Contents

Contributors xiii Preface xv

PART I: FOUNDATIONS OF NEUROLOGICAL AND NEUROPSYCHOLOGICAL PRACTICE 1

Understanding the Past, Present,
 and Future of Clinical Neuropsychology 3
 Deborah E. Witsken, Rik Carl D'Amato, and Lawrence C. Hartlage
 Neuropsychology and Other Assessment Approaches 4
 Training in Neuropsychology 5
 The Past: Influences on Neuropsychological

 Theory and Practice 6

 The Present: Approaches to Neuropsychological

 Assessment and Intervention 11

 The Future: Factors Driving the Future of Neuropsychology 18

2 Introduction to Neuropathology and Brain-Behavior Relationships 31

Lawrence J. Lewandowski and Benjamin J. Lovett

Introduction and Summary 31
Early Theories 31
Scientific Progress 33
Luria's Theory 33
Cerebral Specialization 37
Characteristics of Brain Pathology 43
Types of Neuropathological Disorders 44
Conclusions 50
Treatment Planning and Interventions 51
Clinical Recommendations for Professional Practice 53

۷	İ	İ	i	Contents

The Neurological Examination
as It Relates to Neuropsychological Issues 57
Kimford J. Meador, Glen R. Finney, and Fenwick T. Nichols

Historical Perspective 58
Basis of the Neurological Examination 60
General Physical Examination 61
The Neurological Examination 63
Cranial Nerve Exam 71
Motor Exam 75
Exam of Reflexes 76
Sensory Exam 77
Summary 77

Neuropsychology and Neuroimaging: Integrating and
 Understanding Structure and Function in Clinical Practice 79

Chad A. Noggle, Andrew S. Davis, and Mark Barisa

History of Integrating Brain Morphology and Clinical Practice 80 Computed Tomography 84 Magnetic Resonance Imaging 86 Positron-Emission Tomography 87 Electroencephalography 88 Functional Magnetic Resonance Imaging 89 Clinical Recommendations for Professional Practice 90

PART II: NEUROPSYCHOLOGICAL ASSESSMENT FOR TREATMENT PLANNING AND INTERVENTION 103

Understanding and Using the Halstead-Reitan
 Neuropsychological Test Batteries With Children and Adults 105
 Stephanie R. Sinco, Rik Carl D'Amato, and Andrew S. Davis

Introduction and History 105
Fixed Versus Flexible Battery Approach 109
Psychometric Properties 110
Evaluating Tests From the Halstead-Reitan
Neuropsychological Battery 110
Interpreting HRNB Scores and Composites 117
Treatment Planning in Neuropsychological Rehabilitation 119
Summary 121

Understanding and Using the Luria-Nebraska Neuropsychological Test Batteries With Children and Adults 127 Justin Walker, Rik Carl D'Amato, and Andrew S. Davis

History of the Luria-Nebraska 128 Applied Research With the Battery 130 Luria-Nebraska Test Descriptions 132 Scales on the Luria-Nebraska Battery 134 Scoring and Interpretation of the Luria-Nebraska 140 Psychometric Characteristics of the Battery 142 Conclusions 143

7 Understanding and Using the NEPSY-II With Young Children, Children, and Adolescents 149 Jonathan E. Titley and Rik Carl D'Amato

Development and Theoretical Foundation of the NEPSY-II 149
Materials 152
Organization and Administration 152
The Psychometric Properties of the NEPSY-II 155
Clinical Utility of the NEPSY-II for Diagnosis 166
Interpretation 169
Conclusion 170

8 Understanding and Using the Dean-Woodcock Neuropsychological Battery With Children, Youth, Adults, and in Geriatrics 173 Andrew S. Davis

The Dean-Woodcock Sensory-Motor Battery (DWSMB) 174 DWSMB Subtests 175 Validation of the DWSMB 184 Clinical Recommendations for Professional Practice for the DWSMB 189 Conclusion 202

9 A Descriptive Summary of Essential Neuropsychological Tests 207 Cynthia A. Riccio

Comprehensive Neuropsychological Test Batteries 208 Tests of Language Ability 211 Tests of Nonverbal Reasoning Ability 214 Visual-Spatial and Constructional Performance 219

X Contents

Motor Skills Tests 222
Tests of Memory and Learning Ability 223
Tests of Attention, Concentration, and Conceptual Tracking 228
Objective Personality Testing 232
Treatment Planning and Interventions 233
Clinical Recommendations for Professional Practice 234

PART III: TREATMENT PLANNING AND INTERVENING WITH SPECIAL POPULATIONS AND INDIVIDUALS WITH DISORDERS 243

10 Brief and Comprehensive Neuropsychological Assessment of Children and Adults With Learning Difficulties and Disabilities 245

Margaret Semrud-Clikeman and Jodene Goldenring Fine

Models of LD Determination 246 Comorbidity 251 Reading Disorder 253 Interventions 268 Written Language Disorders 271 Interventions in Written Language 278 Conclusion 281

11 Brief and Comprehensive Neuropsychological Assessment of Alcohol and Drug Abuse 293

Arthur MacNeill Horton Jr. and Arthur MacNeill Horton III

Overview 293

Brain Structures Related to Addiction Processes 294
Psychoactive Substance Abuse Research Issues 296
Assessment Issues 298
Neuropsychological Assessment 298
Screening Assessments 299
Comprehensive Assessment 302
Marijuana (Cannabis) 304
Hallucinogens/LSD and Ecstasy 304
Opiates 305
Sedatives 305
Phencyclidine 306
Cocaine and Other Stimulants 306
Inhalants and Solvents 307

Polydrug Abuse 307 Suggestions for Practitioners 308 Clinical Considerations 308 Clinical Recommendations for Treatment Planning and Interventions 309

12 Brief and Extended Neuropsychological Assessment of Aging and Dementia 315

J. Michael Williams

Differential Diagnosis 318 Neuropsychological Assessment 320 Brief Assessment Approaches 322 Extended Neuropsychological Assessment 324 Case Report 327

Index 333