

The Current Status of Prescribing Psychologists: Practice Patterns and Medical Professional Evaluations

Wendy P. Linda and Robert E. McGrath
Fairleigh Dickinson University

Despite ongoing controversy surrounding prescriptive authority for psychologists, few studies have been conducted on the practices or acceptance of prescribing psychologists. The current study had three aims. The first was to evaluate how prescribing psychologists are perceived by themselves and by their colleagues in various medical professions. The second aim was to understand the practice patterns of prescribing psychologists, while the last was to explore factors associated with perceptions of prescribing psychologists among medical professionals. Thirty prescribing psychologists and 24 of their medical colleagues completed surveys evaluating perceptions and practices of prescribing psychologists. Results demonstrated that prescribing psychologists were overwhelmingly perceived positively by their medical colleagues across various domains. Basic elements of the practice of the prescribing psychologist are described. Conclusions, limitations, and suggestions for further research are discussed.

Keywords: psychology, prescribing, RxP, clinical psychology

Whether psychologists should be able to obtain prescriptive authority (RxP) remains a contested topic (McGrath, 2010). Much of the commentary and research on the issue centers on psychologists' attitudes toward RxP (Fagan, Ax, Liss, Resnick, & Moody, 2007; Robiner, Tumlin, & Tompkins, 2013; Walters, 2001), with strong opinions expressed on both sides. Opposition has often centered on concerns about how prescriptive authority will impact the practice of psychology (DeNelsky, 1996; Hayes & Heiby, 1996). Critics have worried that prescribing psychologists could become, as Shearer, Harmon, Seavey, and Tiu (2012, p. 426) described it, "junior psychiatrists," resulting in the abandonment of psychosocial intervention to master's-level clinicians. In response to this concern, McGrath (2004) suggested that the greater psychosocial training received by psychologists may actually protect against overreliance on medication (see also Muse & McGrath, 2010).

Concerns about the safety of psychologists' prescribing (e.g., Robiner et al., 2013) and the adequacy of the training to ensure competent prescribing (Heiby, 2010) have also been raised. In

response, it can be noted that other nonphysician prescribers have demonstrated the ability to prescribe successfully with less extensive training than medical school (e.g., Venning, Durie, Roland, Roberts, & Lesse, 2000; Lenz, Munding, Kane, Hopkins, & Lin, 2004), even though similar concerns were raised at the time they pursued prescriptive authority. These findings suggest the real issue is how to define the minimum training for psychologists that can generate safe and effective prescribers of psychotropic medications, not how that training compares to other professions with different roles in health care.

Supporters of RxP have focused particularly on its potential to increase access to medication management from mental health professionals for underserved populations (Gutierrez & Silk, 1998). Research consistently finds that primary care physicians are the primary providers of mental health care and write the bulk of prescriptions for psychotropic medications in the United States (Mark, Levit, & Buck, 2009; Pincus et al., 1998; Wang et al., 2006). This pattern is only likely to grow as the number of psychiatrists declines further (Rao, 2003).

Psychologists have now been prescribing in the private sector under New Mexico and Louisiana licensure for almost 15 years and in the military for even longer, creating the potential for shifting the research focus from opinion to the observation of practice patterns and outcomes. To date, however, very little research is available regarding the practices and self-perceptions of prescribing psychologists or the perceptions of their colleagues in medical professions.

The largest body of research on this topic consists of evaluations of the Department of Defense's Psychopharmacology Demonstration Project (PDP) that were not published in peer-reviewed venues. The PDP trained 10 military psychologists as prescribers in the 1990s (Sammons & Brown, 1997). Although relatively short-lived, four separate evaluations of the program were conducted by both governmental and nongovernmental organizations (Newman, Phelps, Sammons, Dunivin, & Cullen, 2000). Not surprisingly,

WENDY P. LINDA received her PhD in clinical psychology from Fairleigh Dickinson University, Teaneck, New Jersey. She is currently an Inpatient Psychology Fellow at Long Island Jewish Medical Center–Zucker Hillside Hospital of Northwell Health, Glen Oaks, New York. Her areas of professional interest include the treatment of trauma and substance use, chronic and severe mental illness, and professional issues in health care psychology.

