PRACTICE PATTERNS AND MEDICAL PROFESSIONAL EVALUATIONS OF PRESCRIBING PSYCHOLOGISTS

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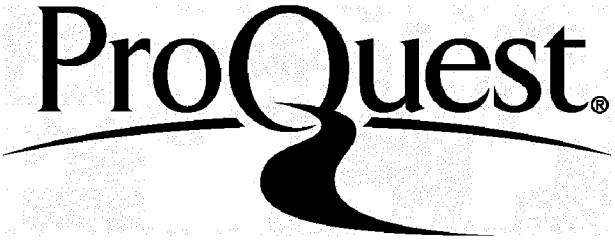

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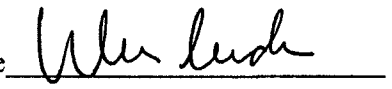
Signature 

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Abstract

Practice Patterns and Medical Professional Evaluations of

Prescribing Psychologists

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The issue of prescriptive authority for psychologists (RxP) remains a controversial topic within psychology and other closely associated medical fields (McGrath, 2010). Despite concerns regarding the competency of prescribing psychologists and about the impact of RxP on professional psychology, limited research exists related to how such providers practice or are perceived by their medical colleagues. The current study aimed to examine three topics. The first topic had to do with how prescribing psychologists are perceived by themselves and by other medical professionals working with these prescribers. The second topic was current practice patterns of prescribing psychologists, with the expectation that those practices will reflect their core psychosocial training. The third topic was an exploration of factors associated with positive perceptions of prescribing psychologists among medical colleagues, and openness to RxP. Two surveys were developed that included forced-choice questions, quantitative estimates, and open-ended questions, one for prescribing psychologists and one for their medical colleagues. Participants were recruited via email and various professional association and state-based listservs. Prescribing psychologists were asked to forward a link to the second survey to medical professionals familiar with their work as prescribers. The responses of 30 prescribing

psychologists and 24 of their medical colleagues were analyzed. Results suggested that the work of prescribing psychologists was viewed favorably by both prescribing psychologists themselves and their medical colleagues. The prediction that prescribing psychologists' practices would still consist primarily of psychotherapy was not supported. Further, perceptions of psychologist prescribers were largely favorable regardless of length of time working with the psychologist, type of medical professional responding, and frequency of interaction. Study conclusions, limitations and suggestions for future research are discussed.

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Dr. Robert McGrath: I would like to thank you for your mentorship and unwavering support throughout the tenure of my doctoral training and with this project. Your guidance over the years has helped me to grow as both a researcher and clinician. Your steadfast encouragement and commitment to my professional development has helped me to reach goals that I thought were out of sight. Thank you for all of your hard work and mentorship.

DEDICATION

This dissertation is dedicated to my mother and father. Thank you for your love and support.

Extended Literature Review

Over the past two decades the issue of prescriptive authority for psychologists (RxP) has emerged as a highly controversial topic, triggering debate within the field of psychology and within the associated medical fields of psychiatry, primary care medicine, and nursing (McGrath, 2010). Various professional organizations have released official statements regarding RxP, and survey research has revealed that while the majority of psychologists favor the movement, notable opposition remains within the field. Additionally, medical professionals have been found to generally oppose RxP, primarily citing training and safety concerns as reasons for opposition. At the same time, other non-physician prescribers have successfully demonstrated the ability to safely prescribe, and while limited in nature, preliminary evaluations of existing psychologist prescribers have found no adverse patient outcomes.

At present, psychologists have legally obtained prescriptive authority in only a handful of localities: Indiana (under very limited conditions), Guam, New Mexico, and Louisiana. Prescribing by psychologists is however occurring in several branches of the federal government, specifically the Indian Health Service, Public Health Service, and all branches of the military that offer health care services. Additionally, legislation will soon be introduced that would allow psychologists to prescribe within the Veterans Health Administration. With the support of the American Psychological Association (APA), proponents of the RxP movement are seeking the passage of further legislation of this nature, and are hoping to see additional state and federal programs adopt similar measures.

While support for the RxP movement has gained some momentum in recent years, the debate regarding its expansion continues. Several issues are particularly central to the debate, including the quality and extent of training necessary for new prescribers, the possibility of

increased health and safety risks, the potential shift in identity for the field of clinical psychology, ethical considerations, and the feasibility of implementation.

Much of the current research regarding psychologist prescribers has been conducted through surveys of attitudes towards RxP among professionals, both within the psychological and medical communities. Those survey participants however have not typically worked as prescribing psychologists, nor are they necessarily familiar with the performance of prescribing psychologists. Almost no research has been conducted related to the current practice of prescribing psychologists across various settings (institutions, private practices, and community based health care), the confidence of such prescribers in their knowledge and practices, or the confidence of medical professionals working with these psychologist prescribers. Only one study, by Shearer, Harmon, Seavey and Tiu (2012), has examined the perceptions of medical professionals actually working with prescribing psychologists. This study found that physicians held a very positive opinion regarding the knowledge, competence and safety of the prescribing psychologist with whom they worked. There is only one known study, by LeVine, Wiggins and Masse (2011), evaluating practice patterns of prescribing psychologists across states, and one other recent brief study by Vento (2014), surveying the practice patterns among prescribing psychologists in New Mexico. However, the studies mentioned used fairly restricted samples. Therefore, it appears that much of the debate surrounding this issue is based on unsupported assumptions, and a large-scale study of psychologist prescribers and their practices is warranted.

The goal of the proposed study therefore was to evaluate the experiences and level of confidence in the RxP model demonstrated by current prescribing psychologists and medical staff working in conjunction with these prescribers. Furthermore, the study aims to provide a research-based foundation addressing key issues identified by both proponents and detractors of

the RxP movement, through the collection of information related to the practice patterns of current prescribing psychologists. In this way, this study's findings may prove useful to both the mental health and medical communities, by increasing the understanding of how prescribing psychologists seem to differ from other prescribers.

This chapter will begin with a brief discussion of the history of this relatively new movement, focusing on one of the first practice-based models and a key source of research related to RxP outcomes. That practice-based model was the Department of Defense (DoD) Psychopharmacology Demonstration Project, developed and evaluated within three branches of the military in the 1990's. The development of legislation and training programs will also be discussed.

Following an overview of the history, this chapter will address ongoing issues in the debate for the field of psychology, as well the medical fields potentially impacted by RxP, such as primary care, psychiatry and nursing. Topics discussed will include concerns related to training, access to care, impact on the identity of psychology, and new ethical considerations for clinicians integrating pharmacotherapy and psychotherapy.

History of the Prescriptive Authority Movement

In 1981 a task force established by the APA Board of Professional Affairs explored the potential for the practice of psychology to grow in scope to include physical intervention in addition to psychosocial intervention for the treatment of mental disorders. This task force predicted that the role of psychologists would expand over time, with psychologists moving into the role of prescribers, and the scope of intervention and treatment would likely become much broader for such practitioners (McGrath, 2010). A second task force report on physical intervention in 1986 suggested that with additional training a new standard of treatment for

psychologists could encompass a more expansive approach to intervention for psychological and behavioral disorders, extending beyond the psychosocial province (McGrath). McGrath noted that this proposed change in scope of practice coincided with the growing popularity of a biomedical conceptualization of mental illness. In 1989 the APA Board of Professional Affairs endorsed advanced training in psychopharmacology for psychologists, and in 1995 the APA officially endorsed the RxP movement (Fox, 2003; McGrath).

While APA consideration of this issue was progressing, in 1984 Senator Daniel Inouye of Hawaii, during a presentation for the Hawaiian Psychological Association, publicly recommended that psychologists pursue prescriptive authority. Senator Inouye argued that the RxP movement could potentially increase the availability of quality prescribing providers to serve a much broader patient base (Fox, 2003). DeLeon, Fox and Graham (1991) noted that at the time of Senator Inouye's speech there was little enthusiasm within psychology for the concept of psychologist prescribers, and strong opposition already existed outside of psychology.

As a result of Senator Inouye's interest in RxP, in the 1990s the DoD Psychopharmacology Demonstration Project, which is described in more detail below, was established in order to train psychologist prescribers in the military, and to evaluate the RxP model. Psychologists working for the federal government later continued on to gain the right to prescribe in programs such as the Public Health Service and the Indian Health Service. However, opportunities in these services remain limited, because these agencies tend to defer to the state in which the clinician is licensed to define scope of practice. Other areas of the Federal government however define scope of practice independently of state licensure. McGrath (2010) noted that the Army, Navy and Air Force have all outlined specific criteria for allowing psychologists to prescribe to both civilian and active duty members regardless of state licensure.

Department of Defense Developments

The DoD Psychopharmacology Demonstration Project spanned the years 1991 to 1997 (Newman, Phelps, Sammons, Dunivin & Cullen, 2000), and was founded in part because of positive outcomes demonstrated by individuals in the military in response to psychological interventions (Gutierrez & Silk, 1998). The DoD believed that military personnel might benefit from having traditional psychosocial providers prescribe to them. Initially however, this proposal was met with intense opposition from the medical community, even hindering the identification of an appropriate site for the training program (Gutierrez & Silk).

In 1990 President George H. W. Bush signed a law authorizing the creation of a two-year postdoctoral training program in psychopharmacology for military psychologists at the Uniformed Services University of the Health Sciences in Bethesda, Maryland. Eventually, the DoD trained ten Army, Navy, and Air Force psychologists through the project. Although the curriculum evolved across the duration of the training program, the original iteration of the DoD training model required psychologists to complete a two-year sequence of medical school coursework (Sammons & Brown, 1997). In that first version, classroom training and practicum instruction were concurrent, with 50% of the trainee's time devoted to coursework and 50% to direct work with patients (Sammons & Brown). Based on feedback related to the feasibility of this concurrent training model, the second and third iterations of the training model condensed the didactic portion into one year, with clinical work occurring in the second year of training. Over time, the training program was adjusted further, with an increase in required contact hours and a more tailored curriculum, including the development of courses designed to fit the needs of prescribers such as Introduction to Primary Care (Sammons, 2002; Sammons & Brown).

While the DoD program was relatively short-lived, it is illustrative of its unique and

controversial nature that four large-scale evaluations were conducted of the program (Newman et al., 2000). Evaluations were completed by both governmental offices and independent contractors. Snippets from those evaluations are often cited by both supporters of RxP (Newman et al.) and its opponents (Bush, 2002). The supporters focus on quotes describing the competence and safety of the participants, while opponents point to those portions of the reports that focused on limitations in the practice of the participants, or suggest that the results might not be generalizable to situations outside the military.

Specifically, evaluations of the project were conducted by the American College of Neuropsychopharmacology (1991-1998) and by Vector Research (1996) as independent contractors, as well as by the U.S. Government Accountability Office (GAO), in 1996 and 1997. The evaluations demonstrated that the military psychologists had been properly trained, and failed to identify any adverse patient outcomes for those seeking treatment with a prescribing psychologist (McGrath, 2010). The GAO (1999, p. 9) reported

> The graduates' clinical supervisors have the most extensive knowledge about the graduates' clinical performance because they have been responsible for reviewing the graduates' charts, discussing cases with the graduates, and observing the graduates' interactions with patients. Without exception, these supervisors—all psychiatrists—stated that the graduates' quality of care was good. One supervisor, for example, noted that each of the graduate's patients had improved as a result of the graduate's treatment; another supervisor referred to the quality of care provided by the graduate as 'phenomenal.' The supervisors noted that the graduates are aware of their limitations and know when to ask for advice or consultation or when to refer a patient to a psychiatrist. Further, the supervisors noted that no adverse patient

outcomes have been associated with the treatment provided by the graduates.

