

Assessment of the current practice of psychiatric pharmacists in the United States

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Abstract

Introduction: A comprehensive review of psychiatric pharmacy practice has never been performed in the United States. As psychiatric pharmacists become more involved in mental illness treatment, determining the current state of practice is important to help advance the specialty. The Professional Affairs Committee of the College of Psychiatric and Neurologic Pharmacists (CPNP) was charged with performing this review to define current psychiatric pharmacy practice.

Methods: An electronic survey was sent to all pharmacist members of CPNP and all nonmember Board Certified Psychiatric Pharmacists (BCPPs) in the United States in late summer 2019. The survey consisted of 36 questions across multiple domains to obtain information about respondents' education and training background, practice setting and type, and information about prescriptive authority and other areas. An initial e-mail invitation was sent along with 2 reminder e-mails over the subsequent 2 weeks.

Results: A total of 334 of 1015 pharmacists completed the survey (32.9%). Responders completed a postgraduate residency 77.8% of the time, and 88.3% were BCPP. Practice settings were split evenly between inpatient and outpatient practices or a combination of the 2. Among respondents, 46.5% reported having prescriptive authority as part of their practice, and 41.3% reported treating nonpsychiatric as well as psychiatric illnesses. Prescriptive authority was more likely in outpatient practices and in those treating nonpsychiatric illnesses.

Discussion: The current practice of psychiatric pharmacy is incredibly varied in terms of practice setting, activities performed, and services provided. Further exploration is needed to help determine the optimal role of psychiatric pharmacists.

Keywords: psychiatric pharmacist, prescriptive authority, professional affairs, practice model, BCPP

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Introduction

In the United States, 20.6% of the adult population had a mental illness in the past year.¹ Given this prevalence, mental illness is a well-established driver of morbidity, mortality, disability, and health care costs.¹ Nearly 90 000 emergency department visits annually are related to often preventable adverse effects of psychiatric medications.² The relative risk of mortality is 2.2 times higher for persons with a psychiatric disorder, resulting in a lower life expectancy than the general population.^{3,4} This may be due, in part, to both undertreated and untreated psychiatric disorders.⁴ Contributing further to poor outcomes is the issue of treatment nonadherence. Patients prescribed psychotropic medications have high rates of medication nonadherence, including more than 45% for antidepressants, 38.1% for anxiolytics, and 34.6% for antipsychotics.⁵ Challenges to meeting the needs of patients with mental illness are further exacerbated by a shortage of mental health providers that is projected to last through the coming decade.¹ Hence, using all available resources to mitigate this workforce shortage is necessary to produce high-quality patient care.

Pharmacists, as part of an interdisciplinary team, can have a number of clinical responsibilities and positive impact. These responsibilities may include providing medication information and recommendations to providers,⁶⁻⁸ educating patients about psychotropic medications,^{7,9} or providing direct patient care through office or telephone visits.^{7,8,10,11} Outpatient psychiatric pharmacist services have made a significant impact on patient care. These services have resulted in increased rates of medication adherence, enhanced patient satisfaction, and improved clinical outcomes (including greater efficacy and fewer side effects).^{12,13} Inpatient psychiatric pharmacist services have improved the appropriate, evidence-based use of medications to vulnerable patient populations, including children, the elderly, and those living with an intellectual disability; reduced rehospitalizations; provided cost savings; and demonstrated the ability to safely prescribe medications.^{12,13} However, these clinical services may be inconsistently provided nationwide due to variability in state pharmacy practice regulations, the inability to bill for pharmacy services, pharmacy informatics infrastructure, and the nature of pharmacist–prescriber relationships.^{12,13}

Pharmacists' impact, although embedded in clinical services, has been documented only on a small scale at certain practices⁷⁻¹¹ and may not necessarily reflect nationwide practice. The Professional Affairs Committee of the College of Psychiatric and Neurologic Pharmacists (CPNP) conducted a survey of psychiatric pharmacists to determine the types and scope of clinical practices in which psychiatric pharmacists are engaged.