ROBERT E. McGRATH received his PhD in clinical psychology from Auburn University, Auburn, Alabama. He is currently Professor of Psychology at Fairleigh Dickinson University, Teaneck, New Jersey, and Senior Scientist for the VIA Institute on Character, Cincinnati, Ohio. His research encompasses several topics, including statistical methodology, the study of character and virtue, and professional issues in health care psychology.

CORRESPONDENCE CONCERNING THIS ARTICLE should be addressed to Robert E. McGrath, School of Psychology, Fairleigh Dickinson University, 1000 River Road, Teaneck, NJ 07666. E-mail: mcgrath@fdu.edu

given the number of evaluations and the nature of such evaluations, both supporters and critics have found conclusions in these reports to support their positions (Newman et al., 2000; Robiner et al., 2002). However, the generalizability of the findings from the PDP to the private sector is questionable given the distinctive nature of military service and the PDP training model.

Outside the context of the PDP, only three studies to date have studied prescribing psychologists. Shearer et al. (2012) obtained responses from 47 medical staff providers regarding their experience working with a prescribing psychologist in the primary care service of a major U.S. Army medical facility. Over 90% of respondents described the experience positively. They reported consultation with the psychologist was helpful, confidence in the ability of the prescribing psychologists to make appropriate referral decisions, appropriate prescribing of medications and dosages, adequate knowledge of medical terminology, and confidence that it is safe to refer patients to a prescribing psychologist for psychotropic medication management. Unfortunately, this evaluation was limited to perceptions of a single prescriber.

Two other studies have examined practice patterns across multiple settings. LeVine, Wiggins, and Masse (2011) found that prescribing psychologists in independent practice in Louisiana and New Mexico ($N = 17$) believed their training and practicum had prepared them to prescribe safely and effectively. The percentage of patients that respondents were treating with medication ranged from 31%–91%. Nine of 13 respondents who answered the question indicated they used a combination of medication and psychotherapy for more than 90% of their patients. Since starting to prescribe, 13 indicated they were treating more seriously mentally ill and Medicaid patients. Half reported they were making more money. The authors estimated these increases amounted to \$15,000–\$22,500 per year.

Vento (2014) elicited responses from 21 of the 28 prescribing and conditional prescribing psychologists who were practicing in an outpatient setting in New Mexico in 2013. She found that more than 90% of respondents accepted Medicaid payments and 62.6% of patients served were living in rural areas with limited access to other behavioral health prescribers. Although these two studies are interesting, there are also significant concerns about their small sample sizes and generalizability beyond New Mexico. To date, no studies have attempted to survey the entire population of prescribing psychologists.

The current study had three aims. The first was to evaluate perceptions of prescribing psychologists' knowledge, training, and safety. Second, we asked questions about the current practice patterns of prescribing psychologists, particularly the relative use of psychosocial or behavioral interventions as opposed to medications. Third, we asked prescribing psychologists to forward a survey to medical colleagues. This survey was used to examine perceptions of psychologist prescribers and openness to RxP and also to explore for predictors of those variables.

Method

Participants

At the time this study was conducted (winter 2014–2015), there were 59 psychologists licensed to prescribe in New Mexico (in-

cluding conditional prescribers) and 101 licensed or in the process of licensure in Louisiana. Except for a small number of military psychologists who have been authorized to prescribe without state licensure, these numbers encompass the entire population of prescribing psychologists in the country at that time. Other federal agencies that allow psychologists to prescribe—the Indian Health Service and Public Health Service—still require the psychologist be licensed to prescribe by one of the states (M. Tilus, personal communication, October 5, 2016). Prescribing psychologists were recruited using several methods. We made direct solicitations using email addresses provided by a New Mexico prescribing psychologist. Emails were also posted to state-based listservs for prescribing psychologists in both New Mexico and Louisiana, as well as to the listserv of the American Psychological Association Division 55 (American Society for the Advancement of Pharmacotherapy). It is uncertain how many prescribing psychologists ultimately viewed the solicitation emails.