However, the GAO also concluded that the project was not cost effective, especially given an oversupply of military psychiatrists at the time (since the country was then at peace), and deemed the project unnecessary (U.S. GAO, 1997). Later, the APA funded an independent reanalysis of the GAO's findings, and concluded that the GAO evaluation was flawed in its determination of cost effectiveness, as it combined start-up and program evaluation costs with actual training costs when evaluating the price of the program (McGrath, 2010). While cost was a primary concern related to this program, ironically the evaluations were more expensive than the project itself, and by the end of the DoD project in 1997 the cost of the evaluation contracts surpassed the total classroom training costs (Newman et al., 2000). The APA pointed out that the GAO overestimated training costs, because it assumed these costs would be equivalent to training costs for medical students.

The evaluation reports however were consistently positive concerning the quality of care provided by the DoD graduates. While the initiative was ultimately terminated, it was not because of any apprehension about patient harm, but primarily because of financial concerns and issues related to implementation (Ball, Kratochwill, Johnston, & Fruehling, 2009; Shearer et al., 2012).

Despite promising evaluations, criticism of that program continued, and Bush (2002) outlined some of the outstanding issues and concerns. The author noted that the DoD psychologists had close contact and access to consulting physicians, which might be less readily available to prescribing psychologists in other settings. The author also claimed that military prescribing psychologists treated a more physically and mentally healthy population than might be found in civilian settings. He pointed out that the DoD psychologists did not need or receive

training for a large variety of populations, including pediatric, geriatric, or medically complex patients often encountered in general treatment settings. Finally, the author noted that training models for prescribing psychologists outside of the military were usually not as extensive as the DoD curriculum, and therefore might be less adequate. The potential lack of generalizability for the DoD project prompted the National Alliance on Mental Illness to release a statement in 2002 withholding support for the RxP movement stating, "the only research conducted on psychologists' prescribing privileges, the DoD, was conducted under circumstances very different from those experienced by mental health practitioners in the public sector. DOD psychologists practice under controlled circumstances, with specific formularies and close collegial relationships with psychiatrists. Moreover, with some exceptions, they tend to treat patients with less serious mental illnesses" (National Alliance on Mental Illness, 2002).

In the years immediately following the termination of the Psychopharmacology Demonstration Project, little progress was made in allowing psychologists to prescribe in the military (Norfleet, 2002). However, perhaps in response to a greater need for providers in the wake of two wars, in recent years all three branches of the military offering health care services (Navy in 2003, Air Force in 2007, and Army in 2009,) have adopted regulations authorizing prescribing for psychologists who have completed one of the civilian training programs.

State Legislative Developments

Outside of federal agencies, the granting of prescriptive authority is determined by a psychologist's state of licensure, and current state authorization is restricted to Indiana (under limited conditions), New Mexico and Louisiana, with similar laws pending in several other states including New Jersey and Illinois. McGrath (2010) provided an overview of the legislative developments of the movement. In 1993 the licensing law for psychologists in Indiana was

revised to allow prescriptive authority for psychologists participating federally sponsored training or treatment programs, in order to allow authority for graduates of the Psychopharmacology Demonstration Project. This was the first instance where a state approved psychologist prescribers using their current degrees. However, since the number of graduates from federal training programs was limited, as of 2010 not a single psychologist was prescribing in Indiana.

In 1991 the territory of Guam passed legislation allowing psychologists to become prescribers as long as they had a collaborative agreement with a physician in the same specialty area. However, because of issues associated with implementation of regulations, no psychologist in Guam has yet achieved prescriptive authority. New Mexico and Louisiana also both passed legislation authorizing psychologists to prescribe in 2002 and 2004 respectively. In Louisiana, the legal title for a psychologist prescriber is *medical psychologist*. The Louisiana law requires completion of a master's degree in psychopharmacology, and passage of a national licensing examination known as the Psychopharmacology Examination for Psychologists (PEP), before prescriptive authority is awarded. The medical psychologist at first had to obtain concurrence from the patient's physician on all prescriptive decisions, and was unable to prescribe to patients without a primary care physician. However, subsequent Louisiana legislation amended this requirement, and now after three years of practice without any complaints, a medical psychologist can prescribe without physician concurrence.

In the state of New Mexico, after completing coursework, a psychologist must first complete an additional 480 hours of practicum experience, including 80 hours of physical examination training, and then work as a conditional prescriber under the supervision of a physician for two years. Only after this supervisory period may the psychologist in New Mexico

prescribe independently, and continued collaboration (not necessarily concurrence) with a primary care physician is required.

Training

In 1990 the APA established a task force to address the psychologist's potential role in pharmacotherapy, and the task force went on to put forth training guidelines appropriate for psychologist prescribers (Smyer et al., 1993). The task force identified three levels of training to meet the different levels of involvement: basic psychopharmacology training for all health care psychologists (Level 1), training for collaboration with medical staff regarding psychopharmacology (Level 2), and training for independent prescriptive authority (Level 3).

In 1993 a company called Prescribing Psychologists Register began training psychologists in preparation for prescriptive authority for the first time (Levant et al., 2003). In 1996, another APA task force developed a curriculum for Level 3 training. This included a minimum of 300 didactic contact hours, experience with 100 patients, licensure as a health care psychologist, and the completion of courses in various content areas. Once an APA-approved curriculum was in place, the Prescribing Psychologists Register curriculum was revamped to comply with the new standard, and additional training programs emerged offering certificates and ultimately master's degrees aimed at preparing psychologists to become prescribers (McGrath, 2010). However, many of these programs ultimately closed, and presently there are only four remaining programs offering this training; Alliant International University, Fairleigh Dickinson University, New Mexico State University, and the University of Hawaii.

The APA training model for RxP was updated once again in 2009 through another task force. The revised guidelines included a recommendation for 400 didactic contact hours in the basic sciences, neuroscience, physical assessment and laboratory examinations, clinical medicine

and pathophysiology, clinical and research pharmacology, psychopharmacology, clinical pharmacotherapeutics, research, and professional ethical, and legal issues (Ball et al., 2009). In addition to the didactic training component, APA recommended that prescribing providers complete a practicum treating 100 patients with psychopharmacology.

The Debate

As noted, the debate regarding psychologist prescribers continues within the field of psychology, and in various medical fields. Central concerns and issues are related to quality of training, access to care, medication involvement and safety risks, financial incentives, and incorporation into practice.

Training

The depth and quality of training for prescribing psychologists is a central point of contention in the ongoing debate. Opponents of the RxP movement argue that there is a fundamental deficit in the undergraduate level of foundational science coursework required of psychology students seeking entry into doctoral programs. This stands in contrast to the more demanding science course prerequisites for nurse practitioners and physician assistants (Ball et al., 2009). This criticism has also been leveled at the APA task force training model recommendations for prescribers, since undergraduate courses in the natural sciences are not included in those requirements. Critics point out that this model assumes that clinicians can begin psychopharmacology coursework without foundational studies in the basic sciences (Sechrest & Coan, 2002). Robiner, Tumlin, and Topkins (2013) argued that such foundational science knowledge is critical to understanding how the body responds to medication, comprehension of the complex interaction of bodily systems, as well as the impact and interaction of various medications.

Supporters have countered with the argument that basic science coursework is incorporated into the curriculum itself. For example, Fairleigh Dickinson's Master of Science Program in Clinical Psychopharmacology requires courses that cover clinical medicine, anatomy and physiology, pathophysiology, neuroscience, and neuropharmacology. Further, the absence of basic science prerequisites has not been found to lead to any adverse patient outcomes. It is possible however that the RxP movement may ultimately motivate a discussion regarding changes to undergraduate prerequisites for programs that train health care psychologists.

Robiner et al. (2013) also claimed the PEP is not as rigorous as the testing required of medical students pursuing licensure as physicians, and sitting for United States medical licensing examinations. The authors argued that the comparatively minimal requirements of the PEP in contrast to the stepped and sequential United States Medical Licensing exams for physicians may highlight the insufficiency of training for prescribing psychologists.

In response to criticisms focusing on differences between RxP training and training for physicians, proponents of the RxP movement have pointed to the success of practicing non-physician prescribers (nurse practitioners, optometrists, dentists), also with less rigorous physician training (Bell, Digman, & McKenna, 1995). Kaplan and Dacunto (2014) noted that a parallel can be made between psychologists and optometrists, since optometrists can prescribe medication nationally for eye related diseases, even though their training differs substantially from that of ophthalmologists. Further, when compared to physicians, nurse practitioners who prescribe have demonstrated comparable outcomes, signaling that a medical school education is not necessarily a prerequisite for safe and effective prescribing (Lenz, Mundinger, Kane, Hopkins, & Lin, 2004; Mundinger et al., 2000; U.S. Congress Office of Technology Assessment 1986). Durie, Lesse, Roberts, Rowland, and Venning (2000) conducted a randomized trial of

approximately 1300 patients receiving care from either a nurse or general practitioner. The researchers found no significant difference in prescribing patterns or health status outcomes between these groups. In fact, even after controlling for length of consultation, as nurses tended to spend more time with patients, patients reported greater satisfaction after consultations with nurse practitioners,

Muse and McGrath (2010) sought to compare training programs for prescribing psychologists with training for physicians and other prescribers. At the time of comparison the authors reported that there were five programs offering a postdoctoral master's level degree in clinical psychopharmacology for psychologists, all requiring doctoral level licensure, and most co-located in schools with clinical doctoral programs. The researchers compared the training of psychiatric nurse practitioners, prescribing psychologists, and physicians up to the point at which they were legally authorized to prescribe. In conducting this comparison the researchers collected information across multiple sources of data, including curriculum guidelines issued by national organizations, and curricula from training programs. A distinctive element of this analysis was their inclusion of topic areas they considered relevant to optimal practice, not emphasized in traditional medical education such as research training.

The researchers found that there were some quantifiable benefits to the training models created for psychologists as compared to those created for other prescribers. While the authors found that physicians received greater instruction in biochemistry and neuroscience, the psychologists' curriculum incorporated more clinical experience in psychopharmacology, and additional benefits of postdoctoral psychopharmacology training for psychologists were revealed as well. For example, psychologists trained to prescribe were found to have received over four times as much training in pharmacology as physicians, and six times as much as psychiatric

nurse practitioners. Additionally, psychologists received 15 times more training in the diagnosis of mental health disorders than physicians, and eight times more of this training than psychiatric nurse practitioners. Finally, throughout their graduate education psychologists were found to have received 27 times as much non-medication based therapeutic intervention preparation as physicians, and eight times as much as psychiatric nurse practitioners.