Objectives and Methods

The goal of this study was to gather data on the current practice of psychiatric pharmacy within the United States and describe this practice in both qualitative and quantitative terms.

The study was conducted via electronic survey of psychiatric pharmacists. The survey instrument was developed by the Professional Affairs Committee of CPNP. Individual questions were written, reviewed, and modified by the committee over several stages. Once the instrument was finalized by the committee, it was beta tested by 10 members of the Board of Directors and other senior members of CPNP.

The final survey instrument was entered into CPNP's online survey system for distribution to potential participants. Inclusion criteria to participate in the study included all current Board Certified Psychiatric Pharmacists (BCPPs) as reported by the Board of Pharmacy Specialties (BPS) or any active pharmacist member of CPNP as of August 30, 2019. Anyone residing outside the United States or with undeliverable e-mail addresses were excluded. Using the latest contact information from CPNP's database and e-mail addresses obtained from BPS, pharmacists were sent an e-mail inviting them to participate with an individualized web address invitation for the survey. This allowed the survey system to both track participation and prevent duplicate submissions. Additional invitations were e-mailed every 1 to 2 weeks during the survey period for those invited participants who did not respond to previous survey requests. Although individual e-mail addresses were tracked for participation, all responses were kept anonymous from their e-mail. Participation in the survey was voluntary, and no incentives were provided to participants. The survey was closed after 7 weeks of availability to participants.

All participants were asked to provide informed consent and confirm they were a practicing psychiatric pharmacist within the United States prior to starting the actual survey instrument. Those qualified who provided consent to participate then entered the online survey, which consisted of 36 questions across five domains: clinician details/demographics, primary clinical practice facility information, primary clinical practice demographics, prescriptive authority, and professional activities. The questions varied in type, including yes/no, multiple choice, numerical responses, and free text, depending upon the nature of the question.

All responses were kept confidential and deidentified to maintain participant anonymity. Institutional review board exemption approvals were received from MCPHS Univer-

sity and University of California San Diego, and approval of the project was received from the CPNP Board of Directors prior to survey distribution. Data were analyzed using descriptive statistics (mean, median, SD, range). Association analyses for prescriptive authority and professional activities by demographic variables were analyzed using *t*-test and chi-square/Fisher exact test for linear and nominal variables, respectively. All data were analyzed using IBM SPSS Statistics, version 26 (Armonk, NY).

Results

Of the 1015 pharmacists who received the electronic survey, 334 consented and responded (32.9%). Almost half of the respondents were aged between 30 and 39 years (Table 1), and there was a fairly even distribution of respondents by geographic region with the exception of the northeast. All states within the United States had at least 1 respondent with California having the highest percentage of the total respondents (10.8%), followed by Minnesota (6.0%) and Texas (5.1%; Figure 1).

Approximately 30% of respondents reported working in a federal facility, and about 50% reported working in an inpatient setting (Table 1). Of the clinical practice settings, 25% and 20% of respondents reported working in a Veterans Affairs (VA) government hospital and academic medical center, respectively.

The mean numbers (\pm SD) of years of licensure and psychiatric specialty practice were 13.9 (\pm 10.7) and 10.5 (\pm 8.68) years, respectively. Respondents reported spending, on average, 76.1% (\pm 28.7%) of the week in clinical practice and that, on average, their positions were funded at 64.6% (\pm 45.5%) by their clinical site versus other funding sources (academic institutions, grants, etc).

Of the respondents, 46.5% reported having a collaborative practice agreement, VA scope of practice, or alternative prescriptive authority (Table 1). Approximately 28% of those practicing with prescriptive authority reported a cosignature was not required, 24% reported prescribing based on disease state, and 16% reported prescribing from a list of psychiatric and nonpsychiatric medications. Approximately 8% reported they were authorized to prescribe controlled substances.

