CASE STUDIES

Stahl's Essential Psychopharmacology

Volume 3

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Every effort has been made in preparing this book to provide accurate and up-to-date information that is in accord with accepted standards and practice at the time of publication. Although case histories are drawn from actual cases, every effort has been made to disguise the identities of the individuals involved. Nevertheless, the authors, editors, and publishers can make no warranties that the information contained herein is totally free from error, not least because clinical standards are constantly changing through research and regulation. The authors, editors, and publishers therefore disclaim all liability for direct or consequential damages resulting from the use of material contained in this book. Readers are strongly advised to pay careful attention to information provided by the manufacturer of any drugs or equipment that they plan to use.

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Introduction

Following on from the success of the second volume of *Case Studies* in 2016, we are very pleased to present a third collection of new clinical cases. This third collection of cases is the result of a special project of the Department of Psychiatry and Neuroscience of the University of California, Riverside, where all three editors are faculty members. Each case is taken from the clinical practices of the department and each is written by a team comprising a medical student or resident/fellow in psychiatry paired with a faculty member in the UCR psychiatry and neuroscience department. This volume of cases thus showcases not only the clinical practice in our department, but the teamwork of faculty and trainees to produce a scholarly and educational book to enrich and inform our colleagues who treat mental illness. *Stahl's Essential Psychopharmacology* started in 1996 as a textbook (currently in its fourth edition) on how psychotropic medications work. It expanded to a companion Prescriber's Guide in 2005 (currently in its fifth edition) on how to prescribe psychotropic medications. In 2008, a website was added (**stahlonline.cambridge.org**) with both of these books available online in combination with several more, including an *Illustrated* series of books covering specialty topics in psychopharmacology. The *Case Studies* shows how to apply the concepts presented in these previous books to real patients in a clinical practice setting.

Why a case book? For practitioners, it is necessary to know the science and application of psychopharmacology – namely, both the mechanism of action of psychotropic medications and the evidence-based data on how to prescribe them – but this is not sufficient to become a master clinician. Many patients are beyond the data and are excluded from randomized controlled trials. Thus, a true clinical expert also needs to develop the art of psychopharmacology: namely, how to listen, educate, destigmatize, mix psychotherapy with medications, and use intuition to select and combine medications. The art of psychopharmacology is especially important when confronting the frequent situations where there is no evidence on which to base a clinical decision.

What do you do when there is no evidence? The short answer is to combine the science with the art of psychopharmacology. The best way to learn this is probably by seeing individual patients. Here we hope you will join us and peer over our shoulders to observe 34 complex cases from our own clinical practice. Each case is anonymized in identifying details, but incorporates real case outcomes that are not fictionalized. Sometimes more than one case is combined into a single case. Hopefully, you will recognize many of these patients as similar to those you have seen in your own practice (although they will not be exactly the same patient, as the identifying historical details are changed here to comply with disclosure standards, and many patients can look

very much like many other patients you know, which is why you may find this teaching approach effective for your clinical practice).

We have presented cases from our clinical practice for many years online (e.g. in the master psychopharmacology program of the Neuroscience Education Institute (NEI) at neiglobal.com) and in live courses (especially at the annual NEI Psychopharmacology Congress). Over the years, we have been fortunate to have many young psychiatrists from our universities, and indeed from all over the world, sit in on our practices to observe these cases, and now we attempt to bring this information to you in the form of a third case book.

The cases are presented in a novel written format in order to follow consultations over time, with different categories of information designated by different background colors and explanatory icons. For those of you familiar with *The Prescriber's Guide*, this layout will be recognizable. Included in the case book, however, are many unique sections as well; for example, presenting what was on the author's mind at various points during the management of the case, and also questions along the way for you to ask yourself in order to develop an action plan. There is a pretest, asked again at the end as a posttest, for those who wish to gain CME credits (go to **neiglobal.com** to answer these questions and obtain credits). Additionally, these cases incorporate ideas from the recent changes in maintenance of certification standards by the American Board of Psychiatry and Neurology for those of you interested in recertification in psychiatry. Thus, there is a section on Performance in Practice (called here "Confessions of a psychopharmacologist"). There is a short section at the end of several cases looking back and seeing what could have been done better in retrospect. Another section of most cases is a short psychopharmacology lesson or tutorial, called the "Two-minute tutorial," with background information, tables, and figures from literature relevant to the case in hand. Medications are listed by their generic and brand names for ease of learning. Indexes are included at the back of the book for your convenience. Lists of icons and abbreviations are provided in the front of the book. Finally, this third collection updates the reader on the newest psychotropic medications and their uses, and adopts the language of *DSM-V*.