Heiby (2010) noted some flaws in the Muse and McGrath (2010) study, specifically, that the study failed to consider undergraduate prerequisites, apprenticeships, and post-degree training such as residencies obtained at the point of prescribing, suggesting that in practice physicians do not prescribe with the minimum required training. Heiby (2010) also argued that while physician training is standardized, nurse practitioner training is not always designed for independent prescriptive authority, making it difficult to generalize by sampling a small number of programs. Heiby (2010) also criticized the authors for failing to justify their selection of content areas.

In response to Heiby (2010), McGrath and Muse (2010) argued that the training practices of existing professionals are not relevant to defining the minimum training considered necessary for competent prescribing. The authors argued that if physician training practices were assumed to be the standard for minimum competence, physicians would be the only clinicians providing psychotherapy, prescribing, or reading blood pressure. However, as noted earlier, other professions have demonstrated safe and efficacious prescribing practices under different training models. Further, in response to Heiby's (2010) accusation that the content areas selected by Muse and McGrath (2010) were unjustified, the authors responded that the content areas were selected for their face validity, as they covered logical competencies needed for integrating pharmacotherapy into a more all-encompassing therapeutic intervention. They noted that the

content areas included in the analysis are all necessary for treating mental health conditions, even if those areas are not traditionally or thoroughly covered in nurse or physician curriculums. Additionally, in response to Heiby's (2010) critique of Muse and McGrath's (2010) sampling of nursing programs, the authors noted that nurse practitioner programs are not divided into those that prepare students for independent vs. supervised practice, and nursing licensing boards do not make such a distinction. It seems that in the debate regarding training, the Muse and McGrath (2010) and Heiby (2010) arguments reflect the larger shortage of outcome studies comparing psychologist prescribers to physicians and nurses. If such outcome studies existed, demonstrating a lack of difference, as has been found in comparisons of physicians and nurse practitioners, it would be difficult to argue that the differences in training among such clinicians lead to unsafe practices. Outcome studies comparing providers might also furnish insight into which critical content areas for training demonstrate more favorable outcomes.

One of the key points made by proponents of the RxP movement, arguing for the safety of the prescribing psychologist, is that a psychologist's strong foundational training in psychosocial intervention may lead prescribing psychologists to prescribe less frequently, and may move more patients safely off of medication, compared to other prescribers lacking such training (McGrath, 2010). However, to date no research exists evaluating this hypothesis.

A very different line of criticism of the APA training model has been put forth by Resnick, Ax, Fagan, and Nussbaum (2012), who are psychologists supportive of RxP. They proposed that a doctoral-level training model might prove to be economically advantageous for psychologists, and result in the selection of students for doctoral training with a much stronger undergraduate background in natural sciences. Fagan, Ax, Liss, Resnick and Moody (2007) found hat psychologists' interest in pursuing a degree in psychopharmacology declined once the

cost of that degree exceeded $10,000 and the time to completion was greater than two years. Based on these findings, Resnick et al. proposed that integration of RxP training directly into doctoral programs might be more practical and enticing. Ax, Fagan and Resnick (2009) also hypothesized that doctoral-level involvement in the training might lower training costs incurred obtaining an additional master's degree, and also add value to the doctoral degree.

Access to Care

A key argument for proponents of the RxP movement is that it could increase the number of mental health professionals available to treat underserved populations (Gutierrez & Silk, 1998). At present, a general medical practice is the most frequent treatment setting for individuals with psychological disorders, and in the majority of doctor visits where psychotropic medication is prescribed the prescriber is a non-psychiatric prescriber (Mark, Levit, & Buck, 2009; Pincus et al. 1998; Wang et al. 2006). Despite a growing need, the overall number of psychiatrists has actually fallen in recent history (Rao, 1993), especially in remote areas. As a result, psychiatric visits are decreasing in duration, and such visits often last less than ten minutes. Psychiatry also has the lowest rate of participation in insurance of all medical specialties (Bishop, Press, Keyhani, & Pincus, 2013; Olfson, Marcus, & Pincus, 1999). Kaplin and Dacunto (2014) made the point that if psychologists continue to see patients weekly, the amount of time they spend with patients would be substantially greater than other prescribers who typically meet with patients monthly. Further, prescribing psychology may represent a more efficient model of treatment as patients can receive all of their mental health care from one provider.

Oliveira-Berry, DeLeon, and Jennings (2004) contended that psychologist prescribers may be particularly welcome in rural areas where the shortage of psychiatrists is most acute, and

appointments may only be possible once every several months. In fact, Thomas, Ellis, Konrad, Holzer, and Morrissey (2009) conservatively estimated that 96% of U.S. counties do not have enough prescribers with specialty training in mental disorders to meet the need. Oliveira-Berry et al. (2004) argued that having more providers who can see patients more frequently and prescribe or adjust medications as needed might provide relief for underserved populations, and also relieve the pressure on rural primary care specialists who are often tasked with the treatment of individuals with mental disorders. Vento (2014) surveyed psychologist prescribers in New Mexico and found that over 90% accepted Medicaid payments, and 62.6% of patients served were reported by the prescribers to be living in rural areas, demonstrating the ways such prescribers might be increasing access to care.

Moore and McGrath (2007) also argued that, particularly for the military, an increase in prescribing psychologists could reduce the demand placed on non-psychiatric physicians, freeing medical staff to allocate attention to other urgent medical needs. In a similar vein, Ax et al. (2008) proposed that the RxP model could prove beneficial to the incarcerated population. These authors reported that mental health services in correctional settings are already provided by a range of professions, including correctional counselors with minimal and often informal training in mental health issues. In fact, Fagan et al. (2004) found that psychologist interns and training directors working in correctional settings were more enthusiastic in their support of prescriptive authority than was true of those working in college counseling centers, medical schools, the Department of Veterans Affairs, and other settings. The authors postulated that this positive view may be due to a perceived need that does not exist in other settings, such as medical schools, where there are sufficient numbers of competent prescribers. Further, the authors indicated that doctoral internships in correctional facilities often already provide training in

psychopharmacology, demonstrating the established recognition of the importance of psychopharmacological knowledge for quality mental health care in correctional settings.

Fagan et al. (2004) also made the case for the need for psychologist prescribers in Department of Veterans Affairs hospitals, as the number of veteran patients has increased in recent years. In those facilities, prescribing psychologists might improve access to health care in a setting where they could easily team with a primary care physician. As noted previously, it is anticipated that legislation will be introduced soon authorizing psychologists to prescribe within the Veterans Health Administration.

Not everyone concurs however that prescribing psychologists would increase access to care, however. For example, Lavoie and Barone (2006) believed that prescribing psychologists are likely to be concentrated in the same metropolitan areas as other prescribers. Robiner et al. (2013) did not see the decrease in the number of psychiatrists as an argument for psychologist prescribers, but rather as a call for enhanced training for primary care physicians, nurse practitioners and physicians' assistants, which could possibly create a far larger pool of competent prescribers than would result from allowing psychologists to prescribe. The authors also recommended further training for psychologists to work collaboratively alongside physicians. These authors believed that this collaborative care model might be a more sensible solution to improving quality and access to care, by applying the strengths of training that both disciplines offer. Further, they argued that collaborative care may be a more beneficial solution to mental health care barriers, as individuals may be reluctant to seek out specialty mental health care for various reasons such as stigma, financial concerns, or other impediments. The authors did not address the issue of how many medical providers could or would pursue additional training without any implications for financial return.

Medication Monitoring

Proponents of the RxP movement are often quick to point out that many treating psychologists are already well aware of their patients' medical regimens, and the therapist is often included as part of a team making medical decisions, or kept apprised of medication changes or medical issues (Bell et al., 1995). VandenBos and Williams (2000) conducted a survey assessing the professional activities of 596 practicing psychologists who were APA members. The majority of the practitioners surveyed indicated that they were involved with a patient's medication regimen in a variety of ways. It is notable that 99% of the respondents reported that they have at some time collaborated with a physician who prescribed psychotropic and other types of medication, and 93% reported that they were currently collaborating with a physician in this manner. Additionally, 95% of respondents indicated that they had made recommendations for medication based on having conducted an intake evaluation or a psychosocial history, and approximately 94% of the responding practitioners indicated they had consulted with a physician about the need to alter a patient's medication. Finally, 87% of these practitioners reported having been directly involved in the decision-making process about whether to prescribe medication to a patient. Based on these findings, prescriptive authority might be conceptualized as a sequential step in a psychologist's care of a patient, rather than a new field of endeavor. A specific counter argument to this point was not found in the literature opposing RxP. The only related argument found was a more general argument that for the field of psychology, prescribing represents a significant departure from traditional ways of conceptualizing pathology in favor of a more medical model (Robiner et al. 2002).

Safety

Medical professionals in particular have raised significant concerns regarding the safety

risks associated with allowing psychologists to prescribe. These concerns relate to a prescribing psychologist's ability to account for drug-drug interactions, or the impact on comorbid health problems when making prescribing decisions (Bell et al., 1995). However, in 2009 Fox, DeLeon, Newman, Sammons, Dunivin, and Baker reported that over 70 psychologists certified to prescribe in New Mexico and Louisiana had all together written over 250,000 prescriptions "without incident" (p. 264).

Shearer et al. (2012) conducted the first survey of medical staff working with a primary-care prescribing psychologist model, in which a prescribing psychologist worked as part of a team in a primary care clinic in a major U.S. Army medical facility. The authors found that having a prescribing psychologist embedded in this particular family medicine clinic was regarded by medical staff as helpful, safe, convenient, and overall resulted in better patient care outcomes.

The participants were all medical providers ($N = 65$), and most were physicians or residents. Almost 94% of the sample reported that they had confidence in the safety of referring their patients to a prescribing psychologist for psychotropic medication management. In addition, 95% of respondents reported having confidence that the prescribing psychologist would prescribe appropriate medications and dosages, and 93% had confidence that the prescribing psychologist could determine when patients needed to be referred for additional medical evaluation. This was the first study done to evaluate the safety of psychologist prescribers since the previous studies that focused on the Psychopharmacology Demonstration Project.

Opponents of RxP have raised concerns that available data is insufficient to provide an adequate test to form the basis for widespread approval of prescriptive authority (Lavoie & Barone, 2006). Although Lavoie and Barone noted such concerns prior to Shearer's (2012)

publication, even with the addition of that study the formal research evidence for safe prescribing has not grown substantially. Lavoie and Barone noted that major safety concerns still exist, particularly in regard to whether psychologists would be able to recognize the limits of their own expertise and recognize when to refer a patient to an appropriate physician, for example in the case of complex drug interactions.

Financial Incentive

McGrath (2010) has indicated that prescriptive authority may in time increase financial opportunities in the field of psychology. The author has compared the potential for financial gain to the advances that nurses achieved when first obtaining prescriptive authority. For example, advanced practice nurses who can prescribe medication have branched out into roles traditionally reserved only for physicians. Psychologists who are authorized to prescribe in New Mexico and Louisiana are also beginning to fill roles previously available only to physicians, such as providing psychiatric coverage in emergency rooms. Several have also become very involved in providing training in clinical psychopharmacology, including to family practice residents (McGrath, 2010), and have also become co-authors with physicians on major texts on psychopharmacology (Julien, Advokat, & Comaty, 2011; Stahl & Moore, 2013). In this way the prescribing movement offers potential for an enhanced status for psychologists; increased financial opportunities through various means, including additional reasons for patient referrals; and the potential for increased reimbursement for providers.