Of the psychiatric conditions being directly managed (defined as initiating, adjusting, or discontinuing medications in at least 10% of patients) by respondents, depressive disorders (48.5%), anxiety disorders (44.0%), bipolar disorders (38.6%), and schizophrenia (38.6%) were most frequently reported. When asked about tracking

TABLE 1: Demographics of psychiatric pharmacists responding

Demographic	Percentage
Age (y)	
20-29	11.1
30-39	46.4
40-49	23.4
50-59	11.1
60+	7.2
Did not respond	0.8
Geographic region	
Northeast	17.1
Midwest	26.9
South	25.4
West	26.3
Did not respond	4.3
Postgraduate training background ^a	
PGY1 pharmacy residency	57.5
PGY2 neurology residency	0.3
PGY2 psychiatry residency	59.0
Fellowship	7.5
Other	6.9
None	22.2
Board certifications ^a	
BCPP	88.3
BCACP	2.4
BCPS	20.1
BCGP	5.1
Other	2.7
None	6.0
Federal practice setting	29.3
Clinical practice setting type	
Hospital inpatient	47.6
Hospital outpatient	15.0
Both hospital inpatient and outpatient	13.8
Nonhospital outpatient	16.2
Other	6.3
Did not respond	1.1
Prescriptive authority	
Overall collaborative practice/VA scope of practice/alternative prescriptive authority	46.5
Outpatient prescriptive authority	69.8
Inpatient prescriptive authority	22.0
Prescriptive authority type not provided	8.2

BCACP = Board Certified Ambulatory Care Pharmacist; BCGP = Board Certified Geriatric Pharmacist; BCPP = Board Certified Psychiatric Pharmacist; BCPS = Board Certified Pharmacotherapy Specialist; PGY = postgraduate year; VA = Veterans Affairs.

^aValues may add up to more than 100% as respondents were able to select more than 1 response to this survey question.

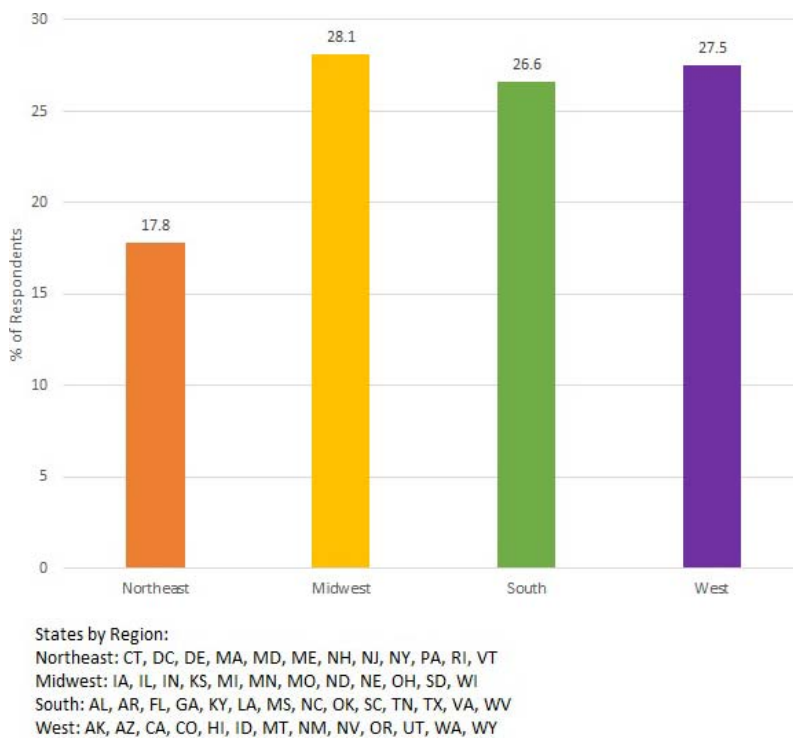


FIGURE 1: Percentage of respondents by geographic region (n = 320; missing geographic data for 14 respondents)

outcomes at their clinical site, 57.8% reported not tracking or not being able to track any clinical outcomes related to their patient care activities.

