to be disrupted in schizophrenia. The focus on these disorders appreciates that they are a key determinant of functional recovery and that to change functionally often requires that neurocognition and social cognition be addressed. The volume is intended to provide practicing clinicians, emerging schizophrenia researchers and students of psychotic disorders with the latest information about the neurocognitive and social cognitive deficits in schizophrenia. This way professionals working with persons with schizophrenia will have the knowledge and tools they need to develop and provide competent professional care.

This volume is organized to provide information about the characterization of neurocognitive and social cognitive deficits as well as treatment approaches which target these symptoms. We invited leading experts – physicians and psychologists – from Europe and the USA to present the ‘state of the art’ in the different fields. To start, chapter 1, by Robert S. Kern and William P. Horan, defines what is meant by these terms and reviews the methods of measurement that are used in different clinical and research settings. Chapter 2, by John S. Brekke and Eri Nakagami, explains why neurocognition and social cognition are relevant to functional recovery and reviews the literature which delineated the ways that these deficits impact work, social and educational outcomes. Given the sobering results on functional outcome when treatments only focus on positive symptoms, there is a growing interest in alternative treatments that target neurocognitive and social cognitive deficits. Chapter 3, by Matthew M. Kurtz and Gudrun Sartory, provides an overview of the behavioral approaches to treating neurocognition. The subchapter by Elizabeth W. Twamley, Cynthia H. Zurhellen and Lea Vella describes a concrete therapy approach for neurocognition, while chapter 4, by Wolfgang Wölwer, Dennis R. Combs, Nicole Frommann and David L. Penn, synthesizes the literature on behavioral treatments of social cognitive deficits. The subchapter by Roland Vauth provides an example of a treatment approach which was designed to train social cognition and thereby enhance emotional intelligence. Chapter 5 by Volker Roder, Lea Hulka and Alice
Medalia gives an overview of treatments integrating neurocognition and social cognition (and partly social skills). Two subchapters illustrate examples for these integrative approaches: Alice Medalia and Elisa Mambrino present the Neuropsychological and Educational Approach to Remediation (NEAR); Daniel R. Müller and Volker Roder describe the Integrated Psychological Therapy (IPT) and the Integrated Neurocognitive Therapy (INT) with concrete guidelines for their application. The pharmacologic treatment of cognition is a burgeoning area, and chapter 6, by Alex Hofer and W. Wolfgang Fleischhacker, reviews the various approaches that are being taken to drug development. Finally, because amotivation is a core feature of schizophrenia and impacts not only the functional outcome but also the ability to engage and benefit from therapies, chapter 7, by Alice Medalia and Jimmy Choi, considers the relevance of motivational theories for understanding how to maximize benefit from therapies that provide cognitive enhancement.

With the interest in promoting functional recovery in schizophrenia comes the need for clinicians and researchers to understand the issues that hamper a successful outcome. Treating symptoms is not enough – the overall goal of any intervention is to help a person integrate and function adaptively in society. This collection of chapters usefully characterizes the nature of the neurocognitive and social cognitive deficits known to negatively impact the functional outcome, as well as the efforts underway to treat them. The terminology, measurement strategies and therapeutic approaches are thoughtfully considered and reviewed. We would like to express gratitude to the authors for contributing to this volume and to Professor Anita Riecher (University Hospital of Psychiatry, Basel, Switzerland) for her vision in choosing this as a topic of interest. It is hoped that these chapters will promote discussion, more research and the further development and improvement of interventions for people with schizophrenia.

Alice Medalia
Volker Roder
New York and Bern, August 2009