Incorporation into Practice

To date there seems to be only one study that has surveyed prescribing psychologists across states on how prescriptive authority has impacted their practices. In the fall of 2008, LeVine et al. (2011) conducted an interview-based qualitative study of psychologists prescribing in private practice in Louisiana and New Mexico, addressing some of the previously enumerated

issues in the debate. The researchers chose to survey only psychologists in private practice, as these professionals were not bound by institutional or organizational rules. The researchers contacted psychologists practicing in New Mexico ($N = 9$) and Louisiana ($N = 14$), 17 of whom participated.

The psychologists all reported that their training and practicum had prepared them to prescribe safely and effectively. The number of patients on medication ranged from 31% to 91%. Of the 17 participants, 13 indicated they were seeing more seriously mental ill patients and more Medicaid patients since starting to prescribe. All those surveyed reported positive relationships with pharmacists. Over half reported they were making "considerably" more money than previously. All had increased their fees, and many indicated that they were able to discontinue managed care contracts and move to fee for service plans. Half of the sample that saw patients from a managed care population reported a slight increase in managed care income. However, two of the 17 reported losing money on Medicaid patients, although no reason for this loss was reported.

Loss of Identity and Ethical Implications

Internal concerns among psychologists focus on how the RxP movement might irrevocably change or negatively impact the identity of the profession of psychology as a whole. Critics within the discipline are specifically concerned about the deviation from the roots of a field that historically emphasizes training in psychosocial intervention (DeNelsky, 1996; Hayes & Heiby, 1996). Given economic forces to minimize contact with more expensive providers, and pressure for an instant cure, psychologists worry that their profession could lose the historic focus on psychosocial intervention, and as Shearer et al. (2012) noted, concern exists that psychologists could become "junior psychiatrists." Opponents are also concerned that

psychologists might surrender psychosocial intervention to master's level providers such as social workers or other counselors (McGrath, 2010). Further, DeNelsky (1996) predicted that because there is a greater risk of legal action for medication-related decisions than for psychological interventions, more time may need to be devoted to learning about medication at the expense of psychosocial intervention strategies.

DeNelsky (1996) also argued that medications cannot be conceptualized as simply another "tool" in the psychologist's toolbox. The concern is, as seen with psychiatrists, this one tool could come to dominate practice, in part because of aggressive marketing by the pharmaceutical industry, but demands on time might be another. In the LeVine et al. (2011) study previously discussed, 13 of 17 prescribing psychologists reported that sales representatives from pharmaceutical companies had not particularly targeted them, but a few did receive drug samples and small gifts such as pens. It is reasonable to hypothesize, however, that if the RxP movement expands, psychologists will experience greater pressure from the pharmaceutical industry.

In line with this concern, McGrath (2004) argued that it would be naive to believe that prescribing psychologists will not experience similar pressure to emphasize medication over other interventions, and in anticipation of such pressure psychologists will need to develop strategies for resistance. He suggested one possible response to those external forces would be for psychology to develop an ethical guideline forbidding psychologists from prescribing to individuals for whom they are not also providing psychosocial interventions. However, this may stand in the way of the RxP's goal of overall increasing access to psychopharmacological care.

Robiner et al. (2002) similarly argued that for psychologists, prescribing is a "radical" or "revolutionary" departure in practice. The authors believed that a prescribing model of

intervention would involve a retreat from traditional psychologist training and conceptualization of pathology, by embracing the medical model of prescribing.

McGrath (2004) proposed that such traditional features of psychological practice style may actually help protect the psychologist from becoming overly reliant on medication. Other protective factors could include the emphasis on the psychosocial perspective in doctoral-level training, and the fact that the RxP movement did not emerge until after the earlier stage of faith in medication as a "cure all" fell from favor. Mantell et al. (2004) noted that psychologists are trained in a problem-solving approach to care, and traditional conventional medical approaches might conflict with that model.

Buelow and Chafetz (2006) argued that the RxP movement comes with a range of ethical considerations for a "subfield" that touches on territory not previously considered or entered into by psychologists. The authors proposed some ethical standards appropriate to the situation, including the importance of clear therapeutic contracts, transparent and delineated treatment objectives, and agreement by the patient about which modalities of treatment will be used. Psychologists will need to be open about the risks and the benefits of different forms of treatment. Parameters of informed consent will need to be reconsidered as well, and professional relationships will need to readjust along with the shifting role of the psychologist within the health care system (see also McGrath & Rom-Rymer, 2002). Mantell, Ortiz, and Planthara (2004) raised the lack of empirically based research approaches for the appropriate combination of medical and psychological interventions as an ethical issue. However, an increase in the number of psychologist prescribers may foster the development and validation of such treatment protocols.

Recognizing the possibility of new ethical considerations associated with the role of

prescriber, another task force proposed the development of new practice guidelines, as opposed to ethical standards, for all psychologists' levels of involvement in pharmacotherapy, whether it be prescribing, collaborating, or just giving information related to medication. Practice guidelines differ from ethical standards, which for practicing psychologists are mandatory and enforceable. Practice guidelines instead are intended to represent optimal practice related to a domain of practice. Practice guidelines are aspirational in nature, representing optimal practice recommendations. The task force concluded that since pharmacotherapy is such a new domain for psychologists, the development of strict standards instead of guidelines would be premature (APA, 2011).

The following is an example of three of the guidelines reflecting the scope of a psychologist's medication involvement (APA, 2011):

(1) 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.

(2) Guideline 5: Psychologists strive to be sensitive to the potential for adverse effects associated with the psychotropic medications used by their patients.

(3) Guideline 12: The psychologist with prescriptive authority is encouraged to use an expanded informed consent process to incorporate additional issues specific to prescribing.

Both the ethical considerations involved and the potential loss of identity for the field are recognized as important issues by both supporters and critics of RxP. How the field may evolve with the introduction of prescribing continues to be highly contentious, as RxP has the potential not only to cause significant changes in practice but also changes in doctoral-level training which

is currently anchored in psychosocial intervention. Further, apprehension that economic factors will force psychologists to prescribe and leave psychosocial intervention to other mental health professionals is a realistic concern, particularly as other providers may provide similar interventions at a lower cost (Kaplin & Dacunto, 2014).

Levels of Opposition and Support

Within Psychology

The discussion so far has focused on conceptual issues underlying the RxP movement and its opposition. Another important issue is the degree of support for RxP among psychologists. The literature demonstrates that while there are different opinions within psychology, the majority of psychologists support the RxP movement. Opinion surveys have also been conducted with subsets of psychologists, including pediatric psychologists, who also demonstrated a majority of support for prescriptive authority (Rae, Jensen-Doss, Bowden, Mendoza, & Banda 2008).

In 2001, Walters conducted a meta-analysis of survey studies examining the attitude of practicing psychologists, psychologists in training, and directors of clinical and internship training regarding prescription authority. Data were reviewed on responses to the proposition that properly trained psychologists should be allowed to prescribe psychotropic medication, though the wording of the proposition varies across studies. Walters found that between 1990 and 1999 the number of psychologists supporting the prescription initiative surpassed the proportion of psychologists who opposed it, with 60% agreeing with the statement, 31% disagreeing and 9% undecided. Psychologists were more ambivalent related to statements encouraging APA to support RxP, and regarding their own desire to obtain prescription privileges. It is important to note that the surveys summarized by Walters (2001) took place

before a single psychologist had prescribed in the private sector.

A series of three studies has demonstrated significant consistency over time in the attitudes of certain groups of psychologists. In 2000 Fagan et al. (2004) surveyed a national sample of postdoctoral and internship training sites. This study was intended as a replication of the survey Ax, Forbes, and Thompson (1997) conducted in 1995 in which approximately 72% of both psychology interns and training directors thought that the APA should continue to seek prescriptive authority. The majority of respondents in the replication—including 69% of interns and 62% of training directors—supported the prescriptive authority initiative. Respondents with the Doctor of Psychology degree and early career psychologists (interns and other early career psychologists) expressed greater interest in pursuing the training, as compared to those with the Doctor of Philosophy degree or more advanced careers. The authors hypothesized that these findings may be explained by the potential for increased opportunity in the job market for students planning careers in clinical practice, and who may carry large amounts of debt accrued during graduate training. Fagan et al. (2007) surveyed interns, postdoctoral residents, and training directors again in 2004, and this time added licensed psychologists. The results were similar, with 62% of interns, 71% of postdoctoral residents, 59% of directors of training, and 64% of psychologists in practice supporting the RxP movement. As was seen previously, early career respondents expressed more interest in pursuing the privilege. Since the time that these opinion surveys were conducted, psychologists have been prescribing for 10 additional years. Since early career psychologists were found to be more supportive of the movement, it is quite possible that positive attitudes towards RxP have increased over time, but that hypothesis has not recently been tested.

Of note among detractors of the movement from within psychology, Psychologists Opposed to Prescription Privileges for Psychologists is a organized group that has been formed in opposition to RxP. While the majority of psychologists appear to support RxP, those who oppose have been outspoken, and the issue is far from settled for the field of psychology. Clearly an examination of patient outcomes and more research regarding the main concerns within the field is warranted.

Outside Psychology

Strong opposition to the RxP movement has continued to be expressed by members of various medical disciplines (McGrath, 2010). For example, the International Society of Psychiatric Nurses in 2001 released a position paper opposing prescriptive authority for psychologists stating, "As advocates for our patients, we need to speak out against individuals without the necessary background being allowed to engage in clinical practices that may be harmful to patients. It is our ethical responsibility to speak out and for each nurse to uphold the standards of the profession" (Retrieved from: http://www.ispn-psych.org/docs/11-01prescriptive-authority.pdf). It is noteworthy that this statement was published prior to the passage of RxP in any of the states, and no other nursing organizations have subsequently taken an official stand for or against prescriptive authority.

Significant opposition to the movement has come as well from organized psychiatry, and both the American Psychiatric Association and the American Medical Association have lobbied against RxP legislation (Robiner et al., 2013). Prior to the passage of the bill in New Mexico the New Mexico Psychiatric Association and the American Psychiatric Association's Patient Defense Fund ran a full-page advertisement in the Santa Fe New Mexican, implying that psychologists could not be trained, nor sufficiently trusted, to prescribe medications (APA, 2002).

Surveys have found that in addition to psychiatrists and pediatricians, other primary care providers tend to oppose the RxP movement (Ball et al., 2009). Bell et al. (1995) surveyed a national sample of family physicians ($N = 398$) regarding their current collaborative practices with psychologists and psychiatrists, as well as their opinions related to the RxP movement. There was a 40% response rate, with the majority indicating that they would not refer patients to a psychologist for pharmacological treatment. The survey revealed, however, that the respondent's year of graduation from medical school correlated with the likelihood of favoring prescriptive authority for psychologists, with younger physicians more likely to be open to the idea. Additionally, nearly 40% of respondents endorsed that they would be willing to refer patients to psychologists in order to prescribe and manage some limited categories of medication, such as antidepressants and anxiolytics. Of note, this study was conducted early in the development of the RxP movement, and physician's opinions may now be more favorable with subsequent research such as Shearer et al. (2012) demonstrating favorable physician views of a prescribing psychologist working within a primary care setting. Rae, Jensen-Doss, Bowden, Mendoza, and Banda (2008) more recently examined the opinions of pediatricians and pediatric psychologists concerning prescriptive authority for psychologists. The pediatric psychologists (78%) were significantly more likely to support RxP than were pediatricians (38%).