The case-based approach is how this book attempts to complement "evidence-based prescribing" from other books in the *Essential Psychopharmacology* series, plus the literature, with "prescribing-based evidence" derived from empiric experience. It is certainly important to know the data from randomized controlled trials, but after knowing all this information, case-based clinical experience supplements those data. The old saying that applies here is that wisdom is what you learn *after* you know it all; and so, too, for studying cases after seeing the data.

A note of caution: we are not so naïve as to think that there are not potential pitfalls to the centuries-old tradition of case-based teaching. Thus, we think it is a good idea to point some of them out here in order to try to avoid these traps. Do not ignore the "law of small numbers" by basing broad predictions on narrow samples or even a single case.

Do not ignore the fact that if something is easy to recall, particularly when associated with a significant emotional event, we tend to think it happens more often than it does.

Do not forget the recency effect, namely, the tendency to think that something that has just been observed happens more often than it does.

According to editorialists[1], when moving away from evidence-based medicine to case-based medicine, it is also important to avoid:

- Eloquence or elegance-based medicine
- Vehemence-based medicine
- Providence-based medicine
- Diffidence-based medicine
- Nervousness-based medicine
- Confidence-based medicine

We have been counseled by colleagues and trainees that perhaps the most important pitfall for us to try to avoid in this book is "eminence-based medicine," and to remember specifically that:

- Radiance of gray hair is not proportional to an understanding of the facts
- Eloquence, smoothness of the tongue, and sartorial elegance cannot change reality
- Qualifications and past accomplishments do not signify a privileged access to the truth
- Experts almost always have conflicts of interest
- Clinical acumen is not measured in frequent flier miles

Thus, it is with all humility as practicing psychiatrists that we invite you to walk a mile in our shoes; experience the fascination, the disappointments, the thrills, and the learnings that result from observing cases in the real world.

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[1] Isaccs D and Fitzgerald D. Seven alternatives to evidence based medicine. *British Medical Journal 1999; 319:1618.*

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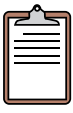
List of icons

	Pre- and posttest self-assessment question; question
	Patient evaluation on intake; patient evaluation on initial visit
	Psychiatric history
	Social and personal history
	Medical history
	Family history
	Medication history
	Current medications

	**Psychotherapy history; psychotherapy moment**
	**Mechanism of action moment**
	**Attending physician's mental notes**
	**Further investigation**
	**Case outcome; use of outcome measures**
	**Case debrief**
	**Take-home points**
	**Performance in practice: confessions of a psychopharmacologist**
	**Tips and pearls**
	**Two-minute tutorial**