When asked about managing nonpsychiatric conditions in their practice, 58.7% reported managing psychiatric conditions only (Figure 2). Of the nonpsychiatric conditions, diabetes and metabolic diseases (25.7%), cardiovascular disorders (25.1%), and neurological disorders (20.4%) were reported as being most frequently managed by respondents.

There were no significant differences between those treating nonpsychiatric conditions and those who did not in the average number of years licensed (13.0 vs 14.5 years, respectively) or in the average number of years of specialty practice (9.70 vs 11.1 years, respectively). There

were significant differences in the average percentage of weekly time spent in their clinical practice setting between respondents treating patients for both psychiatric and nonpsychiatric conditions compared to those treating only psychiatric conditions ($84.3\% \pm 23.4\%$ vs $70.5\% \pm 30.4\%$, respectively, $P < .001$) and in the percentage of their position funded by the clinical practice ($72.9\% \pm 42.5\%$ vs $56.2\% \pm 46.6\%$, respectively, $P = .006$).

Pharmacists reported a variety of specific clinical activities, such as initiating medications, adjusting doses, discontinuing medications, and providing comprehensive medication management. The most frequent activities provided to at least 50% of patients included comprehensive medication management (45.8%), adjusting doses (40.7%), consulting/chart review (37.8%), and ordering labs (36.9%; Figure 3).

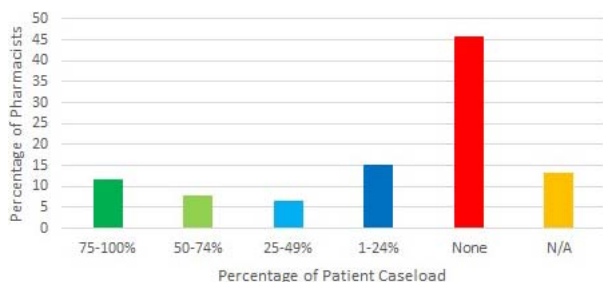


FIGURE 2: Psychiatric pharmacist management of non-psychiatric conditions (N/A = not applicable)

Additional professional activities reported by pharmacists included providing at least 5 hours of psychopharmacology lectures annually (78.7%) and at least 40 hours of experiential training annually to pharmacy students (75.4%) and nonspecialist pharmacy residents/fellows (54.5%). Respondents also participated in establishing institutional policies on psychiatric pharmacy issues (59.0%), providing leadership in national healthcare organizations (16.5%), and serving on statewide formulary committees (9.9%).

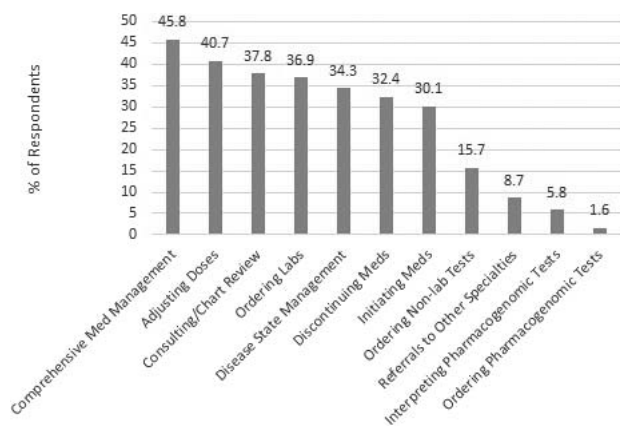


FIGURE 3: Clinical activities performed by psychiatric pharmacists in at least 50% of patients

BCPPs Versus Non-BCPPs and Training Background

Most (77.8%) of the respondents completed a postgraduate training program (Table 1), and 88.3% reported being a BCPP. There were significant differences in the average number of years of licensure between BCPP respondents compared to non-BCPP respondents (14.7 ± 11.0 vs 12.3 ± 9.86 years, respectively, $P=.043$) and in the average number of years of specialty practice (11.8 ± 9.04 vs 8.13 ± 7.40 years, respectively, $P < .001$). There were no significant differences between BCPPs and non-BCPPs in average percentage of weekly time spent in their clinical practice setting (75.8% vs 76.7%, respectively) or in percentage of position funded by the clinical practice (65.8% vs 62.3%, respectively).