Since current research findings have revealed no negative impact related to patient outcomes, and the argument regarding safety concerns due to training has been unsupported, why then do medical professionals and their organizations adopt such a strong stance against the RxP movement? One explanation for the opposition from the medical community might be linked to competition for resources and status.

Realistic group conflict theory is a well-established theory founded in Sherif's (Sherif,

1966, 1967; Sherif & Sherif, 1969) conceptualization of intergroup hostility derived from incompatible goals and competition over resources. This theory posits that competition between groups occurs when there is a perceived competition for resources, status, or identity (Bobo, 1983; Jackson, 1993). While other non-physician prescribers—and though limited in numbers, psychologists as well—have been found to prescribe safely and competently, the opposition by medical groups may be a product of the perceived threat to their industry, since it would likely advance the standing of a closely associated profession. As part of his findings on intergroup relations, Sherif demonstrated that superordinate goals can relieve outgroup hostility (Sherif, 1966, 1967; Sherif & Sherif, 1969). Superordinate goals foster interdependence between groups, since these goals are optimally achieved with the participation of both groups. The Shearer et al. (2012) survey demonstrating that physicians responded with positive evaluations of the prescribing psychologist model when they were working directly with a prescribing psychologist is consistent with this hypothesis. A similarly positive perception of psychologist prescribers in the Psychopharmacology Demonstration Project was offered by supervising psychiatrists (U.S. GAO, 1999). It seems likely that collaboration by other professionals with psychologist prescribers would result in improved attitudes towards prescribing psychologists, as would recognition of a shared superordinate goal of achieving improved patient outcomes.

While realistic group conflict theory may provide one model for understanding attitudes towards prescribing psychologists among other professionals, other perspectives from social psychology may also help to understand outgroup hostility. For example, the cheater detection phenomenon may help explain physician opposition to RxP. This occurs when physicians perceive that prescribing psychologists are receiving a benefit without meeting the requirements for the job (Ermer, Guerin, Cosmides, Tooby & Miller, 2006; Cosmides & Tooby, 2005). Cognitive

dissonance theory suggests that tension may arise due to inconsistency between cognition and behavior, motivating a change in cognition or behavior to reduce tension (Gawronski, 2012; Wood, 2000). This theory could similarly be called upon as an explanation for non-psychologist prescribers perceiving psychologists who prescribe as obtaining a similar reward with much less effort. Alternatively, intergroup contact theory which suggests intergroup contact may lead to a reduction in intergroup prejudice (Pettigrew & Tropp, 2006), may suggest why a reduction in negativity would occur with collaboration. The mere exposure effect, which predicts that exposure by itself breeds liking (Zajonc, 1968), would also predict such a shift over time.

Rationale for the Current Study

The current study evaluated the experiences and level of confidence in RxP demonstrated by current prescribing psychologists and other medical professionals working with these prescribers. The study also evaluated practice patterns among prescribing psychologists, such as the number of patients seen, medications prescribed, and continued use of psychosocial interventions.

While a number of studies have been published by individuals who have no personal experience with prescribing psychologists, there is almost no research available concerning the level of confidence in prescribing demonstrated by psychologists and the medical professionals actually working with such providers. There is also almost no information available about the current practices of prescribing psychologists. In line with Shearer et al. (2012) and the success of the Psychopharmacology Demonstration Project, it is predicted that perceptions will be quite positive across providers. The current study also aimed to evaluate the factors that are associated with increased openness to RxP. It was predicted that various factors including collaboration, type of medical professional, and length of time working with prescribing psychologists would

influence opinions of RxP.

The study was further intended to provide information about the current practice patterns of prescribing psychologists. Only one known study collecting information on current prescribers across states exists (LeVine et al. 2011), and it is specific to those working in private practice. Considering that the debate within psychology has often focused on the fate of psychosocial intervention in prescribers, this study evaluated the extent to which psychologist prescribers will continue to employ psychosocial intervention as the first line of intervention over medication, and the extent to which they reduce rather than increase medication use among patients.

Hypotheses

Medical Professionals:

1) Medical professionals working with prescribing psychologists would demonstrate confidence in the prescribing psychologists with whom they work in relation to safe practices, knowledge, and training.

2) Confidence in prescribing psychologists would vary as a function of amount of collaboration and length of time working with a prescribing psychologist.

3) Among medical professionals, physicians would demonstrate the least amount of openness to RxP.

Prescribing Psychologists:

4) Prescribing psychologists would report a high level of confidence in their prescribing abilities. This would include the perception that they engage in safe practices, are knowledgeable, and received adequate training for their role.

5) Prescribing psychologists would demonstrate greater confidence in their abilities than would medical professionals.

6) Given speculation that their psychosocial background would lead psychologists to use medications conservatively (McGrath, 2004), prescribing psychologists would be more likely to decrease rather than increase the amount of medications a patient is taking.

7) Prescribing psychologists would more often begin treatment with psychosocial/ behavioral interventions as opposed to medication.

8) Psychologists who have been prescribing for longer would have higher percentage of patients with severe pathology, and a higher percentage of patients on medication.

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Practice Patterns and Medical Professional Evaluations of Prescribing Psychologists

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Abstract

Despite significant concern and much debate over the competency of prescribing psychologists, and the impact of prescriptive authority on professional psychology, 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 medical professions. The second aim was to understand practice patterns among prescribing psychologists. The third was to explore factors associated with positive perceptions of prescribing psychologists and the prescriptive authority movement. Thirty prescribing psychologists and 24 of their medical colleagues completed surveys that included both force-choice and open-ended questions evaluating perceptions and practices of prescribing psychologists. Results indicated that prescribing psychologists were overwhelmingly perceived positively by medical colleagues across various domains of competency, including training, safety and knowledge. This favorable view emerged regardless of type of medical professional, length of time working with prescribing psychologists, or frequency of interaction. Support for prescriptive authority was also widespread among colleagues. Specific predictions suggesting a preference for psychosocial interventions over medications were not supported. Conclusions, limitations and suggestions for further research are discussed.

Practice Patterns and Medical Professional Evaluations of Prescribing Psychologists

To date, psychologists have achieved prescriptive authority in only a few jurisdictions: Indiana (under very limited conditions), Guam, New Mexico, Louisiana, and recently (2014) in Illinois under a very restrictive law.[1] Prescribing is also authorized in several branches of the federal government, including the Indian Health Service, Public Health Service, and all branches of the military that offer healthcare services. While the majority of psychologists favor the prescriptive authority for psychologists movement (RxP; Fagan, Ax, Liss, Resnick, & Moody, 2007; Rae, Jensen-Doss, Bowden, Mendoza, & Banda, 2008; Walters 2001), there is still opposition within the field (Robiner, Tumlin & Tompkins, 2013). Since the founding of the RxP movement, this opposition has often centered on how prescriptive authority would impact the practice of psychology (DeNelsky, 1996; Hayes & Heiby, 1996). Concerns about safety have also been raised, though other classes of non-physician prescribers have demonstrated the ability to prescribe successfully (e.g., Durie, Lesse, Roberts, Rowland, & Venning, 2000; Lenz, Mundinger, Kane, Hopkins, & Lin, 2004,) even though similar concerns were raised at the time they pursued prescriptive authority.

The existing research regarding psychologist prescribers has primarily centered on surveying attitudes towards RxP (Walters, 2001). Very little research is available regarding the current practices of prescribing psychologists, the confidence of such prescribers, or evaluation

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[1] It should be noted that psychologists authorized to prescribe are legally referred to as *prescribing psychologists* in New Mexico and as *medical psychologists* in Louisiana. To simplify referencing, all psychologists authorized to prescribe will be referred to as prescribing psychologists in this article. The term is intended generically, and not as a legal label.

by colleagues in medical professions. Therefore, it can be inferred that opinions about RxP are not well substantiated by research, and a national study of prescribing psychologists and their colleagues is warranted.

As noted, critics among psychologists have focused particularly on the question of how RxP might impact the identity of the profession of psychology, and whether it will lead psychologists to deviate from their psychosocial roots (DeNelsky, 1996; Hayes & Heiby, 1996). Given current economic pressures to minimize contact with more expensive providers and the common desire among patients for a speedy cure, psychologists have worried that prescribing psychologists could become, as Shearer et al. (2012) described it, "junior psychiatrists." Additional concerns have also been raised regarding the potential surrendering of the psychologist role as a psychosocial intervention provider to master's level social workers and counselors (McGrath, 2010).

In contrast, McGrath (2004) proposed that the psychosocial roots of psychologist training may actually help protect the psychologist prescriber from becoming overly reliant on medication. Muse and McGrath (2010) found that when compared to other prescribers, psychologists were found to have received substantially more training in non-medication based therapeutic interventions. Proponents of RxP have argued that this strong foundational training in psychosocial intervention may influence prescribing psychologists to prescribe less frequently and reduce the use of medication as compared to prescribers lacking such training (McGrath, 2010).

It has also been suggested that increasing the pool of prescribers may increase access to mental health care for underserved populations (Gutierrez & Silk, 1998). At present, a general medical practice is the most frequent treatment setting for individuals with psychological

disorders, and the majority of prescriptions for psychotropic medication are written by non-psychiatric prescribers (Mark, Levit, & Buck, 2009; Pincus et al., 1998; Wang et al., 2006). Despite the continuing need, the overall number of psychiatrists has dropped in recent history (Rao, 1993), particularly in remote areas. Psychiatric visits are decreasing in duration, and psychiatry has the lowest rate of participation in insurance of all medical specialties (Bishop, Press, Keyhani, & Pincus, 2013; Olfson, Marcus, & Pincus, 1999). Oliveira-Berry, DeLeon, and Jennings (2004) contended that psychologist prescribers might be particularly welcome in rural areas where the shortage of psychiatrists is most acute, and could relieve pressure on primary care physicians.

In contrast to a substantial set of publications arguing for or against RxP as a concept, and speculating how practices could influence the field of psychology and mental health, the existing literature examining the performance or direct practices of prescribing psychologists is quite small. Most of it consists of funded evaluations of the Department of Defense's Psychopharmacology Demonstration Project (PDP) that were never published in peer-reviewed venues. The PDP trained 10 military psychologists as prescribers in the 1990s (Sammons, 2002; Sammons & Brown, 1997). Although the PDP was relatively short-lived, four large-scale evaluations of the program were conducted by both governmental and non-governmental organizations (Newman, Phelps, Sammons, Dunivin, & Cullen, 2000). The reports concluded that participants had been properly trained, and failed to identify any adverse patient outcomes for those seeking treatment from these prescribing psychologists (U.S. General Accounting Office, 1999). However, opponents of prescriptive authority have focused on more tentative statements contained in these reports, such as one suggesting the psychologists were functioning at a level more consistent with a medical student than a psychiatrist (e.g., Heiby, 2010). The

generalizability of the findings are 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 looked at the practices of prescribing psychologists. Shearer, Harmon, Seavey and Tiu (2012) obtained responses from 47 medical staff providers (physicians, residents, physician assistants, nurse practitioners) 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 a prescribing 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. Further, the majority of respondents (87.2 %) indicated that their patients' care improved as a result of an embedded prescribing psychologist. While limited to the evaluation of a single prescriber, the results were at least promising.