The first set of solicitations gave a link to an online survey. This was initiated by 43 psychologists. However, 13 respondents were excluded because they indicated that they had completed the survey before or quit with a substantial portion of the survey incomplete, resulting in a sample of 30, or 17.65% of all licensed prescribing psychologists. A second set of solicitation emails and listserv posts provided prescribing psychologists with a link to an online survey that they could send to medical colleagues familiar with their work as a prescriber. This survey was initiated by 36 individuals, 12 of whom were excluded because they were prescribing psychologists themselves, they indicated that they had completed the survey before, or they discontinued participation with a substantial portion incomplete. This left a sample of 24 medical colleagues. Colleagues were asked to identify the psychologist(s) they were evaluating. Because psychologists could send the link to multiple colleagues, the 24 medical colleagues reported evaluating 11–12 different prescribing psychologists (one respondent did not identify the psychologist he or she was evaluating). Colleagues indicated evaluating between one and three prescribing psychologists in their assessments. See Table 1 for demographic statistics.

Procedure

Web-based surveys were developed for each of the two samples, with some questions drawn from LeVine et al. (2011) and Shearer et al. (2012). The surveys were reviewed by three psychologists, two of whom have directed master's programs in clinical psychopharmacology; two of whom were prescribing psychologists, one in New Mexico and one in Louisiana; and all of whom had been on the board of Division 55 at various times.

The survey for prescribing psychologists included questions addressing demographic information, confidence in the training and personal competence, workplace settings, patient populations, and practice patterns, including questions reflecting use of medication versus psychosocial interventions. The medical colleagues' survey included questions addressing demographic information, workplace setting, interactions with prescribing psychologists, and evaluations of prescribing psychologists' training and competence.

Table 1
Demographic Statistics

Variable	<i>n</i>	%	<i>M</i>	<i>SD</i>
Prescribing psychologists				
Gender				
Male	17	62.96		
Female	10	37.03		
Ethnicity				
Caucasian	24	88.89		
Latino	2	7.41		
Asian/Pacific Islander	1	3.70		
Degree ^a				
PhD	22	73.33		
PsyD	8	26.67		
EdD	1	3.33		
Prescribing in				
New Mexico	16	53.33		
Louisiana	10	33.33		
Other ^b	6	20.00		
Age	27		55.41	11.36
Years licensed	30		21.70	11.17
Years as PP	30		5.87	3.08
No. of work sites	30		1.83	.70
No. of prescribing sites	30		1.63	.76
Medical colleagues				
Gender				
Male	17	70.83		
Female	7	29.17		
Ethnicity				
Caucasian	21	87.50		
Mixed	2	8.33		
Asian/Pacific Islander	1	4.17		
Profession				
Nurse/pharmacist/physician assistant	5	20.85		
Physician/resident ^c	19	79.17		
Age	24		47.42	14.15
Years licensed	24		16.42	16.50
Years working with PP	22		4.32	4.11
No. of work sites	24		1.58	.78
No. of work sites with PP	24		1.38	.67
No. of patients shared with PP				
1–10	8	38.10		
10–20	5	23.81		
20–30	4	19.05		
50 or more	4	19.05		
Frequency of communication with PP				
More than weekly	5	20.83		
Weekly	9	37.50		
Once a month	3	12.50		
Once every few months	2	8.33		
Twice per month	5	20.83		

Note. PP = prescribing psychologist.

^a Respondents were allowed more than one response. ^b Prescribe in other states through government agencies. ^c All physicians were primary care providers except one psychiatrist.

Results

Practice Settings

The most common settings in which psychologists worked were independent practice ($n = 16, 53.33\%$), hospital outpatient mental health ($n = 9, 30.0\%$), hospital-based primary care ($n = 8, 26.67\%$), and non-hospital-based primary care ($n = 5, 16.67\%$). These were also the most common settings in which they pre-

scribed. Less common work settings included community mental health and community health centers, as well as hospital-based emergency rooms.

