

Prescriptive Authority for Psychologists

Robert E. McGrath

School of Psychology, Fairleigh Dickinson University, Teaneck, New Jersey 07666;
email: mcgrath@fdu.edu

Annu. Rev. Clin. Psychol. 2010.6:21-47

First published online as a Review in Advance on
January 19, 2010

The *Annual Review of Clinical Psychology* is online
at clipsy.annualreviews.org

This article's doi:
10.1146/annurev-clipsy-090209-151448

Copyright © 2010 by Annual Reviews.
All rights reserved

1548-5943/10/0427-0021\$20.00

Key Words

medications, prescribing psychologists, medical psychologists,
legislation, Psychopharmacology Demonstration Project

Abstract

The proposal that psychologists should pursue prescriptive authority was first put forth 25 years ago, and it has been an official goal of the American Psychological Association for 15 years. Since then some form of prescriptive authority has been approved by three states, the Territory of Guam, and three branches of the military. Psychologists are also eligible to prescribe in the Public Health Service and the Indian Health Service. The movement has generated strong opinions both in favor and in opposition. Supporters focus particularly on increasing access to appropriate care and changing the role of psychologists within the healthcare system, while opponents raise concerns about how prescriptive authority will change professional psychology and whether psychologists will prescribe safely. This review provides a summary of milestones in the movement to date, as well as the arguments that have been raised for and against prescriptive authority.

Contents

PRESCRIPTIVE AUTHORITY FOR PSYCHOLOGISTS	22
THE HISTORY OF RxP	22
Association Support	22
The Evolution of Education and Training	24
Legislative and Regulatory Developments	27
THE DEBATE OVER RxP	31
Improving Access to Care	31
Reducing Medication Use versus Loss of Identity	32
Other Potential Benefits to Patients	34
Potential Benefits to Psychology	34
Dual Training as an Alternative	36
Concerns Over Safe and Adequate Care	37
Other Objections	40
CONCLUSIONS	42

PRESCRIPTIVE AUTHORITY FOR PSYCHOLOGISTS

In the 60 years since the American Psychological Association (APA) first adopted standards for training in healthcare psychology¹ (Comm. Training Clin. Psychol. Am. Psychol. Assoc. 1947), the field has undergone some dramatic changes. These include the proliferation of alternative training and treatment models, eligibility for licensure and third-party payment, and the emergence of various specialties and proficiencies such as those in health psychology and neuropsychology. It can be argued that few of these events are as potentially transformative as the quest for prescriptive authority for healthcare psychologists.² That transformative

¹This term is used to encompass all psychologists whose professional emphasis is on the diagnosis and treatment of psychological and behavioral disorders.

²Many earlier discussions of this topic erroneously refer to “prescription privileges.” Privileges refer to activities permitted by a facility, e.g., approval to prescribe by a

potential has made the movement the target of close scrutiny within the discipline, with strong opinions expressed on both sides. The present article provides an overview of the movement for prescriptive authority for psychologists (RxP). It begins with a brief history organized around domains of activity, with the same history provided in chronological order in **Table 1** (for additional history of the movement, see Fox 2003). This is followed by a summary of the arguments for and against RxP. For the sake of full disclosure I must admit I am an active supporter of RxP. I have attempted to provide a thorough and fair presentation of the issues though my biases are probably clear.

THE HISTORY OF RxP

Association Support

In 1981, a task force of the APA Board of Professional Affairs anticipated an increased role for psychologists in the provision of physical interventions and concluded that such an intervention “is within the scope of practice of psychology so long as its use is (a) healthcare-related and intended to improve assessment or treatment; (b) within the scope of the practitioner’s competence as a result of appropriate training, supervision, and experience; and (c) justified in terms of the welfare of the consumer.”³ This position was reinforced in a second task force report on physical interventions five years later (also Am. Psychol. Assoc. 1986). The report signaled an important shift in the association’s thinking about scope of practice. The scope of practice for psychology was traditionally based on whether or not an intervention emerged primarily out of psychosocial

commanding officer in the military. State legislatures instead authorize professional practices, which is the mechanism by which most psychologists would become eligible to prescribe.

³The policy seems to have been written specifically with individuals suffering from psychological disorders in mind. As written, it has some questionable implications when applied to other populations served by psychologists. For example, it opens the door for psychologists who work with a general medical population to pursue any physical intervention relevant to their setting.

Table 1 A chronology of milestones in prescriptive authority for psychologists

Year	Event
1981	The APA Board of Professional Affairs defines the conditions under which the use of “physical interventions” is within the scope of practice of psychology.
1984	Senator Daniel Inouye suggests to the Hawaii Psychological Association that psychologists should adopt prescriptive authority as a legislative agenda.
1989	The Board of Professional Affairs endorses enhanced training in psychopharmacology for psychologists. Congress funds a pilot training program for the DoD.
1990	The first APA task force on psychopharmacology is created.
1991	The DoD Psychopharmacology Demonstration Project begins.
1992	The APA task force report identifies three levels of preparation for involvement in pharmacotherapy.
1993	The Prescribing Psychologists Register begins offering courses for civilian psychologists. Indiana permits prescriptive authority for psychologists in relevant federal programs.
1994	The Psychopharmacology Demonstration Project graduates its first two participants.
1995	The APA Council of Representatives votes to make obtaining prescriptive authority APA policy.
1996	APA Council adopts a model curriculum in psychopharmacology and model law for awarding psychologists prescriptive authority.
1997	The Psychopharmacology Demonstration Project is discontinued. APA Council authorizes development of the Psychopharmacology Examination for Psychologists.
1999	Guam approves prescriptive authority for appropriately trained psychologists.
2001	APA recognizes psychopharmacology as a proficiency.
2002	New Mexico approves prescriptive authority for appropriately trained psychologists.
2004	Louisiana approves prescriptive authority for appropriately trained psychologists.
2005	The first prescription is written by a civilian psychologist.
2008	APA Council adopts a revised model curriculum “in principle” pending development of a designation system and forms a task force for this purpose.
2009	APA Council adopts the revised model curriculum, guidelines for a designation system for programs, and practice guidelines relevant to psychopharmacotherapy.

Note: In some cases, years differ slightly from those listed in other sources because there are multiple points that can be used to identify when a legislative action or set of guidelines was finalized. An attempt was made to use the dates that are most commonly cited. Abbreviations: DoD, Department of Defense; APA, American Psychological Association.

theory. The task force suggested an alternative standard, one that could encompass any intervention relevant to the treatment of individuals with psychological or behavioral disorders, so long as psychologists undertook sufficient additional training to achieve competence in that intervention. The shift to a broader conceptualization of scope can also be seen as a product of the biopsychosocial model that was emerging for healthcare in general and for the treatment of chronic and recurrent disorders in particular (Engel 1977).

The proximal instigating event for the RxP movement was a presentation made by Senator Daniel Inouye (Democrat-Hawaii) to the

Hawaii Psychological Association in 1984. As an advocate for individuals suffering from mental illness, Senator Inouye encouraged psychologists to pursue prescriptive authority as a means of meeting shortfalls in the availability of appropriately trained prescribers. His comments sparked a discussion within the state association, and shortly thereafter in the national association. In 1989, the APA Board of Professional Affairs decided to endorse advanced training in psychopharmacology for psychologists, leading to the creation of an APA task force on psychopharmacology in 1990 and ultimately to adopting the pursuit of RxP as the official policy of the association in 1995 (Fox

2003, Smyer et al. 1993). An important contributor to the movement during the 1990s was the election of five psychologists who were early public advocates of RxP to the presidency of APA: Stanley Graham, 1990; Jack Wiggins, 1992; Ronald Fox, 1994; Robert Resnick, 1995; and Patrick DeLeon, 2000 (e.g., DeLeon et al. 1991, Resnick et al. 1997, Wiggins 1992). Since then, APA has sponsored a number of the key developments in RxP, as the following sections describe.

The Evolution of Education and Training

With the support from Sen. Inouye, Congress funded a pilot program in 1989 to train psychologists in the Department of Defense to prescribe. This proved to be a controversial undertaking, and as a result, the first cohort did not begin their training in the Psychopharmacology Demonstration Project (PDP) until 1991. Sammons & Brown (1997) outlined the evolution of the PDP's curriculum. The first cohort began training equivalent to that of a physician's assistant. However, it was subsequently recognized that this approach was inconsistent with congressional intent, which was to prepare independent prescribers. The participants were then enrolled in a curriculum that overlapped heavily with one completed by medical students. This curriculum was also inconsistent with the mandated parameters of the program, as it required three years to complete both the didactic and practicum requirements whereas the legislation called for a two-year program. For subsequent cohorts, the curriculum was modified in an attempt to identify the level of training appropriate for psychologists. The number of academic contact hours was slashed drastically, from 1365 to 660 in the last two iterations. A second year was devoted to practicum, during which participants were expected to see at least 100 patients, though in practice they saw more.

The PDP remained controversial due to opposition from psychiatrists and was terminated in 1997. During its brief history, the PDP

was the subject of four independent evaluations (Newman et al. 2000), a level of scrutiny one might wish the government we applied to some billion-dollar weapons systems, and particularly remarkable given the brevity of its existence (four cohorts in seven years) and the small number of graduates (ten).

The first evaluation was a feasibility study completed by Vector Research, Inc. (1996). Vector found that all categories of stakeholders surveyed with the exception of psychiatrists, including primary care physicians and patients, thought favorably of the idea. The evaluators also concluded that training psychologists to prescribe would cost the military less than using physicians for the same purpose, even when including the one-time startup costs of the program.

In 1997, the U.S. General Accounting Office (GAO) completed an evaluation that focused on the costs of and need for the program (U.S. Gen. Account. Off. 1997). The results were less positive, concluding that costs were excessive. In an attempt to explain the discrepant findings of the two studies, APA funded a reanalysis of the GAO findings by Coopers and Lybrand, Inc. They noted that the GAO study included both startup costs and program evaluation costs, which were quite high. The GAO report also assumed that the cost of training a psychologist would be equivalent to that of a medical student even though the curriculum was abbreviated after the first cohort. The GAO report also concluded that no shortage existed in the availability of psychiatrists. Though the GAO estimated the number of psychiatrists serving in the military was even sufficient to meet wartime needs, more recent reports indicate the military is now experiencing a shortage in psychiatric care because of the mental health needs created by the current wars in Iraq and Afghanistan (Daly 2007).