Two other studies have examined practice patterns across multiple settings. LeVine, Wiggins and Masse (2011) found that prescribing psychologists in private practice in Louisiana and New Mexico ($N = 17$) believed their training and practica had prepared them to prescribe safely and effectively. For these respondents, the percentage of patients on medication ranged from 31% to 91%. Nine of 13 respondents who responded to the question indicated they used a combination of medication and psychotherapy for more than 90% of their patients. Thirteen indicated they were treating more seriously mental ill patients and more Medicaid patients since starting to prescribe. Over half reported they were making "considerably" more money than previously earned.

Vento (2014) focused on identifying the ways such prescribers could potentially reduce mental health care disparities, eliciting responses from 21 of 28 New Mexico practicing outpatient prescribing and conditional prescribing psychologists. She found that more than 90% of prescribing psychologists surveyed accepted Medicaid payments and 62.6% of patients served were living in rural areas with limited access to other behavioral health prescribers.

Though these two studies are interesting, there are also significant concerns about their generalizability. To date no studies have attempted to survey the broader population of prescribing psychologists.

The current study had three aims. The first was to evaluate perceptions of prescribing psychologists' knowledge, training, and the safety of their practices. In line with Shearer et al. (2012), evaluations of the PDP, and research on other non-physician prescribers, it was predicted that perceptions would be found to be positive across both prescribing psychologists and their medical colleagues, with higher ratings expected of prescribing psychologists.

Second, this study aimed to understand the current practice patterns of prescribing psychologists, predicting that they are in line with the psychologists' core psychosocial training. It was predicted that prescribing psychologists would report more often beginning treatment with psychosocial or behavioral interventions as opposed to prescribing, and would be more likely to decrease rather than increase medication levels. Further, it was predicted that psychologists who have been prescribing for longer periods would report a higher percentage of patients with severe pathology, and a higher percentage of patients on medication.

The third study aim was to evaluate the factors that are associated with increased confidence in prescribers and openness to RxP. Colleague's confidence was predicted to vary as a function of the amount of collaboration and length of time spent working with a prescribing

psychologist. It was also predicted that collaboration and length of time working with a prescribing psychologist would be associated with more positive attitudes towards RxP. Such a relationship could occur for several reasons. One possibility is that shared superordinate goals would allow medical providers to overcome initial hostility to prescribing psychologists (Sherif, 1966, 1967; Sherif & Sherif, 1969). Another is that greater familiarity breeds more positive perceptions, a relationship that can be associated with the availability heuristic (Tversky & Kahneman, 1973) or with mere exposure as a cue to safety and liking (Zajonc, 1968). Still another possibility is that medical providers who think more positively about prescribing psychologists would have more contact with them.

Whatever the explanation, physicians were expected to demonstrate the lowest level of support of any of the traditional medical professions.

Method

Participants

Prescribing psychologists were recruited during the winter of 2014-2015 using several methods. The researcher made direct solicitations using email addresses provided by a New Mexico prescribing psychologist. Solicitation 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 materials, however there are currently 59 psychologists conditionally and or fully licensed (or pending licensure) to prescribe in New Mexico and 101 licensed or in the process of licensure in Louisiana (includes active and inactive licensure). Since psychologists prescribing in the Indian Health Service and Public Health Service must be licensed to prescribe, these numbers

describe the entire population of prescribing psychologists in the country save for a small number of military psychologists who have met military standards to prescribe but have not been licensed.

The first set of solicitation emails and listserv posts gave a link to an online survey. This was initiated by 43 psychologists. However, 13 were excluded because they indicated that they had completed the survey before, or quit leaving a substantial portion of the survey incomplete, resulting in a sample of 30. 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 either because they were prescribing psychologists themselves, they indicated that they had completed the survey before, or they discontinued participation early in the survey. This left a sample of 24 medical colleagues. Because psychologists could send the link to multiple colleagues, the 24 medical colleagues reported evaluating 11-12 prescribing psychologists (one respondent did not provide the identity of the psychologist they were 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 44 forced-choice questions,

quantitative estimates, and open-ended questions. Questions focused on demographic information; confidence in the training and personal competence; workplace settings; patient populations; and practice patterns, including time devoted to medication versus psychosocial interventions. The medical colleagues survey included 21 forced-choice questions, quantitative estimates, and open-ended questions addressing demographic information, workplace setting, interactions with prescribing psychologists, and evaluations of prescribing psychologists' training and competence.

Results

Preliminary Analyses

The most common settings in which psychologists worked were private practice ($N = 16$; 53.33%), hospital outpatient mental health ($N = 9$; 30.00%), and hospital-based primary care settings ($N = 8$; 26.67%). These were also the most common settings in which they prescribed. Less common work settings included non-hospital based primary care settings ($N = 5$; 16.67%), community mental health centers ($N = 3$; 10.00%), community health centers ($N = 3$; 10.00%), and hospital-based emergency rooms ($N = 3$; 10.00 %).

The most frequently reported site where medical colleagues reported working was hospital-based primary care ($N = 17$, 70.83%), and ($N = 14$; 58.33%) reported working with a prescribing psychologist in this setting. The next most common work settings were hospital emergency rooms ($N = 5$; 20.83%) and community health centers ($N = 5$; 20.83%). Other sites where colleagues reported working included other hospital-based settings ($N = 4$; 16.67%), non-hospital based primary care ($N = 2$; 8.33%), pharmacies ($N = 1$; 4.17%), community mental health centers ($N = 1$; 4.17%), and private practice ($N = 1$; 4.17%). Table 1 includes the reported

number of patients shared with prescribing psychologists by medical colleagues, and the frequency with which they reported communicating with the psychologist.

Aim 1: Perceptions of Prescribing Psychologists

It was hypothesized that perceptions of prescribing psychologists among both prescribing psychologists and their medical colleagues would be very positive. 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 5-point Likert scale ranging from *strongly disagree* to *strongly agree*. There was also an option to select a "not applicable" option. The responses of two prescribing psychologists were excluded from this analysis due to inconsistencies in responding that suggested a failure to examine the response alternatives. For another provider, one response was deemed missing, as it was incongruent with the provider's clear response pattern. For all of the items, responses consistently suggested a positive perception of the prescribing psychologist. One-sample *t*-tests were conducted for each of the 10 statements (9 statements on top and one at the bottom of Table 2) evaluated by prescribing psychologists. In all cases, the mean score significantly differed from the neutral rating, $p < .01$. This was replicated for 12 statements rated by medical colleagues ($p < .01$).

It was predicted that prescribing psychologists' ratings of these items would be significantly more positive than those of medical colleagues across the various domains. Independent-sample *t*-tests were conducted between 9 corresponding items administered in both surveys; these items are asterisked in Table 2. This hypothesis was largely unsupported. In all cases the results were not significant ($p > .05$) except for the item reflecting appropriate consultation by prescribing psychologists, $t(48) = 2.81$, $p = .01$. Though 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, both groups on average agreed that psychologists consulted appropriately.

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%).

It was predicted that prescribing psychologists would more often begin treatment with psychosocial/behavioral interventions as opposed to prescribing. A paired samples *t*-test found the difference between the percent of case 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, $t(29) = .01$, $p = .99$. It was also predicted that psychologists would be more likely to decrease rather than increase the level of medication prescribed. A paired samples *t*-test examined the number of cases in the most recent full work day where the psychologist increased (M = 2.96, SD = 3.34) or decreased (*M* = 2.18, *SD* = 2.00) medications. This difference was not significant, $t(27) = 1.85$, $p = .08$. At least on a typical work day, psychologists were no more likely to increase or decrease the number of medications prescribed. It was also predicted 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 in a full day of

prescribing ($r = .29, p = .12$).

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 (daily, every other day, weekly, twice per month, once per month, once every few months), 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. The correlations among the contact variables were generally small, indicating they represented distinct dimensions of contact. Only 1 of 48 correlations between contact and confidence variables was significant, suggesting a relationship between the perception that prescribing psychologists have been adequately trained to prescribe medication and frequency of discussion. While this correlation is in the opposite direction from expectation, it should be noted that except for one neutral rating, all medical colleagues' ratings of psychologists' adequacy of training were in the positive direction. Given the small sample size ($N = 22$) and restricted range in responding, the hypothesis could not be adequately tested.

It was also predicted that among medical colleagues who responded, physicians (as compared to other professionals) would demonstrate the least amount of openness to RxP. Due to the small number of non-physician respondents in the sample who answered this question, an independent samples *t*-test was conducted comparing physicians ($N = 18$, $M = 4.56$, $SD = .78$) to all other medical colleague ($N = 4$, $M = 4.75$, $SD = .50$). The difference was in the expected

direction but not significant, $t(20) = -4.70$, $p = .64$. As in previous cases, it should be noted that the mean score 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 paired sample t-test of these data was statistically significant, $t(29) = 2.35$, $p = .03$. Also of interest, the average percent of patiens seen for medication with another provider for psychotherapy was 57.8 % (N =25, SD =35.76). Two correlations were computed to evaluate whether the percent of patients for which they reported prescribing was associated with whether the psychologist reported an increase in the diagnostic severity of their patients (a binary variable) or the percent of patients on supplemental security income. Neither of these correlation was significant, $r = .162$, $p = .39$, and $r = .82$, $p = -.05$, respectively, suggesting that the severity of patient pathology was not related to the rate of prescribing.

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 (90.00%), anxiety (56.67%), bipolar disorder (46.67%), and 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%, with 11.76% restricting this to mild to moderate anxiety), insomnia (41.18%), substance use (23.53%), mild-moderate depression (17.65%) and ADHD (17.65%). When asked the three types of medication they most frequently prescribed, prescribing/medical psychologists reported most frequently prescribing

anti-depressants (100%), mood stabilizers (56.67%), ADHD medication (50.00%) and antipsychotic medication (43.33%).

Prescribers were asked whether they refer 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 among 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/faster appointments (15.38%). When asked why providers chose to pursue prescriptive authority, better quality of care/outcomes for patients (34.62%), in order to increase knowledge base (34.62%), increase availability of providers (23.08%), and 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 prior authorization barriers/recognition from insurance companies, coordination/needing concurrence/consultation requirement, and gaps in training/ knowledge (all cited by 19.23% of respondents) were the most frequent response categories, followed by skepticism in other providers, including in some cases other psychologists (15.38%). In terms of advantages, quality of care (52.00%), faster access to care (28.00%) more in control of patient care (24.00%) and increased collaboration/communication with other providers (24.00%), were the top 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 and share knowledge with the medical colleague (11.11%). With regard to benefits of working with prescribing psychologists, for those who responded ($N = 19$) the top responses included sharing knowledge base/expertise (63.16 %), better access to care (47.37 %), improved outcomes/quality of care (31.58%), and improved communication related to patient care (26.32%). Colleagues were also asked if they had any problems or concerns related to the prescribing psychologists that they work with. Of 20 respondents, only one indicated that they had concerns.