There were statistically significant differences among respondents based on age and training background. The younger the respondents, the more likely they were to have completed a postgraduate year 1 (PGY1) general residency ($P < .0001$) or a postgraduate year 2 (PGY2) psychiatric residency ($P < .0001$). There was no difference in the percentage of BCPPs by age ($P=.380$), but differences were seen when training background and BCPPs were combined together. Compared to older respondents, younger respondents were more likely to have completed both PGY1 and PGY2 residencies and be a BCPP ($P < .0001$), PGY1 and BCPP ($P < .0001$), and PGY2 and BCPP ($P < .0001$).

Respondents were also asked about the total number of psychiatric pharmacists employed at their site. They reported the mean number of pharmacists (in total) who provided psychiatric care at each site was $4.36 (\pm 5.44)$ with BCPPs averaging $2.7 (\pm 2.93)$, and the mean number of pharmacists without psychiatric residency training providing psychiatric care was $2.15 (\pm 4.13)$.

TABLE 2: Information on patient referrals

Specific Information	Percentage
Medication management referral sources ^a	
Psychiatrist	58.4
Other physician	37.4
Nurse practitioners/physician assistants	40.1
Social worker or other master-level provider	26.0
Psychologist	23.7
Nurse (RN)	19.2
Care/case manager	10.8
Pharmacist	19.5
Other	3.3
N/A—I don't receive medication management referrals	26.0
Initial diagnosis for referral sources ^a	
Psychiatrist	68.3
Other physician	34.7
Nurse practitioners/physician assistants	37.1
Social worker or other master-level provider	21.3
Psychologist	24.3
Other	1.5
N/A—my practice is not impacted by the initial diagnosis	19.2

N/A = not applicable; RN = registered nurse.

^aValues may add up to more than 100% as respondents were able to select more than 1 response to this survey question.

Inpatient Versus Outpatient Practices

Pharmacists who reported practicing in outpatient settings were significantly more likely to have prescriptive authority versus inpatient practices (69.8% vs 22.0%, $P < .001$). Those in the outpatient settings were also more likely to track outcomes related to their position compared to those in inpatient settings (49.5% vs 36.2%, respectively, $P=.039$, $df=1$). Psychiatrists were reported to be primary sources for initial diagnosis (68.3%) and referral for medication management to a psychiatric pharmacist (58.4%; Table 2). Nurse practitioners and physician assistants were the second most frequent providers for initial diagnosis and pharmacist medication management referral.

There was a difference in completion of a PGY2 in psychiatric pharmacy (56% vs 70%, respectively, $P=.020$, $df=1$) and fellowship (5% vs 14%, respectively, $P=.021$, $df=1$) between those practicing in inpatient and outpatient settings. There was no difference in completion of either a PGY1 general residency or PGY2 residency in neurology between those practicing in the 2 settings although the low overall number of respondents who had completed a PGY2 neurology residency prevented a real comparison of this training type.

There was no difference in BCPPs (90.6% vs 84.6%, respectively, $P=.171$, $df=1$) or Board Certified Pharmacotherapy Specialists (BCPSs; 18.1% vs 20.2%, $P=.748$, $df=1$) when comparing those who practice in inpatient or outpatient settings. There was also no difference in percentage of work time in clinical setting (79% vs 75%, respectively, $P=.291$, $df=262$) or percentage of position being funded by clinical practice (65% vs 65%, respectively, $P=.968$, $df=262$) between those practicing in inpatient and outpatient settings.