A second GAO report was completed in 1999, this time focusing on the performance of the PDP graduates, with more positive conclusions (U.S. Gen. Account. Off. 1999). Supervising physicians—including psychiatrists—were uniformly positive in their evaluations

of the participants' performance. The GAO also looked at cost and again suggested training psychologists to prescribe would increase costs over standard practice, though this increase was smaller than that estimated in the prior report and again was criticized by supporters for assuming evaluation costs would remain constant.

Finally, the American College of Neuropsychopharmacology (ACNP) was contracted to perform an ongoing analysis of the program from its inception in 1991 until 1998. The final report (Am. Coll. Neuropsychopharmacol. 1998) drew a number of conclusions, including the following:

1. All graduates filled critical needs as prescribers—in fact, 8 of 10 had already assumed positions as chiefs of mental health clinics—and uniformly performed with excellence. Even psychiatrists working with the graduates expressed this opinion.
2. Although estimates of the graduates' general medical knowledge placed them on a par with third- or fourth-year medical students, their psychiatric knowledge was judged to be consistent with that of a second- or third-year psychiatry resident. Most important, they were judged to be medically safe providers. The executive summary ends with the conclusion “we are in agreement that the Psychopharmacology Demonstration Project is a job well done” (Am. Coll. Neuropsychopharmacol. 1998, p. 6).
3. “Virtually all” (Am. Coll. Neuropsychopharmacol. 1998, p. 3) the graduates of the PDP were skeptical of programs that abbreviated the training even further, with most favoring a full-time year of clinical experience.
4. The report noted the absence of a single significant adverse event among patients treated by the PDP graduates. It was unclear whether this referred to all adverse events or only serious ones.
5. Despite their additional training, the PDP graduates' values and practices

still identified them as psychologists. They continued to rely heavily on psychotherapy and assessment instruments as tools in treatment.

6. The report noted that certain elements of the PDP program would limit the generalizability of the results. These included the length and intensity of the training model (at least two years full time, including one year of supervised clinical experience), service in settings that adopted a team approach, and restriction of practice to individuals with relatively low levels of pathology between the ages of 18 and 65.

During the PDP, parallel developments were occurring outside the military. As noted above, in 1990 APA established a task force to address psychologists' role in pharmacotherapy (Smyer et al. 1993). The most influential element of this report was the delineation of three levels of education and training appropriate for psychologists. Level 1 represented basic psychopharmacology education. The members of the task force recommended one required course of three to five credits added to doctoral-level training in preparation for becoming a healthcare provider in psychology, and a subsequent task force generated a model curriculum for such a course (Kilbey et al. 1995). Many doctoral programs in healthcare psychology now require such a course. The task force members also recommended making continuing education in psychopharmacology mandatory for all licensed healthcare psychologists. To date, Georgia is the only state that has implemented this recommendation.

Level 2 referred to postdoctoral training for individuals who planned to participate in medication consultation, actively working with licensed prescribers to manage medications and develop treatment plans. Again, a model curriculum was subsequently developed (Am. Psychol. Assoc. Board Educ. Affairs Working Group Psychopharmacol. Educ. Training 1997), but to date no programs have been founded specifically to train psychologists in preparation for Level 2 activities. Instead,

efforts at the postdoctoral level have focused almost exclusively on training in preparation for prescriptive authority.

Level 3 referred to postdoctoral training in preparation for independent prescriptive authority. Another task force was charged with creating a model Level 3 curriculum, and in this case the resulting model was ultimately adopted as APA policy (Am. Psychol. Assoc. Council. Rep. 1996), as was a model licensing law for prescriptive authority. The model curriculum document called for at least 300 didactic contact hours, though 350 hours were recommended based on content domains; described a practicum experience involving at least 100 patients, consistent with the PDP; and set the prerequisites for training. These prerequisites included licensure as a healthcare psychologist and completion of coursework in several basic content domains such as biochemistry, anatomy, and physiology.

Prior to adoption of this curriculum, only one program had emerged to train psychologists in preparation for prescriptive authority outside the military, the Prescribing Psychologists Register founded in 1993. Once APA established guidelines for Level 3 training, however, other programs were initiated. These included programs offered through Alliant International University (begun in 1998); Nova Southeastern University (1999); Southwestern Institute for the Advancement of Psychotherapy and New Mexico State University (1999); Argosy University-Hawaii Campus (2000); Fairleigh Dickinson University (2000); and the Massachusetts School of Professional Psychology (2001). At least four other programs were constituted but have since either ceased operation or seem to be indefinitely suspended. It has been estimated that about 1500 psychologists have now completed didactic training in preparation for RxP (Ax et al. 2009).

In 1997, the APA Council also approved the development of a competency examination in psychopharmacology that could be used in the credentialing process for prescriptive authority, called the Psychopharmacology Examination for Psychologists (PEP). The PEP is available

through the APA College for Professional Psychology, part of the APA Practice Organization, and has been operational since 2000. The exam consists of 150 items administered remotely at sites around the country, with a recommended passing score that varies slightly across versions but is usually around 70% (105). As of June 2007, the test had been administered 190 times (Am. Psychol. Assoc. Pract. Org. 2007), suggesting the large majority of psychologists who have completed Level 3 training are delaying taking the PEP until they are eligible for prescriptive authority. Also suppressing the numbers was an alternate examination offered to graduates of the PPR program. Given the small numbers, and given that each state will ultimately be responsible for setting its own passing score, no official information has been distributed concerning passing rate. However, the reported mean score was 107.94, just slightly higher than the recommended passing score.

In 2001, the APA Council of Representatives recognized psychopharmacology as a proficiency within psychology, a term that implies:

a circumscribed activity in the general practice of professional psychology or one or more of its specialties that is represented by a distinct procedure, technique, or applied skill set used in psychological assessment, treatment and/or intervention within which one develops competence (Am. Psychol. Assoc. Council. Rep. 2008a, p. 1).

The proficiency encompasses all three levels of applied training as well as training in psychopharmacology as a research endeavor. This homogeneous collection of activities does not meet the more stringent criteria for a specialty, for which clinical or school psychology serve as prototypical examples. The recognition is due for renewal in 2009.

By 2006, it was recognized that the original Level 3 model curriculum needed revision. Certain inconsistencies and impracticalities in the requirements of the curriculum, particularly concerning the clinical experiences needed to complete the training, had become evident.

For example, it was ambiguous whether certain elements of the practicum were required or voluntary, such as whether psychologists were required to see both inpatients and outpatients. Also, the prerequisite coursework could be completed through continuing education, which offered no quality control. As a practical matter, few applicants had completed the necessary prerequisite coursework, so these topics were folded into the training. Finally, there were differing opinions about whether the guidelines allowed for free-standing certificate programs such as PPR. As a result of these issues, no program was able to comply with the guidelines exactly, and another task force was impaneled to revise the model curriculum as well as the model licensing law.

That task force introduced the revised APA model curriculum for Level 3 education and training outlined in **Table 2**. Prerequisites for matriculation include current licensure as a healthcare psychologist. The curriculum is intended as an integrated didactic and experiential undertaking culminating in a capstone evaluation of competence, though it is recognized that until RxP is widely available, the experiential opportunities may be limited. In practice, most psychologists who complete the didactic training have chosen to delay the experiential component of their training until prescriptive authority or an appropriate clinical opportunity becomes available to them, especially since enabling legislation may define unique parameters for what represents acceptable clinical experiences (see the comparison of the Louisiana and New Mexico licensing laws in the next section). In the meantime, the Level 3 coursework is often used by graduates as preparation for collaborative (Level 2) activities.

The model curriculum calls for at least 400 contact hours of coursework. This number reflects a combination of the prerequisite coursework and the recommended 350 hours from the original model curriculum. In practice, programs typically require at least 450, to match a requirement in the New Mexico legislation enabling prescriptive authority. The curriculum document offers a number of other

recommendations, including a focus on diversity issues and preparation for lifelong learning, necessary conditions for the training environment, and development of a mechanism for designating a program as compliant with the model curriculum.

The revised model was adopted as APA policy last year “in principle” (Am. Psychol. Assoc. Council. Rep. 2008b) pending completion of the recommended designation system. Guidelines for this designation system—similar in goals but less demanding than accreditation, which is generally reserved for specialties—have recently been approved as association policy (Am. Psychol. Assoc. 2009) and are expected to be implemented within the next year.

Legislative and Regulatory Developments

The RxP movement’s first legislative victory is rarely mentioned, because it was of greater symbolic than practical value. In 1993, the licensing law for psychologists in Indiana was amended to allow prescriptive authority for psychologists participating in a “federal government sponsored training or treatment program” [see Indiana Code 25–33–1–2(c)]. The revision was intended to extend prescriptive authority to graduates of the PDP. It represented the first recognition by a state legislature that psychologists need not pursue training in a second profession to become competent to prescribe. To date, no psychologist has prescribed in Indiana and that situation is unlikely to change unless federal agencies dramatically increase their training and/or hiring of psychologists to prescribe.

In 1999, the U.S. Territory of Guam was the first jurisdiction to award prescriptive authority to appropriately trained psychologists (Guam Public Law 24–329). The legislation applied a physician’s assistant model to psychologists, requiring a collaborative agreement with a physician practicing in the same area of specialty. Subsequent political struggles over the regulations governing professions in the territory delayed the implementation of the statute

Table 2 2009 model curriculum for Level 3 training

Didactic content areas

I. Basic science

A. Anatomy and physiology

B. Biochemistry

II. Neurosciences

A. Neuroanatomy

B. Neurophysiology

C. Neurochemistry

III. Physical assessment and laboratory exams

A. Physical assessment

B. Laboratory and radiological assessment

C. Medical terminology and documentation

IV. Clinical medicine and pathophysiology

A. Pathophysiology with particular emphasis on cardiac, renal, hepatic, neurologic, gastrointestinal, hematologic, dermatologic, and endocrine systems

B. Clinical medicine, with particular emphasis on signs, symptoms, and treatment of disease states with behavioral, cognitive, and emotional manifestations or comorbidities

C. Differential diagnosis

D. Clinical correlations—the illustration of the content of this domain through case study

E. Substance-related and co-occurring disorders

F. Chronic pain management

V. Clinical and research pharmacology and psychopharmacology

A. Pharmacology

B. Clinical pharmacology

C. Pharmacogenetics

D. Psychopharmacology

E. Developmental psychopharmacology

F. Issues of diversity in pharmacological practice

VI. Clinical pharmacotherapeutics

A. Combined therapies—psychotherapy/pharmacotherapy interactions

B. Computer-based aids to practice

C. Pharmacoepidemiology

VII. Research

A. Methodology and design of psychopharmacological research

B. Interpretation and evaluation of research

C. FDA drug development and other regulatory processes

VIII. Professional, ethical, and legal issues

A. Application of existing law, standards, and guidelines to pharmacological practice

B. Relationships with pharmaceutical industry

1. Conflict of interest

2. Evaluation of pharmaceutical marketing practices

3. Critical consumer

(Continued)

Table 2 (Continued)

Supervised clinical experience competencies

1. Physical exam and mental status
2. Review of systems
3. Medical history interview and documentation
4. Assessment: indications and interpretation
5. Differential diagnosis
6. Integrated treatment planning
7. Consultation and collaboration
8. Treatment management

Adapted from Am. Psychol. Assoc. Council Rep. (2008b).

for many years. Those issues have finally been resolved, and psychologists from Guam are now completing their training in preparation for becoming prescribers.