The most frequently reported site where medical colleagues reported working was hospital-based primary care ($n = 17, 70.83\%$), with 14 (58.33%) working with a prescribing psychologist in that setting. The next most common work settings were hospital emergency rooms ($n = 5, 20.83\%$) and community health centers ($n = 5, 20.83\%$). Other infrequent work sites included other hospital-based settings, non-hospital-based primary care, pharmacies, community mental health centers, and independent practice.

Aim 1: Perceptions of Prescribing Psychologists

Table 2 includes ratings by prescribing psychologists and medical colleagues of various statements regarding the training, knowledge, and practice of the prescribing psychologist on a scale from 1 (*strongly disagree*) to 5 (*strongly agree*). There was also a *not applicable* option. The responses of two prescribing psychologists and one response from a third were excluded from this analysis due to inconsistencies in responding that suggested a failure to examine the response alternatives. The alpha coefficients for these items was .73 for 10 items administered to prescribing psychologists and .90 for 12 items rated by medical colleagues. For all of the items, responses consistently suggested a positive perception of the prescribing psychologist: In every case, for both psychologists and colleagues, the mean indicated a positive perception of prescribing psychologists. One-sample *t* tests were conducted for each of 10 statements rated by prescribing psychologists and 12 statements rated by medical colleagues. In all cases, the mean score significantly differed from the neutral rating of 3 in the positive direction, $p < .01$.

Independent samples *t* tests were then conducted between psychologists and colleagues for nine items that appeared in both surveys; these items are highlighted in Table 2. In two thirds of these comparisons, prescribing psychologists generated a higher mean score. However, only one of these analyses demonstrated a significant difference between the professions. Prescribing psychologists were more likely to agree that they consult appropriately with other medical professionals about patient care, $t(48) = 2.81, p = .01$. Although the difference was significant, the mean for prescribing psychologists was 4.96 ($SD = .19$), while the mean for medical colleagues was 4.64 ($SD = .58$); that is, as in all other instances, the mean for both groups was in the positive range.

Aim 2: Practice Patterns of Prescribing Psychologists

Table 3 summarizes information provided by prescribing psychologists on practice patterns, changes in practice since they began prescribing, patient demographics, and aspects of "the most recent full work day you worked in a setting where you prescribe medications." The two most frequently reported changes since prescribing were increased severity of diagnosis among patients served ($n = 20, 66.67\%$), and increased salary ($n = 19, 63.3\%$).

A paired samples *t* test conducted to compare the percentage of cases prescribers reported starting treatment with medication alone ($M = 27.70, SD = 33.07$) versus psychotherapy/behavioral therapy alone ($M = 27.60, SD = 32.53$) was not significant, $t(29) =$

Table 2
Ratings by Prescribing Psychologists and Medical Colleagues

Item	<i>n</i>	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
Prescribing psychologists						
Adequately trained to prescribe medication ^a	28	.00	.00	.00	32.14	67.86
Not enough knowledge of how to safely prescribe to patients ^a	27	74.07	25.93	.00	.00	.00
Adequate knowledge of medical terminology ^a	28	.00	.00	3.57	46.43	50.00
Adequate knowledge of medical tests relevant to prescribing ^a	28	.00	.00	.00	50.00	50.00
Safe prescribers ^a	28	.00	.00	.00	7.14	92.86
Know when it is appropriate to refer a patient to other medical professionals ^a	28	.00	.00	.00	10.71	89.29
Appropriately consult with other medical professionals about patient care ^{a*}	28	.00	.00	.00	3.57	96.43
Medical professionals are confident in my ability to prescribe/monitor medication	28	.00	.00	3.57	21.43	75.00
Increase patient access to care ^a	28	.00	.00	3.57	7.14	89.29
Medical colleagues						
Adequately trained to prescribe medication	22	.00	.00	4.55	27.27	68.18
Not enough knowledge of how to safely prescribe	22	68.18	27.27	4.55	.00	.00
Adequate knowledge of medical terminology	22	.00	.00	4.55	18.18	77.27
Adequate knowledge of medical tests relevant to prescribing	22	.00	4.55	4.55	22.73	68.18
Safe prescribers	22	.00	.00	.00	22.73	77.27
I would refer to a PP	21	.00	.00	4.76	19.05	76.19
Increase patient access to care	22	.00	.00	4.55	22.73	72.73
I support the movement for psychologists to prescribe	22	.00	.00	4.55	27.27	68.18
Appropriately consult with me about patient care	22	.00	.00	4.55	27.27	68.18
Doesn't know when to refer to other medical providers	22	68.18	31.82	.00	.00	.00
Concerned will prescribe inappropriate medications and/or dosages	22	59.09	36.36	4.55	.00	.00
	<i>n</i>	Weaker than most	About the same	Better than most		
Compared to other prescribers, PPs are^a						
Prescribing psychologists	27	.00	33.33	66.67		
Medical colleagues	24	4.17	37.50	58.33		