Abbreviations

5-HT	serotonin
AACAP	American Academy of Child and Adolescent Psychiatry
AAP	American Academy of Pediatrics
ACE	adverse childhood event
ADHD	attention-deficit/hyperactivity disorder
AF	atrial fibrillation
AIMS	Abnormal Involuntary Movement Scale
ALT	alanine amino transferase
AMPA	α-amino-3-hydroxy-5-methyl-4-isoxazolepropionic acid
ANC	absolute neutrophil count
ANCA	anti-neutrophil cytoplasmic antibody
ASD	autism spectrum disorder
ASQ	Ages and Stages Questionnaire
AST	aspartate amino transferase
AWS	alcohol withdrawal syndrome
BDNF	brain-derived neurotrophic factor
BDZ	benzodiazepine
BED	binge eating disorder
BMI	body mass index
BMP	basic metabolic panel
BPD	brief psychotic disorder
bpm	beats/min
BUN	blood urea nitrogen
CBC	complete blood count
CBT	cognitive behavioral therapy
CIWA-Ar	Clinical Institute Withdrawal Assessment of Alcohol, Revised
CNS	central nervous system
COVID-19	coronavirus disease 2019
CPS	Child Protective Services
CT	computed tomography
CYP1A2	cytochrome P450 1A2
CYP2D6	cytochrome P450 2D6
DA	dopamine
DSM-4-TR	*Diagnostic and Statistical Manual of Mental Disorders*, 4th edn., text revision
DSM-4/DSM-5	*Diagnostic and Statistical Manual of Mental Disorders*, 4th/5th edn.
ECG	electrocardiogram
ECT	electroconvulsive therapy
EEG	electroencephalogram
EPS	extrapyramidal symptoms
ER	extended-release
FAST	Functional Adaptation and Skills Training
FDA	US Food and Drug Administration
fMRI	functional magnetic resonance imaging
GABA	γ-aminobutyric acid
GAD	generalized anxiety disorder

G-CSF	granulocyte colony-stimulating factor
GnRH	gonadotropin-releasing hormone
GSK3	glycogen synthase kinase 3
HAM-D	Hamilton Depression Rating Scale
HbA1c	hemoglobin A1c
HDL	high-density lipoprotein
HIV	human immunodeficiency virus
HPA	hypothalamic–pituitary–adrenal
ID	intellectual disability
IDD	intellectual developmental disorder
IEP	Individualized Education Plan
IM	intramuscular
IMD	institution for mental diseases
IPT	interpersonal psychotherapy
IR	immediate-release
IV	intravenous
KOR	κ-opioid receptor
LAI	long-acting injectable
LDL	low-density lipoprotein
LPS	Lanterman–Petris–Short
MAO	monoamine oxidase
MAOI	monoamine oxidase inhibitor
MASC	Multidimensional Anxiety Scale for Children
MDD	major depressive disorder
MDE	major depressive episode
MERS	Middle East respiratory syndrome
MMSE	mini-mental state examination
MoCA	Montreal Cognitive Assessment
MOR	μ-opioid receptor
MRI	magnetic resonance imaging
mTOR	mammalian target of rapamycin
NDRI	norepinephrine-dopamine reuptake inhibitor
NE	norepinephrine
NMDA	*N*-methyl-D-aspartate
NMS	neuroleptic malignant syndrome
NPSLE	neuropsychiatric systemic lupus erythematosus
OCD	obsessive–compulsive disorder
ODT	oral disintegrating tablet
OROS	osmotic-controlled release oral delivery system
PARS	Pediatric Anxiety Rating Scale
PAWSS	Prediction of Alcohol Withdrawal Severity Scale
PCP	primary care physician
PEDS	Parent's Evaluation of Developmental Status
PET-CT	positron emission tomography/computed tomography
PO	by mouth
PTSD	posttraumatic stress disorder
QTc	corrected QT interval
REM	rapid eye movement
RVR	rapid ventricular response
SAD	seasonal affective disorder

SARS	severe acute respiratory syndrome
SCA	spinocerebellar ataxia
SCARED	Screen for Child Anxiety and Related Emotional Disorders
SCAS	Spence Children's Anxiety Scale
SCL-90-R	Symptom Checklist-90-Revised
SLD	specific learning disorder
SLE	systemic lupus erythematosus
SNRI	serotonin-norepinephrine reuptake inhibitor
SSRI	selective serotonin reuptake inhibitor
T3	triiodothyronine
T4	thyroxine
TBI	traumatic brain injury
TBS	Therapeutic Behavioral Services
TCA	tricyclic antidepressant
TR	time-release
TSH	thyroid-stimulating hormone
UDS	urine drug screen
VEGF	vascular endothelial growth factor
VLPFC	ventrolateral prefrontal cortex
VMAT2	vesicular monoamine transporter-2
WISC	Wechsler Intelligence Scale for Children
WPATH	World Professional Association for Transgender Health
XL	extended-release
XR	extended-release