Guam was followed in 2002 by New Mexico (New Mexico Administrative Code 16.22.20–16.22.29) and in 2004 by Louisiana (Louisiana Revised Statutes 37:2371–2378). One aspect of the latter bill has been particularly controversial, that being the use of the term “medical psychologist” to refer to psychologists with prescriptive authority. Some psychologists have objected that the term is confusing, as it has been used in connection with the field more commonly referred to as health psychology. The drafters of the bill thought it more accurately described the competencies (including knowledge of clinical medicine, physical examination, interpretation of laboratory tests, etc.) required for the psychologist to prescribe safely and effectively than the more restrictive term “prescribing psychologist.”

The New Mexico and Louisiana laws are similar in terms of their implications for didactic training. The primary difference is that the Louisiana licensing law requires that the didactic program lead to awarding of a master’s degree in psychopharmacology. Currently, the Alliant International University, Nova Southeastern University, New Mexico State University, Fairleigh Dickinson University, and Massachusetts School of Professional Psychology programs all offer a master’s degree. The New Mexico bill also stipulates a

program of at least 450 contact hours, but all current programs are consistent with that requirement.

The two laws differ most in their expectations for supervised clinical experience. Upon completion of the didactic training and passage of a competency examination, usually fulfilled via the PEP, Louisiana psychologists are immediately eligible for licensure as medical psychologists. The law replaced a supervised clinical experience with the requirement that the psychologist consult with the patient’s primary care physician prior to prescribing and change the prescription only with the concurrence of that physician. Medical psychologists in Louisiana cannot prescribe for a patient who does not have a primary care physician. This represents an unusual relationship between physicians and nonphysician providers. It does not establish the physician as the psychologist’s supervisor, as is commonly true for nurse practitioners and physician’s assistants. The psychologist maintains primary responsibility for the patient, and the physician involved may be different for every patient. Even so, the psychologist generally cannot prescribe without physician concurrence, though anecdotal reports suggest concurrence is rarely withheld in practice. One practical consequence of this model is that it allows the psychologist to become certified to prescribe relatively quickly upon completion of didactic training, and about 9% of all Louisiana licensed psychologists are authorized to prescribe. The omission of a formal practicum is

likely to remain an anomaly, however, as every other bill that has been introduced has required some sort of clinical supervision prior to independent practice.

In contrast, while the New Mexico legislation also required ongoing collaboration with the patient's primary care physician, though not necessarily concurrence with the treatment plan, it included very stringent clinical requirements. After the 450-hour didactic training and passing an examination such as the PEP, the psychologist must complete an 80-hour practicum in clinical assessment and pathophysiology and a 400-hour/100-patient practicum under the supervision of a physician. The psychologist is then eligible for a conditional prescribing certificate. After two more years of supervised experience the psychologist can apply for a prescription certificate that allows independent prescribing.

Though the legislation was passed two years earlier in New Mexico than in Louisiana, subsequent wrangling over the regulations in New Mexico slowed the process there to the point that the first prescription by a civilian psychologist was not written until 2005, and it was written in Louisiana. Although no other states have passed legislation since then, in the typical year, 7–8 states submit bills, and a recent tally suggested that to date 88 prescriptive authority bills have been submitted in 21 jurisdictions (Fox et al. 2009).

Fourteen jurisdictions have also explicitly identified consultation on medications (Level 2) as within the scope of practice of psychology, either through the licensing law, regulation, or a clarifying statement from the board of psychology: California, District of Columbia, Florida, Louisiana (for psychologists without prescriptive authority), Maine, Massachusetts, Missouri, New Hampshire, New Jersey, New York, Ohio, Oklahoma, Tennessee, and Texas. On the other hand, several states—including Connecticut, Maryland, Illinois, Colorado, Minnesota, and Virginia—have passed legislation prohibiting school personnel from recommending the use of psychotropic medications, and this would include any psychologist

employed by a school (Bentley & Collins 2006). Psychologists who discuss medication decision-making with their patients in other settings where the authority for such discussions has not been officially approved or denied should be aware that the legal or liability implications for doing so are ambiguous.

Changes have occurred in other settings besides the states. All three branches of the military that provide healthcare services have officially recognized prescribing psychologists as independent prescribers whether trained through the PDP or a civilian program, so long as they meet certain standards set independently by each branch. These requirements are generally consistent with those found in bills that have been submitted at the state level. Though the commanding officer for a military medical treatment facility can still refuse to award prescribing privileges to a psychologist, the inclusion in regulation makes such an outcome unlikely. As a result, the number of active-duty psychologists prescribing in the military has been slowly increasing, though the count has not been tallied. A review of the licensing rolls from New Mexico and Louisiana as well as anecdotal reports of psychologists prescribing in the military suggest that of the 1500 psychologists who have completed training in the civilian sector, about 90–100 are actively involved in prescribing across all settings where it is permitted.

Success in the military has spurred efforts in other federal agencies, particularly the U.S. Public Health Service Corps and the Indian Health Service. It was the Indian Health Service that first approved a psychologist to prescribe medications in 1988 in response to a shortage in the availability of appropriate psychiatric care in the Santa Fe, New Mexico, region. The Indian Health Service is now actively recruiting prescribing psychologists to address chronic gaps in the availability of appropriate care for individuals with mental disorders. These efforts have been less successful than desired because the scope of practice in the Public and Indian Health Services is determined by the state of the psychologist's licensure. This restricts the

pool of potential applicants to psychologists eligible to prescribe in Louisiana or New Mexico. Some Federally Qualified Health Centers, particularly in Hawaii, are also attempting to hire psychologists with postdoctoral training in psychopharmacotherapy even without prescriptive authority.

THE DEBATE OVER RxP

It is not surprising that organized medicine has adamantly opposed efforts to acquire prescriptive authority for psychologists. Though surveys tend to suggest 60% or more of healthcare psychologists are supportive of RxP for appropriately trained psychologists (e.g., Baird 2007, St.-Pierre & Melnyk 2004, Walters 2001), it is also not surprising that some psychologists have been equally vocal in their opposition. This section outlines the case for and against prescriptive authority. It focuses primarily on the issues of increased access versus safety, though other benefits and concerns are summarized as well. Note that many other arguments have been raised for or against RxP in the literature, but this review focuses on the most commonly raised issues.

Improving Access to Care

The primary justification offered for RxP is increased access to appropriate care (e.g., DeLeon & Wiggins 1996). The most common treatment setting for individuals with psychological disorders is a general medical practice without concomitant specialty services (Wang et al. 2006), and 75% of office visits that result in prescription of a psychotropic medication involved a nonpsychiatric physician (Pincus et al. 1998). It is reasonable to wonder whether such a high-level treatment by practitioners without specialty training would cause a national outcry if it involved less disadvantaged healthcare populations such as cardiac or cancer patients.

Despite the need, the number of psychiatrists is shrinking. Rao (2003) found a 36.5% decline in the number of psychiatric residents over the period 1992 to 2000. During the same

period, the percentage of psychiatric residents who were graduates of foreign medical schools increased from 27.3% to 41.6%, suggesting that interest in psychiatry among U.S. medical students is declining even faster. Shortages are particularly acute in rural settings (Hartley et al. 1999). Demand undoubtedly contributes to the dramatic increase in recent years in the percentage of office visits with a psychiatrist lasting less than 10 minutes (Olson et al. 1999) as well as to psychiatrists' declining use of more time-consuming psychosocial interventions (Mojtabai & Olson 2008), though these trends also reflect other factors such as pressure from managed care (Luhmann 2000, Paris 2008).

It has been argued in response that psychologists with prescriptive authority would be no more likely to locate in underserved and rural areas than psychiatrists are (e.g., Uecker 2009). Even so, the imbalance in the number of healthcare psychologists relative to psychiatrists is sufficient that RxP could markedly increase the number of prescribers with specialty training in psychological disorders. The U.S. Department of Labor *Occupational Outlook Handbook 2008–2009* (available at www.bls.gov/oco) estimated there were 150,000 healthcare psychologists in the country in 2006 versus 33,000 psychiatrists. In Louisiana, where psychologists were able to fulfill the requirements for authorization to prescribe quickly once the legislation passed, approximately 9% of all licensed healthcare psychologists are already prescribing as medical psychologists. If this statistic can be used as an estimate of the percentage of psychologists who would choose to become licensed to prescribe nationally, prescriptive authority for all psychologists would translate into a 41% increase in the availability of prescribers. According to Hartley et al. (1999), the per capita density of psychologists in rural areas is almost four times that of psychiatrists, so even in rural areas prescriptive authority for psychologists could increase the availability of prescribers by almost 35%. In a recent survey of 26 prescribing psychologists, respondents on average estimated 55% of their caseload

was economically, socially, linguistically, or otherwise disadvantaged, and this represented an increase of 20% in the number of cases from disadvantaged backgrounds since receiving prescriptive authority (Muse & McGrath 2010).

Recent RxP bills introduced in Hawaii, California, and Tennessee required service to underserved populations either during training or as an ongoing component of practice. This would be a desirable addition to any prescriptive authority bill.

Reducing Medication Use versus Loss of Identity

Supporters of RxP also commonly claim that prescribing psychologists are likely to use medications at a lower rate than are physicians, reducing instances of overmedication and polypharmacy (e.g., Am. Psychol. Assoc. Div. 55 Task Force Pract. Guidelines 2009). This argument is based on the assumption that physicians with little or no training in psychosocial interventions, whether used singly or in combination with medication, cannot evaluate when such interventions can offer a better alternative to medication alone. This claim has become a cornerstone of the RxP movement, often expressed in a slogan that has been attributed to Russ Newman, the former APA Executive Director for Professional Practice: “The power to prescribe is the power not to prescribe.” More recently, Mario Marquez, a prescribing psychologist in New Mexico, has suggested as an addendum, “The power to prescribe is the power to un prescribe,” to suggest that psychologists also hope to eliminate unnecessary medications as well as minimize their use in the first place.