Note. There was also an N/A option for items, but this option was not selected by any participants. PP = prescribing psychologist.

^a Items contained in both surveys.

* $p < .05$.

.01, $p = .99$. A paired samples t test was also used to compare the number of cases in the most recent full workday where the psychologist increased ($M = 2.96$, $SD = 3.34$) or decreased ($M = 2.18$, $SD = 2.00$) medications. This difference was also not significant, $t(27) = 1.85$, $p = .08$. The findings did not suggest a bias toward the use of psychosocial or biological interventions.

We suspected that psychologists who have been prescribing for longer periods would report having a higher percentage of patients with severe pathology and a higher percentage of patients on medication. Years of prescribing did not significantly correlate with reporting an increase of patients with severe pathology ($r = .23$, $p = .23$), percentage of patients prescribed medication ($r = .24$, $p = .19$), or number of patients on medications during the most recent work day ($r = .29$, $p = .12$), although all correlations approached the moderate range.

Aim 3: Correlates of Medical Colleague Confidence Levels

It was predicted that the confidence of colleagues would vary as a function of the amount of collaboration and length of time working with a prescribing psychologist. Four items included in the medical colleagues' survey were indicators of amount of contact with prescribing psychologists: frequency of discussion

with prescribing psychologists on a 6-point scale, number of shared patients, number of shared work sites, and number of years since first working with prescribing psychologists. Correlations were computed between these four variables and medical colleagues' scores on 12 perception items. The results are displayed in Table 4. Four of the six correlations between contact variables were small, indicating they represented distinct dimensions of contact. Given the small sample size, only 1 of 48 correlations between contact and confidence variables was significant ($p = .03$), and this correlation would not have been significant with any of the available corrections for multiple comparisons. The more noteworthy finding is that half of correlations, including the significant one, were in the negative direction. However, given that the majority of colleagues were choosing the two highest options on all 12 confidence variables (including all but one colleague on the confidence item included in the significant correlation), this finding does not support a conclusion that increased contact is leading to greater perceptions of incompetence. This finding could suggest that more contact allows for a more realistic evaluation of the competence of the prescriber. However, given the small sample size ($n = 22$) and restriction of range, the reliability of these findings should be considered questionable.

Table 3
Practice Variables for Prescribing Psychologists

Variable	<i>n</i>	%	<i>M</i>	<i>SD</i>	Median
Patient population					
No change	9	30.00			
Increased diagnostic severity	20	66.67			
Decreased diagnostic severity	0	.00			
More patients of minority status	7	23.33			
Fewer patients of minority status	0	.00			
More low SES patients	9	30.00			
Fewer low SES patients	0	.00			
More rural patients ^a	12	40.00			
Fewer rural patients	0	.00			
Other population changes ^b	4	13.33			
Income					
Higher income	19	63.30			
Same income	10	33.30			
Lower income	0	.00			
Ethics complaints related to prescribing	0	.00			
Malpractice claims related to prescribing	0	.00			
Hospitalized or harmed by a medication prescribed	1	3.33			
Distribution of treatments (last 12 months)					
No. of patients seen	30		453.53	443.67	275.00
% patients given a prescription	30		83.00	47.14	82.50
% patients seen for therapy alone	30		16.33	22.13	10.00
% patients seen for medication alone	30		39.30	38.27	25.00
% patients seen for both	30		42.17	30.95	35.00
% patients seen for other reasons ^c	30		6.40	14.27	1.00
% patients seen for medication alone with separate provider for therapy	25		57.80	35.76	65.00
% time start treatment with medication alone	30		27.70	20.00	33.07
% time start treatment with therapy alone	30		27.60	32.53	20.00
% time start treatment with therapy and medication	30		44.70	31.27	50.00
Patient characteristics					
% patients from urban area ^a	30		39.90	39.21	31.50
% patients from urban center ^a	30		20.60	31.34	.00
% patients from rural area ^a	30		39.50	41.52	20.00
% patients on Medicaid	28		53.79	38.22	60.00
% patients on Medicare	27		13.96	16.28	10.00
% patients receiving SSI	24		18.83	23.66	10.00
No. of physician refusals of medication prescribed	21		.81	1.47	.00
Average salary in last 12 months	27		\$125,444	\$50,901	\$125,000
Last full day of patient care					
No. of patients seen	30		9.53	4.55	8.00
Average time per patient (min)	28		39.16	11.28	40.00
No. of prescriptions written	30		12.70	12.18	9.00
No. of patients with compliance issues with medications	30		1.90	2.11	1.00
Total No. of medications prescribed that day	29		17.10	11.50	15.00
No. of patients on opioids	30		1.77	2.49	1.00
No. of patients on medications for psychotropic SEs	30		1.23	2.37	.00
No. of patients you have increased medications	29		2.93	3.28	2.00
No. of patients you have decreased medications	28		2.18	2.00	2.00
No. of patients on multiple medications in same class	30		1.43	3.09	.00

Note. SES = socioeconomic status; SSI = supplemental security income; SEs = side effects.

^a Urban area >50,000 people; urban center = 2,500–50,000 people; rural <2,500. ^b Examples include medical comorbidities and seeing more youths. ^c Examples include evaluation and consultation.

It was also expected that physicians would demonstrate less agreement on an item indicating support for RxP than other medical colleagues. An independent samples *t* test was conducted comparing physicians ($n = 18$, $M = 4.56$, $SD = .78$) to all other medical colleagues ($n = 4$, $M = 4.75$, $SD = .50$). While the mean difference was in the expected direction, the test was not significant, $t(20) = -4.70$, $p = .64$. As in previous cases, it should be noted that the mean scores for both groups were in the supportive range.

Exploratory Analyses

The prescribing psychologists reported seeing more than twice as many patients for medication alone ($M = 39.30\%$, $SD = 38.27$) than for therapy alone ($M = 16.33\%$, $SD = 22.13$), a significant difference, $t(29) = 2.35$, $p = .03$. On average, 57.80% of patients seen for medication only were receiving psychotherapy from another provider ($n = 25$, $SD = 35.76$). Correlations were computed to evaluate whether the percentage of patients for which they

Table 4
Predictors of Medical Colleague Confidence in Prescribing Psychologists

Predictor	13	14	15	16
Confidence				
1. Adequately trained to prescribe medication	-.46*	-.38	.19	.20
2. Not enough knowledge of how to safely prescribe	.21	.25	-.24	-.25
3. Adequate knowledge of medical terminology	-.28	-.24	.10	.13
4. Adequate knowledge of medical tests relevant to prescribing	-.20	-.24	.21	.20
5. Safe prescribers	-.15	.03	.06	.25
6. I would refer to a PP	-.40	-.44	.15	.20
7. Increase patient access to care	-.25	-.34	.19	.22
8. I support the movement for psychologists to prescribe	-.20	-.40	.19	.17
9. Appropriately consult with me about patient care	-.09	-.26	.03	.33
10. Doesn't know when to refer to other medical providers	-.09	.01	-.04	-.33
11. Concerned will prescribe inappropriate medications and/or dosages	.21	.07	-.29	-.32
12. Compared to other prescribers, PPs are ^a	-.25	-.31	.15	.16
Contact				
13. Frequency of discussion with PPs		.31	-.15	-.01
14. No. of shared patients			.51*	.08
15. No. of shared work sites				.26
16. Years working with PPs				

Note. PP = prescribing psychologist.