Discussion

This study is notable for being the first comprehensive survey of current psychiatric pharmacy practice in the United States. Nearly 90% of the respondents were BCPPs with less than 60% having completed a PGY1 pharmacy practice residency and/or a PGY2 psychiatric residency. This is in sharp contrast to medicine, in which nearly all physicians have completed a residency and are board-certified in at least 1 specialty area. This gap can be explained by the evolution of pharmacy education and training as well as the current landscape as it applies to the availability of pharmacy practice residencies. Although accredited residency programs in psychiatric pharmacy have existed for approximately 40 years,¹⁴ the requirement to complete a general pharmacy practice residency prior to a second specialty residency year was not in effect until 2007,¹⁵ which may partially explain why respondents of younger ages were more likely to have completed both a PGY1 and PGY2 residency and be a BCPP compared to older members who may have only completed 1 year of residency training in addition to being a BCPP. Another hypothesis regarding the gap between residency training and having a BCPP is the lack of available residency programs for pharmacists after completing their doctor of pharmacy education. Currently less than two-thirds of interested candidates match to a PGY1 pharmacy practice residency program each year.¹⁶ As completing a PGY1 is now a prerequisite to a PGY2, this may prevent pharmacists from completing training specifically in psychiatric pharmacy although they may still meet the requirement to sit for the BCPP exam by obtaining equivalent experience. It is not anticipated that the shortfall in residency programs will be resolved in the near future, which speaks to the need to establish a baseline qualification that is achievable for all pharmacists interested in working with persons with psychiatric disorders. This is especially critical due to the increasing unmet need for mental health services in the US population. It should be noted that CPNP recommends the BCPP as a benchmark in determining whether a pharmacist has the required knowledge and experience to provide specialty care in this area.¹²

The finding that a greater number of outpatient pharmacists had completed a PGY2 psychiatric pharmacy residency was expected. In recent years, positions in the outpatient setting have expanded significantly, and it is likely that those completing their residency training in recent years may have sought out these newer opportunities. The higher completion rates of a fellowship by outpatient pharmacists may also explain why they were more likely to track outcomes than their inpatient counterparts. Having completed a fellowship program would better position these pharmacists to apply the research skills gained during their training to the clinical settings. It is unknown whether or not the pharmacists who were tracking their outcomes held academic appointments. This is important to note as faculty members may have more support or motivation to track outcomes if it is an expectation of their position, whereas a nonfaculty pharmacist may lack adequate time and resources to evaluate outcomes. Regardless, the majority of respondents indicated that they do not track outcomes, which could represent a missed opportunity to demonstrate the value of psychiatric pharmacy services to health care organization administrators or payers.

Pharmacists in the outpatient setting were much more likely to report having prescriptive authority than those practicing in inpatient settings. This is likely due to multiple reasons, including the acute nature of some inpatient settings, differences in how psychiatric pharmacists are utilized in outpatient versus inpatient settings, and regulations that could inhibit inpatient pharmacists' ability to provide direct patient care. Many patients admitted to an inpatient psychiatric unit have a level of acuity that could require care by a psychiatrist as opposed to a psychiatric pharmacist. Another consideration is how services are billed differently in these two settings. In the inpatient setting, services are typically bundled, and payment is tied to a diagnosis-related group code or daily rate, which covers all services provided in the inpatient setting. This is in contrast to outpatient services, which are largely fee for service, providing a possible mechanism to cover the cost of a psychiatric pharmacist. Prescriptive authority is also a term used exclusively in outpatient settings in which prescriptions are written. In the inpatient setting, the scope of practice of pharmacists is typically dictated by protocols approved by medical executive committees and are considered orders rather than prescriptions. In addition, the Joint Commission and most state regulations do not recognize pharmacists as being able to perform the required history and physical required for inpatients, to make the initial diagnosis for the patient, nor to develop the treatment plan for the inpatient admission.¹⁷