Discussion

Summary of Findings

The quantitative and qualitative findings of the current study provide an overwhelmingly favorable evaluation of prescribing psychologists, supporting the hypotheses that both prescribers and their medical colleagues would positively evaluate their practices across various domains of knowledge, training, and safety. These results both 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, 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, they also value them as a source of information. Only one medical colleague indicated any concerns about working with prescribing psychologists,

indicating a concern that the psychologist with whom they worked had prescribed two medications with antagonistic effects.

It was also predicted that prescribing psychologists would view their expertise more positively than would their medical colleagues. Only one of nine differences in mean confidence ratings was significant, related to appropriately consulting with other medical professionals. Though the difference was significant, both groups largely agreed that psychologists consulted appropriately with all responses in the positive direction and only one medical colleague responding with a neutral rating to this question.

Based on the expectation that the practice of prescribing psychologists would be largely informed by their background in psychosocial intervention, it was predicted that they would report more often beginning treatment with psychosocial/behavioral interventions rather than with prescribing, and they would be more likely to decrease rather than increase medication levels. Neither prediction was supported. Of note, almost an equal number of providers reported beginning treatment with medication alone as reported beginning with therapy alone. Further, there were significantly more patients seen for medication alone than for therapy alone.

Drawing the conclusion based on this finding that psychologists are indeed acting as "junior psychiatrists" and abandoning psychosocial intervention would be taking a significant leap, however. Using the same statistics, it is also the case that prescribing psychologists are 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, but given standard prescribing versus psychotherapy practices, it can be assumed that the majority of patient contact time was dedicated to psychotherapy. It is also unknown how many patients requested medication or if providers were now getting more referrals for patients. 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.

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 they were seeing fewer minority, low socioeconomic status, rural, or severely pathological patients. Increased access to care, primarily because of the availability of the prescribing psychologist and the absence of psychiatrists, was also suggested by responses to open-ended questions.

Further practice-based predictions were 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. In both cases correlations were in the anticipated direction but correlations were below .30. Since no psychologists in the sample were prescribing for more than 12 years, perhaps these relationships will become stronger over a longer time frame. On their most recent work-day prescribing, psychologists were about equally likely to increase and decrease the number of medications prescribed. In order to make better sense of this finding, information about the frequency with which other types of prescribers increase versus decrease medication use would be needed. Finally, the most common changes reported to practice were increased salary and increased diagnostic severity of patients. RxP does indeed seem to offer benefits both to the field and to patients.

The final aim was to evaluate the factors that are associated with increased confidence in

prescribing psychologists and openness to RxP among medical colleagues. It was predicted that factors such as level of collaboration and length of time working with a prescribing psychologist would be associated a more positive perception of prescribing psychologists and more positive attitudes towards RxP. These predictions were not supported according to significance test results. It appears that views of prescribing psychologists and RxP were largely favorable for all providers regardless of length of time and frequency of contact.

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 limited. 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 practitioner (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 towards 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. Furthermore, prescribing psychologists may have selectively recruited colleagues with a more positive opinion of the psychologist. Of note, only one of the medical professionals was a psychiatrist, perhaps the most aggressive opponents of prescriptive authority for psychologists among the medical professions. Future research should aim to gather opinions from more medical colleagues. Even better would be research looking at actual outcomes in

comparison to those for other professions and patient evaluations.

Though 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 towards 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 12 years. It is hoped that future research will 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.

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Table 1

Demographic Statistics.

Variable	*N*	%	*M*	*SD*
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
# work sites	30		1.83	0.70
# prescribing sites	30		1.63	0.76
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	3	12.50		
Nurse Practitioner	2			
Advanced Psychiatric Nurse	1			
Pharmacist	1	4.17		
Physician	13	54.17		
Primary Care	11			
Pediatrician	1			
Psychiatrist	1			
Physician Assistant	1	4.17		
Primary Care Resident	6	25.00		
Age	24		47.42	14.15
Years licensed	24		16.42	16.50
Years working with PP	22		4.32	4.11
# work sites	24		1.58	0.78
# work sites with PP	24		1.38	0.67
# Patients Shared with PP				
1 to 10	8	38.10		
10 to 20	5	23.81		
20 to 30	4	19.05		
50 or more	4	19.05		

Variable	*N*	%	*M*	*SD*
Communication with PP				
Daily	2	8.33		
Every other day	3	12.50		
Weekly	9	37.50		
Once a month	3	12.50		
Once every few months	2	8.33		
Twice per month	5	20.83		

[a]Respondents were allowed more than one response.

[b]Prescribe in other states through governmental agencies.

Note. PP = prescribing psychologist.

Table 2

Ratings by Prescribing Psychologists and Medical Colleagues.

Item	*N*	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
Prescribing Psychologists						
Adequately trained to prescribe medication*	28	0.00	0.00	0.00	32.14	67.86
Not enough knowledge of how to safely* prescribe to patients	27	74.07	25.93	0.00	0.00	0.00
Adequate knowledge of medical terminology*	28	0.00	0.00	3.57	46.43	50.00
Adequate knowledge of medical tests relevant* to prescribing	28	0.00	0.00	0.00	50.00	50.00
Safe prescribers*	28	0.00	0.00	0.00	7.14	92.86
Know when it is appropriate to refer a patient* to other medical professionals.	28	0.00	0.00	0.00	10.71	89.29
Appropriately consult with other medical professionals about patient care*	28	0.00	0.00	0.00	3.57	96.43
Medical professionals are confident in my ability to prescribe/monitor medication	28	0.00	0.00	3.57	21.43	75.00
Increase patient access to care*	28	0.00	0.00	3.57	7.14	89.29
Medical Colleagues						
Adequately trained to prescribe medication	22	0.00	0.00	4.55	27.27	68.18
Not enough knowledge of how to safely Prescribe	22	68.18	27.27	4.55	0.00	0.00
Adequate knowledge of medical terminology	22	0.00	0.00	4.55	18.18	77.27
Adequate knowledge of medical tests relevant to prescribing	22	0.00	4.55	4.55	22.73	68.18
Safe prescribers	22	0.00	0.00	0.00	22.73	77.27
I would refer to a PP	21	0.00	0.00	4.76	19.05	76.19
Increase patient access to care	22	0.00	0.00	4.55	22.73	72.73
I support the movement for psychologists to prescribe	22	0.00	0.00	4.55	27.27	68.18
Appropriately consult with me about patient Care	22	0.00	0.00	4.55	27.27	68.18
Doesn't know when to refer to other medical providers	22	68.18	31.82	0.00	0.00	0.00
Concerned will prescribe inappropriate medications and/or dosages	22	59.09	36.36	4.55	0.00	0.00

Compared to other prescribers, PPs are*		Weaker than most	About the same	Better than most
Prescribing Psychologists	27	0.00	33.33	66.67
Medical Colleagues	24	4.17	37.50	58.33

*Items contained in both surveys.

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

Table 3

Practice Variables for Prescribing Psychologists

Variable	*N*	%	*M*	*SD*	Median
Patient Population					
No change	9	30.00			
Increased diagnostic severity	20	66.67			
Decreased diagnostic severity	0	0.00			
More patients of minority status	7	23.33			
Fewer patients of minority status	0	0.00			
More low SES patients	9	30.00			
Fewer low SES patients	0	0.00			
More rural patients[a]	12	40.00			
Fewer rural patients	0	0.00			
Other population changes[b]	4	13.33			
Income					
Higher income	19	63.30			
Same income	10	33.30			
Lower income	0	0.00			
Ethics complaints related to prescribing	0	0.00			
Malpractice claims related to prescribing	0	0.00			
Hospitalized or harmed by a med prescribed	1	3.33			
Distribution of Treatments (last 12 months)					
# 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	0.00
% 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
# of physician refusals of med prescribed	21		0.81	1.47	0.00
Average salary in last 12 months	27		$125,444	$50,901	$125,000
Last full day of patient care					
# patients seen	30		9.53	4.55	8.00
# patients taking meds prescribed by PP	28		15.29	23.60	8.50
Average time per patient (minutes)	28		39.16	11.28	40.00
# prescriptions written	30		12.70	12.18	9.00
# patients with compliance issues with meds	30		1.90	2.11	1.00
Total # meds prescribed that day	29		17.10	11.50	15.00

Variable	*N*	%	*M*	*SD*	Median
# patients on opioids	30		1.77	2.49	1.00
# patients on meds for psychotropic SEs	30		1.23	2.37	0.00
# patients you have increased meds	29		2.93	3.28	2.00
# patients you have decreased meds	28		2.18	2.00	2.00
# patients on multiple meds in same class	30		1.43	3.09	0.00

[a]Urban area > 50,000 people; urban center = 2,500- 50,000 people; rural < 2500.
[b]Examples include medical comorbidities and seeing more youths.
[c]Examples include evaluation and consultation
Note. SES = socio-economic status; SSI = supplemental security income; PP = prescribing psychologist; SEs = side effects ; meds = medications.

Table 4

Predictors of Medical Colleague Confidence in Prescribing Psychologists.

		13	14	15	16
Confidence					
1	Adequately trained to prescribe medication	-0.46*	-0.38	0.19	0.20
2	Not enough knowledge of how to safely prescribe	0.21	0.25	-0.24	-0.25
3	Adequate knowledge of medical terminology	-0.28	-0.24	0.10	0.13
4	Adequate knowledge of medical tests relevant to prescribing	-0.20	-0.24	0.21	0.20
5	Safe prescribers	-0.15	0.03	0.06	0.25
6	I would refer to a PP	-0.40	-0.44	0.15	0.20
7	Increase patient access to care	-0.25	-0.34	0.19	0.22
8	I support the movement for psychologists to prescribe	-0.20	-0.40	0.19	0.17
9	Appropriately consult with me about patient care	-0.09	-0.26	0.03	0.33
10	Doesn't know when to refer to other medical providers	-0.09	0.01	-0.04	-0.33
11	Concerned will prescribe inappropriate medications and/or dosages	0.21	0.07	-0.29	-0.32
12	Compared to other prescribers, PPs are[a]	-0.25	-0.31	0.15	0.16
Contact					
13	Frequency of discussion with PPs		0.31	-0.15	-0.01
14	# shared patients			0.51*	0.08
15	# shared work sites				0.26
16	Years since first working with PPs				

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

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

Note. PP = prescribing psychologist.