^a See Table 2 for the three response options to this question.

* $p < .05$ (two-tailed).

reported prescribing was associated with a reported increase in the diagnostic severity of their patients, $r = .16$, $p = .39$, or the percentage of patients on supplemental security income, $r = -.05$, $p = .82$. Neither was significant and correlations were small, suggesting prescribing rate was not related to the severity of patient pathology.

Responses to open-ended questions were reviewed by a clinical psychology doctoral student and licensed clinical psychologist involved in training psychologists for prescriptive authority to generate ad hoc categories. Coding was agreed upon by consensus ratings. The four most common conditions for which psychologists prescribed were depression (90.0%), anxiety (56.67%), bipolar disorder (46.67%), and attention-deficit hyperactivity disorder (ADHD; 43.33%). When asked if there are any conditions commonly treated with medication for which the provider avoids medication, 17 responded. The most frequently reported were anxiety (52.94%), insomnia (41.18%), substance use (23.53%), mild to moderate depression (17.65%), and ADHD (17.65%). When asked the three types of medication they most frequently prescribed, prescribing psychologists most often mentioned antidepressants (100%), mood stabilizers (56.67%), ADHD medication (50.0%), and antipsychotic medication (43.33%).

Prescribers were asked whether they refer for certain medication cases and under what circumstances they make referrals. Among those who responded ($n = 24$), the most common reasons for referral included medically complex cases (41.67%), feeling stuck in treatment/treatment-resistant cases (20.83%), schizophrenia/complex psychosis (16.67%), and chronic severe mental illness (16.67%).

Prescribers were also asked to indicate ways in which they are increasing access to care. Of the 26 who responded, the most commonly cited were the lack of alternative prescribers (38.46%),

lack of availability of other prescribers (19.23%), reducing the need to refer cases out (19.23%), increased access for patients of low socioeconomic status (15.38%), and reduced wait time (15.38%). When asked why they pursued RxP, better quality of care/patient outcomes (34.62%), increased knowledge (34.62%), increased availability of providers (23.08%), and personal interest (19.23%) were the most common responses ($n = 26$).

Prescribers were also asked about the difficulties and advantages of prescribing. With regard to difficulties ($n = 26$), insurance issues, collaboration requirements with medical colleagues, and gaps in training/knowledge (all cited by 19.23% of respondents) were the most frequent responses, followed by skepticism in other providers, including in some cases other psychologists (15.38%). With regard to gaps in training and knowledge, providers mentioned obstacles such as difficulty obtaining quality supervision and mentorship, particularly from other prescribing psychologists, due to the small number of providers. In terms of advantages, quality of care (52.0%), faster access to care (28.0%), greater control of patient care (24.0%), and increased collaboration with other providers (24.0%) were the most common responses ($n = 25$).

Medical colleagues who indicated the prescribing psychologist was increasing access were asked to explain how. Of those who responded ($n = 18$), the top four responses included availability (72.22%), reduced use of physician time (16.67%), and psychologists' willingness to accept insurance (16.67%) and to communicate with the colleague (11.11%). For those who responded to a question about the benefits of working with prescribing psychologists ($n = 19$), the top responses included sharing knowledge/expertise (63.16%), better access to care (47.37%), improved outcomes/quality of care (31.58%), and improved communication about patients (26.32%). Colleagues were also asked if they had any problems or concerns related to the prescribing psychologists

with whom they work. Of 20 respondents, one indicated knowing about an incident where a psychologist had prescribed two medications with antagonistic effects. No others indicated any concerns.

Discussion

Summary of Findings

Overall, findings suggested that psychologists are prescribing successfully. The findings of the current study provide an overwhelmingly favorable evaluation of such prescribers. These results concur with and expand on the findings of past evaluations of both the PDP program and a military prescribing psychologist (Shearer et al., 2012) to include an assessment of providers working across states and settings. In particular, the finding that the most common benefit reported by medical colleagues of working with prescribing psychologists involved sharing expertise suggests that these colleagues not only deem prescribing psychologists competent but also value them as a source of information. Only one medical colleague indicated any concerns about working with prescribing psychologists, and that involved a single error.

Comparisons of prescribers and colleagues on perceptions of prescribers suggested both groups on average perceived prescribing psychologists favorably. Colleagues' perceptions of prescribing psychologists were overwhelmingly positive. These perceptions were slightly less positive with increases in certain types of contact, although they remained strongly positive and these were not significant relationships.

Based on the indirect information we were able to collect, we found no evidence of a bias toward the use of medications versus psychosocial interventions. The number of cases where providers reported beginning treatment with medication alone versus therapy alone were almost exactly the same. Significantly more patients were seen for medication alone than for therapy alone, but this must be weighed against the finding that many of these patients were being seen by another provider for therapy. On their most recent workday prescribing, psychologists were about equally likely to increase and decrease the number of medications prescribed. In order to make better sense of this finding, though, information would be needed about the frequency with which other types of prescribers increase versus decrease medications.

It is also the case that prescribers were using psychotherapy at least in part with a majority of their patients. Unfortunately, the amount of time dedicated to the two activities was not tracked. Given standard prescribing versus psychotherapy practices, though, it might be assumed that the majority of patient contact time was dedicated to psychotherapy. It is also unknown how many patients requested medication or how many were referred specifically for medication. Future research should focus more on time estimates of activities, changes over time in the relative use of different treatment modalities, changes in patient population, and what services patients are specifically requesting. These statistics would allow a better evaluation of concerns regarding the decline of psychosocial interventions among these providers.

Overall, prescribing psychologists reported increased service to patients of minority background, patients of low socioeconomic status, rural patients, patients with more severe diagnoses, and patients using Medicaid, all of which suggest that RxP is in fact

meeting its intended end of improving access to care. In fact, not one prescribing psychologist indicated that he or she was seeing fewer minority, low socioeconomic status, rural, or severely pathological patients. Increased access to care also emerged as a theme in open-ended questions.

Psychologists who have been prescribing for longer periods reported a higher percentage of patients with severe pathology and a higher percentage of patients on medication, although these effects were not significant. Since no psychologists in the sample had been prescribing for more than 12 years, perhaps these relationships will become stronger over a longer time frame or as the field becomes more normative. Finally, the most common changes reported to practice were increased salary and increased diagnostic severity of patients. RxP seems to offer benefits both to the field and to patients.

Limitations and Future Directions

The current research has several limitations. While the study expands past research to evaluate prescribers across states and across medical colleagues, the sample size is still too small. Unfortunately, this is likely to remain a problem until the population of prescribing psychologists grows substantially. It is worth noting that the first randomized clinical trial of nurse practitioners (Lenz et al., 2004) was not published until the profession had existed for 40 years. It is an inevitable aspect of the health care system that changes to the system—which can include the introduction of new treatments as well as new providers—can only be fully vetted once that change has been adopted widely.

A second concern is a possible bias toward a positive outcome. While the study was anonymous, medical colleagues may have felt some pressure to respond in a positive manner as they were evaluating their colleagues, or those with negative opinions may have been less likely to respond or get sent the link. Only one of the colleagues was a psychiatrist. Ultimately, though, the best source of information about the competence of prescribing psychologists would be patient outcomes in comparison to those for other professions.

Although it clearly has its limitations, this study is the most extensive to date on the operation of RxP in practice. The majority of the available research regarding psychologists' prescribing focuses on attitudes toward RxP (Walters, 2001) among those without experience working in this model. Various concerns have been raised regarding how RxP may impact the field, while arguments have been put forward that it may improve access to mental health treatment. In reality, there is little evidence-based research to support these opinions. Psychologists have been prescribing for more than 20 years. Given that the practice is not going to evaporate, future research should focus more on the practices of prescribing psychologists and on how we as a profession can enhance that practice so that the prescriptive practice can be optimized and less on whether it is a good idea.

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