The similar numbers of BCPPs versus non-BCPPs who provide care to patients with psychiatric disorders may be

reflective of the smaller number of BCPPs versus other board-certified pharmacy specialties. As of May 2020, there are approximately 1200 BCPPs in comparison to 4300 board-certified ambulatory care pharmacists, 4600 board-certified geriatric pharmacists, and 26 000 BCPSs.¹⁸ As demand for psychiatric services currently exceeds the existing supply of BCPPs, having non-BCPPs work alongside BCPPs can help further expand access to care, especially in nonpsychiatric specialty settings in which other general medical comorbidities are common. Although no difference in time in clinical practice or source of funding between BCPPs and non-BCPPs was found, further research is needed to determine how BCPPs and non-BCPPs interface in these clinical settings and if there is a difference in the type of patients or disease states seen by these providers, especially among those providing direct patient care and those who are not. As nearly half of the respondents treated nonpsychiatric disorders, such as diabetes, other metabolic conditions, and cardiovascular and neurologic disorders, there may be opportunities for BCPPs to partner with non-BCPPs in providing nonpsychiatric care to these patients. This would allow additional time for BCPPs to manage psychiatric conditions, in which they have specialized training and expertise, for a greater number of patients. Although depressive and anxiety disorders are some of the most prevalent psychiatric conditions, less than half of the respondents were directly treating these disorders in their practices. The rates of treatment of bipolar disorder and schizophrenia were even lower at less than 40%. This may speak to the need to triage the care of patients to utilize BCPPs in a capacity that capitalizes on their expertise rather than have them devote time to treating other general medical conditions that can be managed by a non-BCPP. This is especially important considering the limited number of BCPPs. Alternatively, having a psychiatric pharmacist provide care for individuals living with a mental illness for all of their conditions may improve outcomes for both psychiatric and other medical conditions, which are often inadequately treated and contribute to high rates of morbidity and mortality in this population. In certain treatment settings, the utilization of a BCPP in the direct care of both psychiatric and nonpsychiatric illnesses may be appropriate or even needed based on the overall availability of other clinicians, such as in more rural or underserved areas. Given the limited numbers of BCPPs and the great diversity of practice models reported in the survey, further exploration is needed to better understand the optimal role of BCPPs.

There are several limitations that should be noted for this study. First of all, the northeastern region of the country was underrepresented in this sample, and nearly 11% of the respondents were from the state of California. This is important as the scope of pharmacy practice, in general, is more limited in the northeastern region of the country,

whereas pharmacists in the state of California may have a more expanded scope of practice as advanced practice pharmacists. This may have skewed the data in favor of showing a greater number of pharmacists, nearly 50%, having prescriptive authority. Likewise prescriptive authority may have been underreported in the inpatient setting as this terminology is not typically used in these settings but rather reflected in protocols approved by medical executive committees. Although this survey was sent out to more than 1000 pharmacists in total, it should be noted that only one-quarter of all US-based BCPPs responded. Therefore, these results may not be reflective of the clinical practice of the majority of pharmacists who are psychiatric pharmacy specialists. Additionally, subjects may have self-selected to participate in this study because of current involvement in an advanced scope of practice. Finally, as this was a descriptive study that only looked at the characteristics of pharmacists providing clinical services, the ability to draw conclusions regarding the value of these services in terms of improving treatment effectiveness, safety, and rates of medication adherence, all of which impact patient outcomes, is limited, and not within the scope of this paper.

This study provides baseline data on the qualifications and practice activities of pharmacists who provide clinical care to patients with psychiatric disorders. Further research is critical to determine how these services directly or indirectly impact outcomes, such as health care costs and mortality and morbidity, to further elucidate the value of psychiatric pharmacists as a vital member of the health care team. Future studies that expand upon these findings may also help answer other questions, including the nature of the relationship between non-BCPPs and BCPPs who practice in the same practice setting and how this relationship can be used to better triage patients and expand access to care.

Conclusion

The CPNP recommends that pharmacists providing psychiatric care are BCPPs with newer providers completing 2 years of residency training prior to becoming board certified; these credentials were observed in the majority of the respondents in this study. Many of these pharmacists engage in an advanced scope of practice, including prescriptive authority, which is reflective of their training and experience. However, there still remains a critical need to examine the impact of psychiatric pharmacy services on patient outcomes. Potential opportunities to coordinate between non-BCPP and BCPP providers to increase access to care for persons with both psychiatric and other general medical comorbidities also exist. Studies examining the value of psychiatric pharma-

cists should also explore how these relationships could be optimized.

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