To date, no systematic large-scale studies are available on the rate of medication use among prescribing psychologists when compared with psychiatrists or primary care physicians seeing the same population of patients. The ACNP final report (Am. Coll. Neuropsychopharmacol. 1998) indicated that PDP graduates varied markedly in their use of medications, with three

prescribing to less than 20% of their patients and four prescribing to more than 50%. The most relevant study to date on this question was completed under the auspices of American Biodyne, Inc., which offered mental health carve-out services (Wiggins & Cummings 1998). At that time, the company used psychologists who had received 130 hours of combined training in psychotherapy and pharmacotherapy as behavioral case managers. They found that in 1.64 million treatment episodes during the period 1988–1992, 68% of patients were taking psychotropic medications at the start of treatment, but only 13% were taking medication at its conclusion. Even so, the authors reported that the number of patients who complained about their medication management over the four years reviewed was zero. Though it was a very large-scale study, and the results are quite intriguing, it is uncertain to what extent those results would generalize to psychologists who actually serve as the prescribers, however.

Skeptics have questioned whether psychologists will be able to withstand the economic pressures created by managed care organizations and the interpersonal pressures brought by patients more comfortable with “quick fix” medications (Stuart & Heiby 2007). The argument suggests that prescribing psychologists may continue to behave in a manner consistent with their psychosocial roots during the early years of prescriptive authority, but over time will surrender to economic and social pressures and will drift into the practice patterns of psychiatrists. This concern over loss of identity, of going the way of psychiatry, represents a cornerstone of psychologists’ objections to prescriptive authority (e.g., DeNelsky 1996, Hayes & Heiby 1996) and should be taken quite seriously. McGrath (2004) suggested that several factors could provide psychologists resilience in the face of these pressures:

- Where psychopharmacology represents the bulk of psychiatric training, and of medical training in preparation for becoming a psychiatrist, psychologists’ training for prescriptive authority

remains postdoctoral. Delaying the training until the practitioner has developed an identity consistent with the traditional values of the healthcare psychologist reduces the likelihood that most psychologists will adopt the psychiatric model (McGrath et al. 2004). This model of training is more consistent with that of the advanced-practice nurse (APN), who is a nurse first and a prescriber second, rather than the psychiatrist. Though some psychologists have argued for providing psychopharmacology training in preparation for prescribing even at the doctoral level (e.g., Ax et al. 2009), the new training model promulgated by APA (Am. Psychol. Assoc. Council Rep. 2008b) explicitly maintains its status as a primarily postdoctoral—and even postlicensure—activity. A second consequence of this training model is prescribing psychologists are likely to remain a minority of healthcare psychologists, so the field will continue to be dominated by practitioners exclusively committed to psychosocial interventions, again paralleling the experience in nursing rather than psychiatry.

- Related to the first point, most healthcare psychologists were educated in psychological models beginning at the undergraduate level, and pursued a career in psychology based on their attraction to those traditions. In contrast, medical students are primarily interested in biological intervention. The difference in what attracted practitioners to their field in the first place will encourage a continued preference for psychosocial over biological case formulation and treatment. LeVine & Foster (2010) have similarly argued that psychologists with prescriptive authority are likely to adopt a psychobiosocial rather than a biopsychosocial model.
- Psychology as a discipline is broader than psychiatry. Where the latter is primarily an applied field, psychology encom-

passes a broad spectrum of domains, most of which are primarily academic in focus. Even if RxP becomes common in professional psychology, and even if prescribing psychologists were to become enamored with the power of medication through daily contact, there would be a large population of psychologists likely to remain skeptical about the effectiveness of medication and willing to conduct research that will undermine any irrational exuberance expressed by prescribers.

- Recent publications criticizing the regulatory process as a sufficient protection against medication safety risks (Lasser et al. 2002)⁴ as well as the role of the pharmaceutical industry in the dissemination of evidence on efficacy (e.g., Turner et al. 2008), and well-publicized efforts within medicine to self-police more effectively (e.g., see www.amsascorecard.org) have already undermined any irrational exuberance about medication psychologists may have experienced. Psychologists have an opportunity to learn from the mistakes committed by medicine.

None of this is to suggest that prescribing psychologists will be impervious to the pressures to eschew psychological treatments for medications, however. It is impossible to predict the long-term impact of RxP on the professional identity of healthcare psychologists (though supporters of RxP could point out there is similarly no way to predict the long-term viability of healthcare psychology and psychosocial interventions in general either). If psychologists fall prey to the pressures that medicalized psychiatry, then achieving prescriptive authority will have been a hollow victory. It is essential

⁴It is important to note that the frequency with which additional safety warnings are mandated after a medication is approved for sale cannot be rectified simply by improving the regulatory process. The incidence of many severe side effects is so low that they are statistically undetectable until the medication is made available to the public. The responsible prescriber should be aware of this unfortunate state of affairs and leery about assuming the safety of a new medication before it has been widely used.

for prescribing psychologists to establish practice patterns that integrate psychosocial and biological treatment approaches from the very beginning and to train future practitioners in an integrated treatment model. Practice guidelines for involvement in pharmacotherapy have been developed that, among other things, are intended to reject a traditional model of prescriptive practice for psychologists (Am. Psychol. Assoc. Div. 55 Task Force Pract. Guidelines 2009). These guidelines have recently been adopted as APA policy and are intended to cover psychologists' involvement in pharmacotherapy whether the psychologist is prescribing, collaborating, or providing information (the terminology that was adopted to describe psychologists' involvement in pharmacotherapy in an informal way). Criteria for evaluating the psychologist's level of involvement, and the guidelines that are relevant at each level of involvement, are indicated in **Table 3**. More details about the development and implications of these guidelines may be found in McGrath & Rom-Rymer (2010).

Other Potential Benefits to Patients

A number of other potential benefits to patients have been suggested by supporters of RxP (e.g., DeLeon et al. 1991, DeLeon & Wiggins 1996, Norfleet 2002). These include "one-stop shopping" for mental health services. With prescriptive authority, psychology becomes the only mental health profession capable of formal evaluation and diagnosis, implementation of a complete treatment plan, and outcomes assessment. It is argued that reducing the number of providers involved in patient care can result in both a cost savings, which is also likely to result simply from increasing the population of non-physician prescribers (Speer & Bess 2003), and improved integration of psychosocial and biological interventions. The choice of psychosocial, biological, or combined interventions is also more likely to be based on empirical results and patient variables than on the competencies of the primary provider. Opponents note that if healthcare psychology goes the way of

psychiatry, we will instead end up with a system in which psychosocial interventions are in danger of disappearing completely (e.g., Stuart & Heiby 2007).

Supporters also hypothesize that the frequency of contact and the nature of the relationship between psychotherapist and patient also places the psychologist in a much better position than other healthcare professionals to monitor the patient for adverse events and resistance to the treatment regimen. Finally, the medically trained psychologist is likely to be more adept than the traditionally trained psychologist at identifying pseudopsychiatric medical conditions, e.g., pediatric autoimmune neuropsychiatric disorders associated with streptococcal infections or autoimmune thyroid disease, and this skill will expedite referral for those conditions to appropriate healthcare providers.

Potential Benefits to Psychology

It is an unfortunate aspect of the healthcare system that status is often defined by the discipline's involvement in generally accepted biological interventions and hospital-based care. Supporters argue that prescribing psychologists have the potential to enhance the position of psychologists within the system (Forman 1992). Again, APNs can be used as the exemplar for this argument. By filling roles traditionally only open to physicians, APNs have enhanced the status of nurses generally and have been effective advocates for a more patient-centered model of care. It has also been suggested that this enhancement of status will allow psychologists to become more effective advocates on matters that affect the financial viability of the field in general, such as insurance reimbursement rates, hospital privileges for all psychologists, and rates at which patients are referred for psychological assessment.

Evidence in support of this argument may be found among the prescribing psychologists in Louisiana and New Mexico, who are already filling roles traditionally reserved for psychiatrists, such as providing psychiatric coverage for

Table 3 Practice guidelines for psychologists' involvement in pharmacological issues

	Relevant activities		
	Prescribing	Collaborating	Providing information ^a
Legal responsibility for decision-making	Yes	No	No
Involvement in decision-making	Yes	Yes	No
General			
Guideline 1. Psychologists are encouraged to consider objectively the scope of their competence in pharmacotherapy and to seek consultation as appropriate before offering recommendations about psychotropic medications.	X	X	X
Guideline 2. Psychologists are urged to evaluate their own feelings and attitudes about the role of medication in the treatment of psychological disorders, as these feelings and attitudes can potentially affect communications with patients.	X	X	X
Guideline 3. Psychologists involved in prescribing or collaborating are sensitive to the developmental, age and aging, educational, sex and gender, language, health status, and cultural/ethnicity factors that can moderate the interpersonal and biological aspects of pharmacotherapy relevant to the populations they serve.	X	X	
Education			
Guideline 4. Psychologists are urged to identify a level of knowledge concerning pharmacotherapy for the treatment of psychological disorders that is appropriate to the populations they serve and the type of practice they wish to establish, and to engage in educational experiences as appropriate to achieve and maintain that level of knowledge.	X	X	X
Guideline 5. Psychologists strive to be sensitive to the potential for adverse effects associated with the psychotropic medications used by their patients.	X	X	X
Guideline 6. Psychologists involved in prescribing or collaborating are encouraged to familiarize themselves with the technological resources that can enhance decision-making during the course of treatment.	X	X	
Assessment			
Guideline 7. Psychologists with prescriptive authority strive to familiarize themselves with key procedures for monitoring the physical and psychological sequelae of the medications used to treat psychological disorders, including laboratory examinations and overt signs of adverse or unintended effects.	X		
Guideline 8. Psychologists with prescriptive authority regularly strive to monitor the physiological status of the patients they treat with medication, particularly when there is a physical condition that might complicate the response to psychotropic medication or predispose a patient to experience an adverse reaction.	X		
Guideline 9. Psychologists are encouraged to explore issues surrounding patient adherence and feelings about medication.	X	X	X
Intervention and Consultation			
Guideline 10. Psychologists are urged to develop a relationship that will allow the populations they serve to feel comfortable exploring issues surrounding medication use.	X	X	X

(Continued)

Table 3 (Continued)

	Relevant activities		
	Prescribing	Collaborating	Providing information ^a
Legal responsibility for decision-making	Yes	No	No
Involvement in decision-making	Yes	Yes	No
Guideline 11. To the extent deemed appropriate, psychologists involved in prescribing or collaboration adopt a biopsychosocial approach to case formulation that considers both psychosocial and biological factors.	X	X	
Guideline 12. The psychologist with prescriptive authority is encouraged to use an expanded informed consent process to incorporate additional issues specific to prescribing.	X		
Guideline 13. When making decisions about the use of psychological treatments, pharmacotherapy, or their combination, the psychologist with prescriptive authority considers the best interests of the patient, current research, and when appropriate, the needs of the community.	X		
Guideline 14. Psychologists involved in prescribing or collaborating strive to be sensitive to the subtle influences of effective marketing on professional behavior and the potential for bias in information in their clinical decisions about the use of medications.	X	X	
Guideline 15. Psychologists with prescriptive authority are encouraged to use interactions with the patient surrounding the act of prescribing to learn more about the patient's characteristic patterns of interpersonal behavior.	X		
Relationships			
Guideline 16. Psychologists with prescriptive authority are sensitive to maintaining appropriate relationships with other providers of psychological services.	X		
Guideline 17. Psychologists are urged to maintain appropriate relationships with providers of biological interventions.	X	X	X

^aThis is the term adopted in the guidelines document to refer to instances where the psychologist plays no role in the decision-making process. It parallels the discussion in the educational literature on Level 1.

Adapted from Am. Psychol. Assoc. Div. 55 Task Force Pract. Guidelines (2009).

emergency rooms and training family practice residents in clinical psychopharmacology. If this enhanced status is used to increase awareness of psychosocial interventions and models and to encourage greater support for psychosocial research in funding agencies, prescriptive authority can redound positively to all healthcare psychologists.

Dual Training as an Alternative

Both physicians and psychologists opposed to prescriptive authority have recommended that if psychologists want to prescribe medications they should pursue a traditional training path leading to prescriptive authority, such as by

becoming a physician, nurse practitioner, or physician's assistant. The justification for this argument tends to vary across the two groups, however. Physicians speaking in opposition to RxP usually focus on issues of safe and effective prescribing (Lazarus 2004), while psychologists reference both the safety issue and concern over the impact of prescriptive authority on the identity of the psychologist (Heiby et al. 2004).

The concern over identity was discussed above, and the safety issue serves as the focus of the next section. Before addressing that issue, though, it should be noted that at least three arguments can be raised against dual training as the mechanism for achieving prescriptive authority. First, the development

of a specifically psychological approach to prescribing, one that focuses on the integration of psychosocial and biological interventions in case formulation, is considered by some to be a desirable goal in itself (Am. Psychol. Assoc. Div. 55 Task Force Pract. Guidelines 2009). This unique approach cannot be acquired through any traditional form of training. Second, it is an inefficient option, since much of the training for a traditional prescriber is devoted to topics that are tangential or even irrelevant to the treatment of individuals with psychological or behavioral issues, and few psychologists would pursue it. The solution therefore fails to address the core rationale for RxP, which is to increase the availability of prescribers specifically trained to address psychological disorders. Finally, the APA model curriculum focuses on prescribing the formulary of medications relevant to the treatment of psychological and behavioral disorders and associated medical competencies. This means that much more time can be devoted to that topic than is true for more generalist healthcare training such as that offered to other professions that prescribe psychotropics. A recent study of postdoctoral psychopharmacology training programs for psychologists concluded that psychologists are receiving more than three times as much coursework in pharmacology as are physicians and psychiatric nurse practitioners (Muse & McGrath 2009).

Concerns Over Safe and Adequate Care

After loss of identity, the most common concern raised by opponents of prescriptive authority has to do with the safety and adequacy of prescribing psychologists. Though stated in various ways, the issue has to do with whether psychologists will have enough training, even after completing the APA model curriculum, to prescribe medications appropriately (e.g., Robiner et al. 2003).

One problem with the safety argument is that it assumes an objective standard exists for minimal competence by which psychologists'

training in clinical psychopharmacology is insufficient. For example, physicians speaking in opposition to RxP often argue that only medical school training is sufficient to prescribe safely and adequately. However, this position is undermined by research demonstrating that outcomes for nurse practitioners and other non-physician prescribers are equivalent to those for physicians (Lenz et al. 2004, Mundinger et al. 2000, U.S. Congress Off. Technol. Assess. 1986).

A more reasonable critique of the current RxP training programs is offered by opponents of prescriptive authority within psychology. They tend to accept that the results of the PDP were positive and recognize that psychologists are not inherently incapable of being trained to prescribe. However, they question whether the PDP results provide a sufficient basis for assuming the safety and efficacy of civilian prescribers, who graduate from programs that usually require 450 hours versus the PDP's 660, and who are eligible to prescribe in more diverse settings and to more diverse populations than was true of the PDP graduates at the time they were evaluated.

The discussion over safety has been complicated by a lack of specificity in the arguments on both sides. The critics have never presented a formal justification for assuming that the entire 660 hours of the PDP curriculum were necessary to achieve safe and effective prescribing. Some have noted that the ACNP describes the PDP graduates as largely skeptical of attempts to abbreviate the training further. However, many of those graduates seem to have since changed their opinion: at least six of the ten have been involved as administrators and/or instructors in civilian programs of briefer duration than the PDP. Similarly, supporters of RxP who assume 450 hours is sufficient based on the PDP experience have failed to identify 210 hours that could be dropped from the PDP curriculum without affecting patient outcomes.

To advance the discussion, **Table 4** offers a rough comparison of the curricula for two well-known civilian programs offering RxP training with the final PDP curriculum across primary

Table 4 Comparison of training curricula

PDP			FDU			AIU			
Course	Hours	Totals	Course	Hours	Totals	Course	Hours	Totals	
<i>Anatomy/Physiology/Pathophysiology</i>									
Anatomy	48					Physical Assessment	36		
Clinical Medicine	121					Clinical Medicine/ Pathophysiology	60		
Physiology	39		Biological Foundations I	45					
Pathophysiology	60	268	Biological Foundations II	45	90	Neuroanatomy/ Neuropathology	36	132	
<i>Biochemistry/Neuroscience</i>									
Biochemistry	57					Clinical Biochemistry	24		
Neurosciences	54	111	Neuroscience	45	45	Neurochemistry Neurophysiology	24 24	72	
<i>Clinical Concepts</i>									
Introduction to Primary Care	56					Introduction to the Psychological Model	12		
Clinical Concepts	100	156	Professional Issues	45	45	Pharmacotherapeutics	36	48	
<i>Pharmacology/Psychopharmacology</i>									
			Neuropharmacology	45					
			Clinical Pharmacology	45		Pharmacology	30		
Pharmacology	83		Affective Disorders	45		Clinical Pharmacology	30		
Clinical	21		Psychotic Disorders	45		Psychopharmacology	48		
Pharmacology			Anxiety Disorders	45		Special Populations	60		
Psychopharmacology	21	125	Other Disorders	45	270	Chemical Dependence	12	180	
<i>Global</i>									
							PEP Course	18	18

Abbreviations: AIU, Alliant International University; FDU, Fairleigh Dickinson University; PDP, Psychopharmacology Demonstration Project; PEP, Psychopharmacology Examination for Psychologists.

content domains. The PDP model was much more consistent with traditional medical training, focusing extensively on basic clinical concepts and clinical medicine. In contrast, the civilian programs are more clearly focused on training specific to prescribing. It can be debated to what extent the greater emphasis in the PDP program on clinical concepts and biochemistry contributed to basic competence as a prescriber. The greater emphasis on clinical medicine and pathophysiology more clearly represents a basis for questioning the consistency between PDP and civilian training. On the other hand, it is likely that a good deal of the additional time civilian programs devote to pharmacology and psychopharmacology

focuses on elements of clinical medicine as they apply specifically to pharmacological practice.

The comparison in **Table 4** also ignores differences in experiential learning. It was noted above that all bills that have been submitted, except for Louisiana's, require some kind of supervised clinical experience, but the degree to which this experience is consistent with that provided by the PDP is also a topic of debate. The absence of an objective standard defining the necessary and sufficient conditions for safe and effective prescribing, as well as threats to the external validity of the PDP noted above in the summary of the ACNP report (Am. Coll. Neuropsychopharmacol. 1998), raises reasonable concerns about the results of that program

as a proxy for civilian prescribing (Bush 2002, Robiner et al. 2002).

A second approach would identify factors that contribute to unsafe or ineffective prescriptive practice and evaluate how psychologists' training prepares them for dealing with those factors in comparison with other prescribing professions. The greatest risks to safety involve medication errors and inaccurate diagnosis of medical conditions. The issue of medication errors in psychopharmacotherapy has been the topic of several studies. It has been estimated that serious medication errors occur at a rate of 1 per 1000 prescriptions and on 6 of every 1000 inpatient days in psychiatric settings (Rothschild et al. 2007, Stubbs et al. 2006). The best protection against such errors may not be additional coursework during the initial training experience—especially given the rate at which new information about medications is becoming available—but rather (*a*) regular high-quality continuing education, (*b*) access to electronic resources that provide current information about medications, (*c*) software that checks for possible prescription errors or drug interactions, and (*d*) regular monitoring of the patient in an environment that encourages full disclosure.

The first three resources are equally available to all the prescribing professions and are already used extensively by APNs, physicians, and pharmacists. Continuing education is mandated in most if not all RxP bills that have been submitted, and familiarization with electronic tools is incorporated into the APA model curriculum. The last factor might be taken as suggesting that prescribing psychologists who are also providing psychotherapy are in a particularly strong position to avoid medication errors; in fact, even supporters of RxP have at times considered whether psychologists' prescriptive practice should be limited to their own psychotherapy patients. Such a model would undermine the primary reason for pursuing RxP, however, which is to increase access to appropriately trained prescribers. Even when the prescribing psychologist is not providing therapy, it is reasonable to hypothesize

that psychologists whose psychotherapy training emphasizes the formation of a therapeutic alliance should be at least as effective as other prescribing professionals at establishing the type of environment in which patients feel comfortable sharing their concerns about their medications.

The second risk factor, inaccurate diagnosis of medical conditions, requires sufficient training in clinical medicine, including exposure to a diverse patient population. As **Table 4** suggests, civilian programs based on the APA model curriculum can be criticized for the level of training they offer in this area. However, it must be noted that while any physician is expected to be competent to serve as the primary medical provider for the patient, there is no similar expectation for psychologists. Both states that license psychologists to prescribe recognize this issue and require continuing collaboration with the primary care provider (though the APA model legislation may be faulted for not including such a requirement). It is noteworthy in light of this discussion that research consistently indicates that psychiatrists rarely perform physical examinations (Krummel & Kathol 1987, Patterson 1978), suggesting they also tend to develop collaborative relationships with other medical providers.

One may similarly argue that the greatest obstacles to effective care with psychotropics are inaccurate diagnosis of psychological disorders and inadequate monitoring. In both of these domains the prescribing psychologist offers a clear advantage over primary care physicians without specialty training in either diagnosis or the use of psychotropic medications.

The preceding discussion represents only a logical argument for the safety and effectiveness of prescribing psychologists. Ultimately, questions about safety and effectiveness will only be resolved, if at all, by evaluating psychologists' prescribing behavior under more varied conditions than those described in the evaluations of the PDP. Unfortunately, there is a catch-22 here, in that such evaluations cannot occur until psychologists are authorized to

prescribe. Expansion of scope of practice for any profession always precedes rather than follows from investigations into the profession's safety and effectiveness. Since the number of prescribing psychologists has only recently started to rise, currently available information is anecdotal, unsystematic, and incomplete. That said, results from those sources are so far positive. Psychologists have now been prescribing in the military for 15 years. It is estimated that civilian prescribers have already written hundreds of thousands of prescriptions (Glenn Ally, personal communication, Feb. 9, 2009), though in New Mexico many of those prescriptions would have been written under physician supervision. To date, no serious adverse events have been recorded as resulting from a psychologist's prescribing; no complaint has ever been lodged against a psychologist prescribing in the military or with the state licensing board in either Louisiana or New Mexico; and no malpractice complaints have been filed. This record includes psychologists trained in PDP and civilian programs who have served in both Iraq and Afghanistan, in far more chaotic settings than those described in the PDP evaluations. In one case, a prescribing psychologist even received the Bronze Star for meritorious clinical service, and his ability to prescribe was noted in the citation.

One final variant of the safety argument should be mentioned. Given that the training is occurring postlicensure, so that participants typically already are employed full-time and are geographically dispersed, it is not surprising that programs rely heavily on distance education as a method of instruction. Though the issue does not seem to appear in the published literature on the topic, reports suggest that in legislative hearings, opponents of prescriptive authority have at times disparaged distance training as a means of delivering the didactic training in preparation to prescribe. In response to this concern it may be noted that, at least in terms of learning outcomes, distance education courses tend to slightly outperform traditional didactic instruction (Allen et al. 2004), and medical schools are also increasingly

relying upon distance education in their training (see www.ivimeds.org).

Other Objections

A number of other objections have been raised to prescriptive authority, many of which are summarized by Stuart & Heiby (2007) in a recent article. This section takes each of the main arguments the authors present that have not already been discussed and considers how supporters of RxP would respond to each.

Enhanced training in psychotropic medications for general practice physicians offers a more cost-effective way to improve services. This argument assumes general practitioners' willingness to become competent prescribers for the mental health population. It is unclear to what extent this is actually the case. One document cited by Stuart & Heiby (2007), in which the Society of Teachers of Family Medicine Group on Pharmacotherapy (Bazaldua et al. 2005) offers recommendations for training family practice residents in pharmacotherapy, provides some insight into the question. They noted that more than 60% of family medicine residency programs have no formal pharmacotherapy curriculum at all. Furthermore, 82.4% of programs that incorporate a formal curriculum use a clinical pharmacist to teach the course. It is particularly noteworthy that every author of the report was a doctor of pharmacy; not one family practitioner was involved, suggesting family physicians are not particularly interested in adding pharmacotherapy as a core competency. In the absence of evidence that physicians intend to enhance their training in pharmacotherapy, the argument for using physicians more effectively as an alternative to RxP is purely hypothetical.⁵

⁵ Similarly, in legislative hearings on RxP bills, physicians often acknowledge the problem with access to appropriate prescriptive care, but raise various forms of telemedicine and/or additional training of primary care physicians as alternatives. I am unaware of any state where physicians have formally pursued such efforts once the RxP bill fails to pass the legislature.

Even if family practitioners were to enhance their formal training in prescriptive practice, it is unlikely that training would exceed the 48 hours Bazaldua et al. (2005) recommended to cover all of pharmacotherapy, not just psychotropics. If one questions whether psychologists can become competent to prescribe after 450 hours of medical training, one must also question whether general practitioners can become competent in psychopharmacotherapy in a small portion of 48 hours of training. One might even argue that, just as psychologists should be required to collaborate with a physician when treating a patient medically, primary care physicians should have to collaborate with a mental health professional when treating a patient with psychological disorders.

Declining reliance on psychotherapy is best addressed by improving the effectiveness of traditional psychological intervention and by educating prospective patients about their benefits.

As noted previously, supporters of RxP often suggest the power to prescribe will enhance psychologists' authority and ability to influence the healthcare system, to drive more funding toward the evaluation and improvement of psychosocial interventions and bring those interventions to the forefront of discussions of patient care. Previous comments on the role of APNs in advocating for addressing patients' psychosocial needs apply here as well. For example, so long as treatment guidelines are written exclusively by individuals who are personally comfortable only with biological interventions, treatment guidelines are likely to reflect that bias.

Other negative consequences. Stuart & Heiby (2007) described various circumstances in which responsibility for medication management could have negative consequences, e.g., by reducing the time available for psychotherapy, reducing collaboration with other professionals, or disrupting relationships with some physicians. It is important to recognize their point that RxP will inevitably create new challenges and could in certain cases interfere with

patient treatment; thoughtful supporters of prescriptive authority have made the same point (Mantell et al. 2004). The more important issue is whether there will be a net benefit in patient care resulting from RxP.

One other point raised by supporters of prescriptive authority in response to its critics is that many of these objections are predicated on the assumption that the status quo in pharmacotherapy is better than the risks created by pursuing prescriptive authority (Wiggins 2004). That assumption is likely to be accurate in settings where adequate pharmacotherapy services exist, and this factor may explain why it is that many of the most vocal critics of RxP within psychology work in integrated healthcare settings such as medical centers. The assumption is more questionable in settings where adequate care is difficult if not impossible to access, which similarly explains why it is that many of the most vocal advocates of RxP have some involvement in rural mental health care. Supporters of prescriptive authority have also noted that since it is a postdoctoral option, psychologists working in settings where prescriptive services are already adequate need not pursue it. In contrast, opposition to prescriptive authority for all psychologists interferes with psychologists functioning in suboptimal settings using RxP as an efficient means of improving those settings. Brian Bigelow, an Ontario psychologist, perhaps expressed this position best: "I understand you do not wish to prescribe. Do you mind if I do?" Opponents in multidisciplinary settings have in turn argued that advocacy for the RxP agenda can undermine the interdisciplinary relationships that make effective care feasible in those settings (Stuart & Heiby 2007), though they provide no evidence that this has been the case in New Mexico and Louisiana; in fact, anecdotal reports indicate such conflict tends to abate once prescriptive authority is achieved.

One final concern that was not mentioned by Stuart & Heiby (2007), but which is very frequently raised in discussions with practicing psychologists about RxP, has to do with whether prescriptive authority will raise malpractice rates for psychologists in general. That

concern was allayed with the announcement by the APA Insurance Trust that it would treat prescribing psychologists as a separate risk pool. Prescriptive authority will have no impact on the malpractice rates of nonprescribing psychologists who use the Insurance Trust (Bruce Bennett, Chief Executive Officer of the APA Insurance Trust, personal communication, Aug. 7, 2009).

CONCLUSIONS

Strong arguments have been presented both supporting and opposing prescriptive authority for psychologists. Perhaps the most compelling argument in favor of RxP is the potential for enhancing the quality of services provided to individuals with psychological and behavioral disorders. It is also argued that allowing psychologists a greater role in the design and implementation of healthcare systems will improve access to and social support for psychosocial interventions. The most serious concerns associated with RxP have to do with the potential for co-optation of the profession by managed care, pressures to prescribe, and the hunt for an easy solution; and concerns about whether psychologists will be safe and effective prescribers. These are serious objections. In particular, the concern about loss of identity should not be taken lightly given what psychologists have seen happen to psychiatry, though various responses have been offered to suggest why psychologists are less likely to go down the same road.

The situation is not that different from the one psychology faced at the end of World War II in response to what was perceived as a shortage of adequate mental health care. David Shakow (1965), who headed the committee that developed the first formal training model in clinical psychology for APA, discussed the virulent objections to the effort among psychologists he referred to as experimentalists: "In many places there was indifference. And in most places active antagonism was the most characteristic response. . . . I have spoken of this attitude as the naïve division of the world into two

categories: virgins and prostitutes. The experimentalists saw themselves safely within the first group" (Shakow 1965, p. 356).

The truth was that the defenders of virginity were in a way correct: The founding of clinical psychology profoundly changed the nature of psychology, and it is not necessarily the case that all change was for the better. Students of clinical psychology today are undoubtedly far less familiar with the intricacies of learning theory than are psychology students of the 1940s. The focus on patient care and the survival of the profession have similarly changed the tenor of the APA.

Furthermore, every argument that has been leveled against RxP could have been applied to the movement for healthcare psychology. There was no evidence that psychologists would be safe clinicians; even the efficacy of psychotherapy was in doubt and remained so until the advent of meta-analyses. If psychologists wanted to become therapists they could have sought additional training as psychiatrists. The addition of psychotherapy to the skills set of the psychologist in clinical settings meant there was less time for psychological assessment, there would be less interdisciplinary collaboration between therapists and assessors, and, at least for a time, relations were strained between the two professions.

So there was clear justification for concern. The issue was not whether changing psychology would be associated with risks, since substantive change is always associated with risk; the issue was whether those changes were worth it. I hope most psychologists involved in healthcare today would say they were, but that position was very tenuous when the change was first proposed.

Similarly, there is no logical conclusion possible to the current controversy over prescriptive authority for psychologists. Even if both sides agree there are risks associated with prescriptive authority, advocates and opponents will differ on whether those risks represent challenges to be faced or grounds for abandoning the cause, and no one can predict which will prove to be the case. A quote by Max Planck

about science, popularized by Kuhn (1970, p. 151), provides important insight into how such decisions are made: “a new scientific truth does not triumph by convincing its opponents and making them see the light, but rather because its opponents eventually die, and a new generation grows up that is familiar with it.”⁶ Dissension was also common in other professions prior to achieving prescriptive authority (Wallis & Wedding 2004); an optometrist colleague who was involved in the very first discussion of prescriptive authority for their discipline once told me that meeting occurred in secret for fear of the backlash it would provoke among optometrists. Today, optometrists have prescriptive authority in all 50 states. New entrants to the field treat it as a given, think little about its implications for their professional identity, and continue to pursue enhancement of their prescriptive authority.

For good or ill, then, the “truth” of RxP will be determined politically: either it will

win in the legislatures or fade away. With passage in New Mexico and Louisiana, and new psychologists prescribing in the military and the Public and Indian Health Services, the latter outcome becomes increasingly unlikely unless the performance of this first generation of non-PDP prescribers brings shame upon the enterprise. Historically, when a profession has attempted to expand its scope of practice to include activities previously restricted to physicians, that expansion has usually been accomplished once it was achieved in one setting.

Change is scary; change is risky; and change is inevitable. Not all change is for the better, but major change is not necessarily for the worse. If we are to avoid the serious risks associated with RxP, change must be approached mindfully, with the goal of maximizing outcomes. It will require ego, not id, and a good helping of superego if we are to have any hope of doing it right.

SUMMARY POINTS

1. Efforts to achieve prescriptive authority for psychologists have now been underway for 15 years.
2. Despite appropriate reservations, evaluations of the first prescribing psychologists in the military were consistently positive.
3. Psychologists have identified three levels of involvement in pharmacotherapy, from basic to collaborative to prescriptive authority.
4. Though no states have authorized psychologists to prescribe since 2004, psychologists continue to expand the settings in which they can prescribe.
5. Justifications for prescriptive authority for psychologists include increasing access to appropriate care, reducing overall use of medication, integrating mental health care in a single provider, and enhancing the role of psychologists within the healthcare system.
6. Major arguments against prescriptive authority include concerns about loss of the traditional identity of the psychologist and the safety and efficacy of psychologist prescribers.
7. Arguments over the advisability of pursuing prescriptive authority ultimately will not be resolved by logic but rather by the success or failure of efforts to prescribe.

⁶Ironically, Planck himself died having never fully accepted quantum theory.

DISCLOSURE STATEMENT

The author is not aware of any affiliations, memberships, funding, or financial holdings that might be perceived as affecting the objectivity of this review.

ACKNOWLEDGMENTS

I am grateful to Glenn Ally, Deborah Bernstein, Elaine Heiby, and Richard Stuart for their comments on previous drafts of this manuscript. Of course, all opinions and claims expressed are my own and should not be assumed to be those of my colleagues.

LITERATURE CITED

- Allen M, Mabrey E, Mattrey M, Bourhis J, Titsworth S, Burrell N. 2004. Evaluating the effectiveness of distance learning: a comparison using meta-analysis. *J. Commun.* 55:402–20
- Am. Coll. Neuropsychopharmacol. 1998. *DoD Prescribing Psychologists: External Analysis, Monitoring, and Evaluation of the Program and its Participants*. Nashville, TN: Am. Coll. Neuropsychopharmacol.**
- Am. Psychol. Assoc. 1986. *Psychologists' Use of Physical Procedures Task Force Report*. Washington, DC: Am. Psychol. Assoc.
- Am. Psychol. Assoc. 2009. *Policies and Procedures for the Designation of Postdoctoral Education and Training Programs in Psychopharmacology in Preparation for Prescriptive Authority*. Washington, DC: Am. Psychol. Assoc.
- Am. Psychol. Assoc. Board Educ. Affairs Working Group Psychopharmacol. Educ. Training. 1997. *Curriculum for Level 2 Training in Psychopharmacology: Curriculum for Psychopharmacological Training for Particular Populations Using a Collaborative Practice Model*. Washington, DC: Am. Psychol. Assoc.
- Am. Psychol. Assoc. Board of Professional Affairs. 1981. *Task Force Report: Psychologists' Use of Physical Interventions*. Washington, DC: Am. Psychol. Assoc.
- Am. Psychol. Assoc. Council Rep. 1996. *Recommended Postdoctoral Training in Psychopharmacology for Prescription Privileges*. Washington, DC: Am. Psychol. Assoc.
- Am. Psychol. Assoc. Council Rep. 2008a. *Principles for the Recognition of Proficiencies in Professional Psychology*. Washington, DC: Am. Psychol. Assoc.
- Am. Psychol. Assoc. Council Rep. 2008b. *Recommended Postdoctoral Education and Training Program in Psychopharmacology for Prescriptive Authority*. Washington, DC: Am. Psychol. Assoc.**
- Am. Psychol. Assoc. Div. 55 Task Force Practice Guidelines. 2009. *Guidelines Regarding Psychologists' Involvement in Pharmacological Issues*. Washington, DC: Am. Psychol. Assoc.**
- Am. Psychol. Assoc. Practice Org. 2007. *PEP Performance: Postdoctoral Psychopharmacology Training Programs 2000–2007*. Washington, DC: Am. Psychol. Assoc.
- Ax RK, Fagan TJ, Resnick RJ. 2009. Predoctoral prescriptive authority training: the rationale and a combined model. *Psychol. Serv.* 6:85–95
- Baird KA. 2007. A survey of clinical psychologists in Illinois regarding prescription privileges. *Prof. Psychol. Res. Pract.* 38:196–202
- Bazaldua O, Ables AZ, Dickerson LM, Hansen L, Harris I, et al. 2005. Suggested guidelines for pharmacotherapy curricula in family medicine residency training: recommendations from the Society of Teachers of Family Medicine Group on Pharmacotherapy. *Fam. Med.* 37:99–104
- Bentley KJ, Collins KS. 2006. Psychopharmacological treatment for child and adolescent mental disorders. In *The School Services Sourcebook: A Guide for School-Based Professionals*, ed. C Franklin, MB Harris, P Allen-Meares, pp. 15–30. New York: Oxford Univ. Press
- Bush JW. 2002. Prescription privileges: comments on Robiner et al. *Clin. Psychol.* 9:443–47
- Comm. Training Clin. Psychol. Am. Psychol. Assoc. 1947. Recommended graduate training program in clinical psychology. *Am. Psychol.* 2:539–58
- Daly R. 2007. Too few clinicians complicate care in VA, military systems. *Psychiatr. News* Nov. 2:1

Provided the most detailed evidence available that the Psychopharmacology Demonstration Project generated competent prescribers.

Outlines current standards for training in preparation for prescriptive authority.

Attempts to outline a psychological model of involvement in pharmacological practice. It is currently in draft form.

- DeLeon PH, Fox RE, Graham SR. 1991. Prescription privileges: psychology's next frontier? *Am. Psychol.* 46:384–93
- DeLeon PH, Wiggins JG Jr. 1996. Prescription privileges for psychologists. *Am. Psychol.* 51:225–29
- DeNelsky GY. 1996. The case against prescription privileges for psychologists. *Am. Psychol.* 51:207–11
- Engel GL. 1977. The need for a new medical model: a challenge for biomedicine. *Science* 196:129–36
- Forman BD. 1992. Prescription privileges: the marketing view. *Psychother. Bull.* 27:14
- Fox RE. 2003. Early efforts by psychologists to obtain prescriptive authority. In *Prescriptive Authority for Psychologists: A History and Guide*, ed. MT Sammons, RU Paige, RF Levant, pp. 33–45. Washington, DC: APA Books
- Fox RE, DeLeon PH, Newman R, Sammons MT, Dunivin DL, Baker DC. 2009. Prescriptive authority and psychology: a status report. *Am. Psychol.* 64:257–68
- Hartley D, Bird D, Dempsey P. 1999. Rural mental health and substance abuse. In *Rural Health in the United States*, ed. TC Ricketts, pp. 159–78. New York: Oxford Univ. Press
- Hayes SC, Heiby E. 1996. Psychology's drug problem: Do we need a fix or should we just say no? *Am. Psychol.* 51:198–206
- Heiby EM, DeLeon PH, Anderson T. 2004. A debate on prescription privileges for psychologists. *Prof. Psychol. Res. Pract.* 35:336–44
- Kilbey MM, Brown RT, Coursey RD, Eisdorfer C, France C, et al. 1995. *Final Report of the BEA Working Group to Develop a Level I Curriculum for Psychopharmacology Education and Training.* <http://www.apa.org/ed/Level1Curriculumnew.pdf>
- Krummel S, Kathol RG. 1987. What you should know about physical evaluations in psychiatric patients: results of a survey. *Gen. Hosp. Psychiatry* 9:275–79
- Kuhn TS. 1970. *The Structure of Scientific Revolutions*. Chicago: Univ. Chicago Press. 2nd ed.
- Lasser KE, Allen PD, Woolhandler SJ, Himmelstein DU, Wolfe SM, Bor DH. 2002. Timing of new black box warnings and withdrawals for prescription medications. *JAMA* 287:2215–20**
- Lazarus JA. 2004. Implications for medication errors and patient safety. *Psychiatr. Serv.* 55:1423–24
- Lenz ER, Munding MO, Kane RL, Hopkins SC, Lin SX. 2004. Primary care outcomes in patients treated by nurse practitioners or physicians: two-year follow-up. *Med. Care Res. Rev.* 61:332–51
- LeVine E, Foster E. 2010. Integration of psychotherapy and pharmacotherapy by prescribing/medical psychologists: a psychobiosocial model of care. See McGrath & Moore 2010. In press
- Luhrmann TM. 2000. *Of Two Minds: The Growing Disorder in American Psychiatry*. New York: Knopf
- Mantell EO, Ortiz SO, Planthara PM. 2004. What price prescribing? A commentary on the effect of prescription authority on psychological practice. *Prof. Psychol. Res. Pr.* 35:164–69
- McGrath RE. 2004. Saving our psychosocial souls. *Am. Psychol.* 59:644–45
- McGrath RE, Moore BA, eds. 2010. *Professional Issues in Pharmacotherapy for Psychologists*. Washington, DC: APA Books. In press
- McGrath RE, Rom-Rymer BN. 2010. Optimal practice in pharmacotherapy for psychologists. See McGrath & Moore 2010. In press
- McGrath RE, Wiggins JG, Sammons MT, Levant RF, Brown A, Stock W. 2004. Professional issues in pharmacotherapy for psychologists. *Prof. Psychol. Res. Pract.* 35:158–63
- Mojtabai R, Olfson M. 2008. National trends in psychotherapy by office-based psychiatrists. *Arch. Gen. Psychiatry* 65:962–70
- Munding MO, Kane RL, Lenz ER, Totten AM, Tsai WY, et al. 2000. Primary care outcomes in patients treated by nurse practitioners or physicians: a randomized trial. *JAMA* 283:59–68
- Muse M, McGrath RE. 2009. Training comparison among three professions prescribing psychoactive medications: psychiatric nurse practitioners, physicians, and pharmacologically-trained psychologists. *J. Clin. Psychol.* In press
- Muse M, McGrath RE. 2010. Making the case for prescriptive authority. See McGrath & Moore 2010. In press
- Newman R, Phelps R, Sammons MT, Dunivin DL, Cullen EA. 2000. Evaluation of the Psychopharmacology Demonstration Project: a retrospective analysis. *Prof. Psychol. Res. Pract.* 31:598–603
- Norfleet MA. 2002. Responding to society's needs: prescription privileges for psychologists. *J. Clin. Psychol.* 58:599–610

Demonstrates inherent limitations to the Food and Drug Administration procedures as a basis for determining the safety of medications.

Describes the evolution of psychiatry into its current strongly biomedical form.

Summarizes important changes in access to psychiatrists in the coming years.

Provides a good, current synopsis of arguments against prescriptive authority.

This review of the literature found little evidence of difference in outcomes between physicians and nonphysician providers.

- Olfson M, Marcus SC, Pincus HA. 1999. Trends in office-based psychiatric practice. *Am. J. Psychiatry* 156:451–57
- Paris J. 2008. *Prescriptions for the Mind: A Critical View of Contemporary Psychiatry*. London: Oxford Univ. Press
- Patterson CW. 1978. Psychiatrists and physical examinations: a survey. *Am. J. Psychiatry* 135:967–68
- Pincus HA, Tanielian TL, Marcus SC, Olfson M, Zarin DA, et al. 1998. Prescribing trends in psychotropic medications: primary care, psychiatry, and other medical specialties. *JAMA* 279:526–31
- Rao NR. 2003. Recent trends in psychiatry residency workforce with special reference to international medical graduates. *Acad. Psychiatry* 27:269–76
- Resnick RJ, DeLeon PH, VandenBos GR. 1997. Evolution of professional issues in psychology: training standards, legislative recognition, and boundaries of practice. In *Basic Skills and Professional Issues in Clinical Psychology*, ed. JR Matthews, CE Walker, pp. 281–303. Needham Heights, MA: Allyn & Bacon
- Robiner WN, Bearman DL, Berman M, Grove WM, Colón E, et al. 2002. Prescriptive authority for psychologists: a looming health hazard? *J. Clin. Psychol.* 9:231–48
- Robiner WN, Bearman DL, Berman M, Grove WM, Colón E, et al. 2003. Prescriptive authority for psychologists: despite deficits in education and knowledge? *J. Clin. Psychol. Med. Settings* 10:211–12
- Rothschild JM, Mann K, Keohane CA, Williams DH, Foskett C, et al. 2007. Medication safety in a psychiatric hospital. *Gen. Hosp. Psychiatry* 29:156–62
- Sammons MT, Brown AB. 1997. The Department of Defense Psychopharmacology Demonstration Project: an evolving program for postdoctoral education in psychology. *Prof. Psychol. Res. Pract.* 28:107–12
- Shakow D. 1965. Seventeen years later: clinical psychology in light of the 1947 Committee on Training in Clinical Psychology report. *Am. Psychol.* 20:353–62
- Smyer MA, Balster RL, Egli D, Johnson DL, Kilbey MM, et al. 1993. Summary of the report of the Ad Hoc Task Force on Psychopharmacology of the American Psychological Association. *Prof. Psychol. Res. Pract.* 24:394–403
- Speer A, Bess D. 2003. Evaluation of compensation of nonphysician providers. *Am. J. Health Syst. Pharm.* 60:78–80
- St.-Pierre ES, Melnyk WT. 2004. The prescription privilege debate in Canada: the voices of today's and tomorrow's psychologists. *Can. Psychol.* 45:284–92
- Stuart RB, Heiby EM. 2007. To prescribe or not to prescribe: eleven exploratory questions. *Sci. Rev. Ment. Health Pract.* 5:4–32
- Stubbs J, Haw C, Taylor D. 2006. Prescription errors in psychiatry—a multi-center study. *J. Psychopharmacol.* 20:553–61
- Turner EH, Matthews AM, Linardatos E, Tell RA, Rosenthal R. 2008. Selective publication of antidepressant trials and its influence on apparent efficacy. *N. Engl. J. Med.* 358:252–60
- Uecker J. 2009. Safeguard the first rule of medicine: granting psychologists prescribing authority is not in patients' best interests. *Minnesota Med.* <http://www.minnesotamedicine.com/PastIssues/April2009/CommentaryApril2009/tabid/2934/Default.aspx>
- U.S. Congress Off. Technol. Assess. 1986. *Nurse Practitioners, Physician Assistants, and Certified Nurse-Midwives: A Policy Analysis (Health Technology Case Study 37), OTA-HCS-37*. Washington, DC: U.S. Gov. Print. Off.
- U.S. Gen. Account. Off. 1997. *Defense Health Care: Need for More Prescribing Psychologists Is Not Adequately Justified (GAO/HEHS-97-83)*. Washington, DC: U.S. GAO
- U.S. Gen. Account. Off. 1999. *Prescribing Psychologists: DoD Demonstration Participants Perform Well But Have Little Effect on Readiness or Costs (GAO/HEHS-99-98)*. Washington, DC: U.S. GAO
- Vector Res. Inc. 1996. Cost-effectiveness and feasibility of the DoD Psychopharmacology Demonstration Project: final report. Arlington, VA: Vector Res. Inc.
- Wallis N, Wedding D. 2004. The battle for the use of drugs for therapeutic purposes in optometry: lessons for clinical psychology. *Prof. Psychol. Res. Pract.* 35:323–28
- Walters GD. 2001. A meta-analysis of opinion data on the prescription privilege debate. *Can. Psychol.* 42:119–25

- Wang PS, Demler O, Olfson M, Pincus HA, Wells KB, Kessler RC. 2006. Changing profiles of service sectors used for mental health care in the United States. *Am. J. Psychiatry* 163:1187–98
- Wiggins JG. 1992. The case for prescription privileges for psychologists. *Psychother. Priv. Pract.* 11:3–8
- Wiggins JG. 2004. Beyond medication errors. *Psychiatr. Serv.* 55:1421–22
- Wiggins JG, Cummings NA. 1998. National study of the experience of psychologists with psychotropic medication and psychotherapy. *Prof. Psychol. Res. Pract.* 29:549–52



Contents

Personality Assessment from the Nineteenth to Early Twenty-First Century: Past Achievements and Contemporary Challenges
James N. Butcher 1

Prescriptive Authority for Psychologists
Robert E. McGrath 21

The Admissibility of Behavioral Science Evidence in the Courtroom: The Translation of Legal to Scientific Concepts and Back
David Faust, Paul W. Grimm, David C. Abern, and Mark Sokolik 49

Advances in Analysis of Longitudinal Data
Robert D. Gibbons, Donald Hedeker, and Stephen DuToit 79

Group-Based Trajectory Modeling in Clinical Research
Daniel S. Nagin and Candice L. Odgers 109

Measurement of Functional Capacity: A New Approach to Understanding Functional Differences and Real-World Behavioral Adaptation in Those with Mental Illness
Thomas L. Patterson and Brent T. Mausbach 139

The Diagnosis of Mental Disorders: The Problem of Reification
Steven E. Hyman 155

Prevention of Major Depression
Ricardo F. Muñoz, Pim Cuijpers, Filip Smit, Alinne Z. Barrera, and Yan Leykin 181

Issues and Challenges in the Design of Culturally Adapted Evidence-Based Interventions
Felipe González Castro, Manuel Barrera Jr., and Lori K. Holleran Steiker 213

Treatment of Panic
Norman B. Schmidt and Meghan E. Keough 241

Psychological Approaches to Origins and Treatments of Somatoform Disorders
Michael Wittböft and Wolfgang Hiller 257

Annu. Rev. Clin. Psychol. 2010.6:21-47. Downloaded from arjournals.annualreviews.org by 67.80.195.33 on 04/06/10. For personal use only.

Cognition and Depression: Current Status and Future Directions <i>Ian H. Gotlib and Jutta Joorman</i>	285
The Genetics of Mood Disorders <i>Jennifer Y.F. Lau and Thalia C. Eley</i>	313
Self-Injury <i>Matthew K. Nock</i>	339
Substance Use in Adolescence and Psychosis: Clarifying the Relationship <i>Emma Barkus and Robin M. Murray</i>	365
Systematic Reviews of Categorical Versus Continuum Models in Psychosis: Evidence for Discontinuous Subpopulations Underlying a Psychometric Continuum. Implications for DSM-V, DSM-VI, and DSM-VII <i>Richard J. Linscott and Jim van Os</i>	391
Pathological Narcissism and Narcissistic Personality Disorder <i>Aaron L. Pincus and Mark R. Lukowitsky</i>	421
Behavioral Treatments in Autism Spectrum Disorder: What Do We Know? <i>Laurie A. Vismara and Sally J. Rogers</i>	447
Clinical Implications of Traumatic Stress from Birth to Age Five <i>Ann T. Chu and Alicia F. Lieberman</i>	469
Emotion-Related Self-Regulation and Its Relation to Children's Maladjustment <i>Nancy Eisenberg, Tracy L. Spinrad, and Natalie D. Eggum</i>	495
Successful Aging: Focus on Cognitive and Emotional Health <i>Colin Depp, Ipsit V. Vahia, and Dilip Jeste</i>	527
Implicit Cognition and Addiction: A Tool for Explaining Paradoxical Behavior <i>Alan W. Stacy and Rineout W. Wiers</i>	551
Substance Use Disorders: Realizing the Promise of Pharmacogenomics and Personalized Medicine <i>Kent E. Hutchison</i>	577
Update on Harm-Reduction Policy and Intervention Research <i>G. Alan Marlatt and Katie Witkiewitz</i>	591
Violence and Women's Mental Health: The Impact of Physical, Sexual, and Psychological Aggression <i>Carol E. Jordan, Rebecca Campbell, and Diane Follingstad</i>	607