Appendix A

Prescribing Psychologist Survey

Appendix A

Prescribing Psychologist Survey

1. Have you completed survey before

    Yes

    No

2. Consent page, permission to participate

3. Name (this will be kept confidential):

4. Age:

5. Gender:

6. Ethnicity:

7. Degrees and Years obtained (write in year):

    PhD

    EdD

    PsyD

8. Year first licensed as a Psychologist:

9. I have a degree or certificate in psychopharmacology:

    Degree

    Certificate

10. Year of licensure as a prescribing/medical psychologist:

11. Year of (fill in those that apply to you):

    Conditional prescribing license

    Prescribing psychologist license

    Medical psychologist license

    Advanced practice medical psychologist license

12. State(s) of Licensure to prescribe:

13. State(s) you currently prescribe in:

14. Towns you currently prescribe in (if you use telemedicine please use location of patients):

15. For each setting in which you work, percent of time working in that location (percents should add up to 100%):

Community Mental Health Clinic

Hospital Setting - Primary Care

Hospital Setting - ER

Hospital Setting - Outpatient Mental Health Clinic

Hospital Setting - Other (specify and list percent)

Hospital Setting - Other (specify and list percent)

Community Health Clinic

Non Hospital based Primary Care Clinic

Private Practice

Other (specify and list percent)

Other (specify and list percent)

16. For each of the settings you listed above, put an X if you prescribe in that setting:

Community Mental Health Clinic

Hospital Setting - Primary Care

Hospital Setting - ER

Hospital Setting - Outpatient Mental Health Clinic

Hospital Setting - Other: Hospital Setting - Other

Community Health Clinic

Non Hospital based Primary Care Clinic

Private Practice

Other

Other

17. Estimate answers to the following questions based on the last 12 months as of today: (please enter only numerical data for each)

Approximately how many different patients did you see?

Approximately what percentage of your patients have you prescribed to (don't need to include % sign)?

18. The answers to the following 4 questions should add to 100% (based on last 12 months) (enter a whole number from 0 to 100 for each question. Do not need to include % sign)

Approximately what percentage of your patients did you see for psychotherapy/behavioral therapy alone?

Approximately what percentage of your patients have you seen for medication/medication monitoring alone?

Approximately what percentage of your patients did you see for a combination of psychotherapy/behavioral intervention and medication/medication monitoring?

Approximately what percentage of your patients have you seen for other reasons besides psychotherapy, behavioral therapy, and/or medication management (e.g., evaluation, consultation)?

19. If you saw any patients for medication alone, what percentage OF THOSE had a separate provider for psychotherapy/behavioral intervention (that is, this could be 0-100%)?

(please enter a whole number from 0 to 100, do not need to include % sign. If N/A leave blank)

20. If you saw any patients for medication alone AND they did not have a separate provider, how often was it due to (these should add up to 100%):

(please enter a whole number from 0 to 100 for each, do not need to include % sign. If N/A leave blank)

Your decision

Patient didn't want psychotherapy/behavioral intervention

Other

21. For new patients not currently on medication in settings where you are able to prescribe, approximately what percentage of the time did you start treatment with (in the first three sessions):

Responses should add up to 100%. (please enter a whole number from 0 to 100 for each, do not need to include % sign. If N/A leave blank)

Medication alone

Psychotherapy/behavioral therapy alone

Psychotherapy/behavioral therapy and medication

22. In settings where you prescribe, please provide best estimated percentage of patients seen in last year who are living in (we just want rough estimates, please do not worry about being exact):

(please enter a whole number from 0 to 100 for each, do not need to include % sign)

Urban areas (>50,000 people)

Urban Centers (>/= 2,500 people but less than 50,000 people)

Rural (Anyone who does not fit in above categories)

23. Estimated percentage of patients to which you prescribe:

(please enter a whole number from 0 to 100 for each, do not need to include % sign)

on Medicaid

on Medicare

receiving SSI

24. Top three conditions for which you most commonly prescribe medication:

25. Are there any conditions commonly treated with medication for which you tend to avoid medication?

26. Three types of medication you most frequently prescribe:

27. Do you refer certain medication cases?

Yes

No

28. If so, under what circumstances?

29. How frequently do you engage in a patient related communication with physicians (can be by email, phone, fax, web service, or in person):

Daily

Every other day

Weekly

Twice per month

Once a month

Once every few months

30. How frequently do you engage in a patient related communication with pharmacists (can be by email, phone, fax, web service, or in person):

Daily

Every other day

Weekly

Twice per month

Once a month

Once every few months

31. How frequently do you engage in a patient related communication with nurses/physician assistants (can be by email, phone, fax, web service, or in person):

Daily

Every other day

Weekly

Twice per month

Once a month

Once every few months

32. Have any physicians refused to approve the medication you chose for your patient (answer only if concurrence is required)?

33. If so, how many refusals (please list number)?

34. Has the nature of your patient population changed since you have been prescribing? (check all that apply) same

increased severity of diagnosis

decreased severity of diagnosis

more minority patients

fewer minority patients

more patients of low SES

fewer patients of low SES

more patients from rural populations

fewer patients from rural populations

Other: write in

35. Have you had any ethics complaints related to prescribing?

Yes

No

36. Have you had any malpractice claims related to prescribing?

Yes

No

37. Have you had any patients hospitalized or seriously harmed by a medication you prescribed?

Yes

No

38. The following questions ask you to make estimates based on the most recent full work day you worked in a setting where you prescribe medications. We just want rough estimates, please do not worry about being exact.

Answers should be based on one day of work. If you prescribe in multiple settings, pick the setting in which you most recently worked a full day. Please enter a whole positive number for each.

Number of patients/cases seen (in most recent full work day you worked in a setting where you prescribe medications)

Of those, how many are taking at least one medication you prescribed?

Average time spent with each patient that day (in minutes)

Number of prescriptions you wrote that day

Number of patients seen that day with whom there are compliance issues (not taking meds, wanting to discontinue, or not taking as prescribed)

Count up the total number of medications you currently prescribe for the patients seen that day (e.g., if each of 10 patients you saw were taking two medications you prescribed, that would be 20)

Number of patients seen that day taking opioids

Number of patients seen that day taking medications for side effects of psychotropic medications

Number of patients seen that day for whom you've increased the number of psychotropic medications since you first saw them?

Number of patients seen that day for whom you've decreased the number of psychotropic medications since you first saw them?

Number of patients seen that day taking multiple medications within same class of drug? (e.g., two antidepressants)

Income

39. Gross salary range in last 12 months (to help establish the proper compensation bracket nationally):

40. Any significant change in salary since prescribing?

Increase

Decrease

Same

41. Evaluate the following statements (scale)

Strongly Disagree

Disagree

Neither Disagree Nor Agree

Agree

Strongly Agree

N/A

I believe I have been adequately trained to prescribe medication.

I believe I do not have enough knowledge of how to safely prescribe to patients.

I have adequate knowledge of medical terminology.

I have adequate knowledge of medical tests relevant to my practice as a prescriber.

I believe I safely prescribe to patients.

I know when it is appropriate to refer a patient to other medical professionals for additional medical evaluation.

I believe I appropriately consult with other medical professionals related to patient care.

Medical professionals are confident in my ability to prescribe/monitor medication.

I am increasing patient access to care.

42. If you indicated that you are increasing access to care - please describe how.

43. In comparison to other medical professionals prescribing medication for mental health disorders, I believe my ability to prescribe/monitor medications is:

Weaker than most

About the same

Better than most

Optional open-ended questions

44. Why did you choose to pursue prescriptive authority?

45. What do you see as the greatest difficulties in being a prescribing/medical psychologist? Describe:

46. What do you see as the greatest advantages of being a prescribing/medical psychologist? Describe:

Appendix B

Medical Colleague Survey

Appendix B

Medical Colleague Survey

1. Have you completed survey before

Yes

No

2. Consent page, permission to participate

3. Age:

4. Gender:

5. Ethnicity:

Please indicate your medical profession

6. Please select your medical profession from dropdown list. If none are applicable write profession in the box provided.

Resident

Physician

Physician Assistant

Pharmacist

Nurse

If other (please specify)

7. If you selected physician as your answer to #6 what kind of physician are you?

Pediatrician

Primary Care Physician

Psychiatrist

If other (please specify)

8. If you selected resident physician as your answer to #6 what kind of resident physician are you?

Pediatrician

Primary Care Physician

Psychiatrist

If other (please specify)

9. If you selected nurse to question #6 what kind of nurse are you?

General medical

Psychiatric advanced practice nurse

If other (please specify)

10. Number of years since attaining licensure in the profession:

number of years:

11. State(s) of licensure:

12. State(s) where you currently work:

13. Setting(s) where you work (mark with an X):

Community Mental Health Clinic

Hospital Setting, Primary Care

Hospital Setting, ER:

Hospital Setting, Outpatient Mental Health Clinic:

Hospital Setting, Other (write in):

Hospital Setting, Other (write in):

Community Health Clinic

Non Hospital based Primary Care Clinic

Pharmacy Private Practice

Other (write in)

Other (write in)

14. In the setting(s) where you work, put an "X" if there is a prescribing/medical psychologist on site (should correspond to settings endorsed in previous question):

Community Mental Health Clinic

Hospital Setting, Primary Care

Hospital Setting, ER

Hospital Setting, Outpatient Mental Health Clinic

Hospital Setting, Other (write in)

Hospital Setting, Other (write in)

Community Health Clinic

Non Hospital based Primary Care Clinic

Pharmacy Private Practice

Other (write in)

Other (write in)

15. Name(s) of prescribing/medical psychologist(s) you work with (this information will be kept confidential and your responses will not be disclosed to the psychologist(s) you identify here):

16. In what year did you first work with a prescribing/medical psychologist?

17. How many patients do you share with prescribing/medical psychologists?

1-10

10-20

20-30

30-40

50 or more

If N/A explain why

18. How frequently do you engage in a patient related discussion with a prescribing/medical psychologist (can be email/phone/fax or in person)?

Daily

Every other day

Weekly

Twice per month

Once a month

Once every few months

19. Evaluate the following statements (scale)

Strongly Disagree

Disagree

Neither Disagree Nor Agree

Agree

Strongly Agree

N/A

I believe the prescribing/medical psychologist(s) I work with have been adequately trained to prescribe medication.

I believe the prescribing/medical psychologist(s) I work with do not have enough knowledge of how to safely prescribe to patients.

I believe the prescribing/medical psychologist(s) I work with have adequate knowledge of medical terminology.

I believe the prescribing/medical psychologist(s) I work with have adequate knowledge of medical tests relevant to their practice as a prescriber.

I believe the prescribing/medical psychologist(s) I work with safely prescribes to patients.

I would refer patients to a prescribing/medical psychologist.

The prescribing/medical psychologist(s) I work with increases patient access to care

I support the movement for psychologists to gain prescriptive authority.

Prescribing/medical psychologists appropriately consult with me related to patient care.

I do not believe the prescribing/medical psychologist(s) I work with knows when a patient should be referred to other medical providers for additional medical evaluation.

I am concerned prescribing/medical psychologists will prescribe inappropriate medications and/or dosages of medications to their patients.

20. If you indicated that the prescribing/medical psychologist you work with increases patient

access to care. Please describe how:

21. In comparison to other medical professionals prescribing medication for mental health disorders, I believe prescribing/medical psychologists ability to prescribe/monitor medications is:

Weaker than most

About the same

Better than most

Optional open-ended questions:

22. Have you had any concerns or problems working with or related to the work of the prescribing/ medical psychologists you work with? Describe:

23. What are the benefits or positive aspects of working with a prescribing/medical psychologist? Describe: