

# Increasing access to psychiatric care during the COVID-19 pandemic through mental health clinical pharmacy specialist services

P. Brittany Vickery, PharmD, BCPS, BCPP, CPP<sup>1</sup>

Kacie Godwin, PharmD<sup>2</sup>

J. Kyle Roach, PharmD<sup>3</sup>

**How to cite:** Vickery PB, Godwin K, Roach JK. Increasing access to psychiatric care during the COVID-19 pandemic through mental health clinical pharmacy specialist services. *Ment Health Clin* [Internet]. 2023;13(4):176-82. DOI: 10.9740/mhc.2023.08.176.

**Submitted for Publication:** September 20, 2022; **Accepted for Publication:** May 3, 2023

## Abstract

**Introduction:** Higher rates of mental health conditions, increased incidence of psychiatric diagnoses, and symptom relapse with minimal access to psychotherapeutic services are reported during the COVID-19 pandemic. A local area clinic in the United States that exists to serve underprivileged patients helps to combat poor psychiatric outcomes by offering psychiatric clinics, pharmacotherapy management, and medications at reduced or no cost.

**Methods:** Recruitment and data collection were conducted from May 3, 2021, to March 3, 2022. Patients were seen by psychiatrists or the mental health clinical pharmacy specialist (MHCPS), and consent was obtained for the completion of satisfaction surveys. Five-point Likert scale comparisons were utilized to assess patient-perceived differences in clinician care. The primary study objective was to determine if access to care could be increased with the addition of an MHCPS, and secondary objectives included evaluating patient perceptions of clinician care as well as reporting MHCPS interventions.

**Results:** Participant baseline demographics and common psychiatric diagnoses are reported. An MHCPS was incorporated into the clinic during the study allowing for 1 additional patient care period per month. The most frequent score among all surveys was 4.8 ( $P > .05$ ) on a 5-point scale, indicating no statistically significant differences between clinician care. MHCPS interventions are reported.

**Discussion:** The addition of an MHCPS allowed for additional patient care appointments for the clinic each month. MHCPS care offered no significant differences from psychiatrist care based on patient satisfaction surveys, highlighting the utility of pharmacist involvement for managing psychiatric disease states and increasing access to mental health services.

**Keywords:** access, care, clinical pharmacist practitioner, mental health clinical pharmacy specialist, psychiatric, provider

<sup>1</sup> (Corresponding author) Associate Professor of Pharmacy, Wingate University School of Pharmacy Hendersonville Health Sciences Center, Hendersonville, North Carolina, [b.vickery@wingate.edu](mailto:b.vickery@wingate.edu); <sup>2</sup> PGY1 Pharmacy Resident, Catawba Valley Medical Center, Hickory, North Carolina; previous: Wingate University School of Pharmacy Hendersonville Health Sciences Center, Hendersonville, North Carolina; <sup>3</sup> PGY1 Pharmacy Resident, FirstHealth Moore Regional Hospital, Pinehurst, North Carolina; previous: Wingate University School of Pharmacy Hendersonville Health Sciences Center, Hendersonville, North Carolina

**Disclosures:** Funding was via the COVID-19 Care Grant awarded from the College of Psychiatric and Neurologic Pharmacists and acknowledgment is given to Dr. Edward Chiyaka for data analysis. PBV, KG, and JKR have no disclosures of interest.

## Introduction

### COVID-19 and Mental Health

Patients with mental health diagnoses constituted a stigmatized and underserved population prior to the COVID-19 pandemic. Since the COVID-19 pandemic, reports of increasing mental health diagnosis are released regularly. An August 2020 report from the Centers for Disease Control states, “During June 24–30, 2020, U.S. adults reported considerably elevated adverse mental health conditions associated with COVID-19.



Younger adults, racial and/or ethnic minorities, essential workers, and unpaid adult caregivers reported having experienced disproportionately worse mental health outcomes, increased substance use, and elevated suicidal ideation.”<sup>1(p1057)</sup> Taquet et al report that a diagnosis of COVID-19 was linked to an increased incidence of a first psychiatric diagnosis 14 to 90 days after COVID-19 in patients who had no preexisting psychiatric history. This was compared to 6 other health events, such as influenza, respiratory infections, and skin infections.<sup>2</sup> Belz et al report potential worsening or relapse of symptoms and the concern for less access to psychotherapeutic services for patients with preexisting psychiatric conditions amid the COVID-19 pandemic.<sup>3</sup>

## Clinic Background

The clinic opened its doors in 2001 to serve an underprivileged patient population and implemented psychiatric services in 2006. The clinic provides both scheduled and walk-in clinical appointments, care navigation, referrals, and a community pharmacy for more than 2000 patients annually. Between July 1, 2018, and June 30, 2019, the clinic provided 2301 psychiatric encounters consisting of psychiatric clinic patients, counseling, and care navigation. Psychiatric patients may be seen as repeat patients, bridge visits (requiring care immediately while waiting to see regular provider), or new patients during crisis. Due to increased need in 2020, the clinic began offering psychiatric clinic services twice monthly, whereas previously it was offered once monthly.

## Purpose

Per the clinic’s 2018-2019 annual report, many individuals in the local community struggle to access basic medical and behavioral health care. Eleven percent of the community’s surrounding neighbors live in poverty, and 15% of individuals have no health insurance.<sup>4</sup> Findings from Gloster et al suggest interventional health initiatives promoting psychological flexibility can mitigate the impact of COVID-19 on individuals without social support or who have a financial burden. The authors conclude these interventions are key to combating mental health disparities caused by the pandemic.<sup>5</sup> The primary goal of this grant-funded project was to increase access to psychiatric care during a global pandemic by adding a clinical pharmacist practitioner (CPP) or mental health clinical pharmacy specialist (MHCPS) with the appropriate state-defined scope-of-care collaborative practice agreement (CPA) to see patients autonomously face-to-face (FtF) to a local clinic that serves uninsured, low-income, and vulnerable individuals in the community. This was part of an initiative to fund research that will help define the future of psychiatric pharmacy practice and improve the care of patients with psychiatric and neurologic disorders during the COVID-19 pandemic. In North Carolina, the state where this study took place, pharmacists can practice as CPPs with approval from the

state board of pharmacy. This allows pharmacists to perform medication initiation, adjustment, and/or discontinuation in addition to ordering any necessary tests under the supervision of a physician. Known as a CPA, the relationship between provider and pharmacist allows the latter to expand services for drug therapy management within the scope of practice as agreed upon by the 2 parties.<sup>6,7</sup> Finley et al report that clinical pharmacists managing medication therapy for patients with non-severe depression as part of a CPA helped increase patient adherence and rates of satisfaction and reduced primary care provider visits.<sup>8</sup>

MHCPSs practicing as CPPs in North Carolina must identify themselves as such to the patients during the first encounter. This was explained in patient-friendly terminology as a person who went to pharmacy school instead of medical school but has had additional training in psychiatric medicine so that they can work under the supervision of a psychiatrist to evaluate disease states and provide medication management similar to a nurse practitioner (NP) or physician assistant (PA). MHCPSs are often board-certified psychiatric pharmacists (BCPP) or pharmacists who specialize in the area of mental health/psychiatry with additional training or practice. MCPHSs practice in a variety of settings as seen in a recent survey study with a 33% response rate that reports predominant practice sites of inpatient settings (47%) with a large portion being Veterans Affairs (VA) governmental hospitals (25%) or academic medical centers (20%), hospital and nonhospital outpatient (31%), and federal facilities (30%) with some (14%) reporting dual practice roles.<sup>9</sup> Almost half (46.5%) of MHCPSs report having prescriptive authority within their practice settings with 28% reporting no cosignature required.<sup>9</sup> MHCPSs are able to provide a wide range of services and care for patients with psychiatric diagnosis and act as medication experts (including identifying side effects and drug interactions) and can help to ensure care goals are being met, assess the status of the condition, and determine the effectiveness of the care plan and medications.<sup>10</sup> Additionally they can evaluate and manage disease states, evaluate the continued need of medications, assess and optimize therapy, assist with medication-induced effects, provide patient-centered care, refer patients to other health care providers, provide medication counseling for patients and caregivers, improve medication-related outcomes, and help reduce health care costs.<sup>10,11</sup> Goldstone et al produced a special article detailing selected areas (opioid use disorder, antipsychotic use in children, long-acting injectable antipsychotic medications, clozapine use, and transitions of care and care coordination) as examples in which BCPPs work and could improve access and care amid the shortage of behavioral health providers.<sup>11</sup> Studies evaluate benefits of MHCPSs in primary care clinics.<sup>12,13</sup> A 2019 study to evaluate the

**TABLE 1: Patient survey questions**

Statement	Response Choices				
The provider <b>INTRODUCED</b> themselves to you	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
The provider was <b>RESPECTFUL</b> to you	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
The provider <b>LISTENED</b> to you	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
The provider <b>UNDERSTOOD</b> your problem	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
The provider <b>USED WORDS</b> that were easy for you to understand	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
The provider allowed you time to <b>ASK</b> questions	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
The provider <b>ANSWERED</b> questions you had	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
The provider spent <b>ENOUGH TIME</b> with you	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
You have <b>CONFIDENCE</b> in the provider and plan	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
You feel <b>SATISFIED</b> overall with the services you received from the provider	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree

Strongly agree (5), agree (4), neutral (3), disagree (2), or strongly disagree (1).

impact of an integrated psychiatric pharmacy service in a primary care clinic reported almost 300 psychiatric medication consults, and 47 patients having 102 FtF visits accounting for a small portion (5%) of the pharmacist FtF visits over a 1-year period.<sup>12</sup> Another study evaluated the role of psychiatric pharmacists in the management of depression within an ambulatory care behavioral health clinic and reports a maintenance of reduced Patient Health Questionnaire-9 scores and improved access to care with patients being seen in a third of the time as compared with other clinic patients.<sup>13</sup> This data highlights the value and utility of pharmacists in a provider role. Currently pharmacists are not recognized at the federal level as providers (precluding services from clinical pharmacists from being a covered benefit under Medicare nationally) though some states do recognize pharmacists as providers. There are variations in this state-based recognition of provider status in areas of billing and reimbursement, physician oversight, or CPA requirements, for example. Psychiatric pharmacists differ from psychiatrist in that they are not classically trained as diagnosticians, and the emphasis is more focused on being medication experts and adjusting medications or therapy plans after a diagnosis has been made. In North Carolina, a provider (such as a psychiatrist or primary care provider) must first evaluate and provide a diagnosis; then, the patient can be referred to a CPP for drug therapy management. CPPs are required to update the supervising physician on the patient's status and care after encounters.

## Methods

### Study Design

A CPP serving as an MHCPS was added to the clinic in January 2021 after obtaining the appropriate licensure and

began offering another clinic period once monthly for patients in May 2021. Recruitment and data collection for the study involved a population of patients from the clinic and was conducted from May 3, 2021, through March 3, 2022, and clinic staff were utilized to provide documentation to potential participants. Baseline characteristics, primary diagnosis, number of visits, and length of time with the provider during a visit was collected. To narrow down the population, specific inclusion and exclusion criteria were used. Individuals  $\geq 18$  years of age, those who utilized psychiatric services offered by the clinic, and those willing to complete a satisfaction survey were included in the study. Those who utilized the clinic's psychiatric services and were unable to complete a satisfaction survey with or without assistance or who were unwilling to complete the survey were excluded. Patients were seen by 1 of the 2 psychiatrists or by the MHCPS, which created 2 separate groups for survey assessment. Patients could only be seen by the MHCPS after referral from a psychiatrist. Both psychiatrists and the MHCPS offered once monthly in-person clinic visits (3 care clinics per month). After consultation was provided to recruited participants, 10-minute postappointment satisfaction surveys (Table 1) were collected and used to evaluate patient perceptions of MHCPS- versus psychiatrist-based care, using 5-point Likert scale comparisons. Each survey listed 10 statements assessing provider care with responses including strongly agree (5), agree (4), neutral (3), disagree (2), or strongly disagree (1). Surveys were adapted from the Kaiser Permanente Northwest Region Medicine Survey.<sup>14</sup> Nurses assisted with the completion of post-appointment surveys based on patients' literacy levels. In addition to satisfaction surveys, MHCPS-based care was evaluated for a patient's clinical response, medication alteration/optimization, and reported rates of adverse events. Patient consent was obtained postappointment prior to completion of a satisfaction survey, and no

**TABLE 2: Baseline characteristics of study population**

Parameter	MHCPS ( <i>n</i> = 11)	Psychiatrist ( <i>n</i> = 34)
Age, mean (SD), y	40.5 (11.54)	34.6 (6.6)
Race, <i>n</i> (%)		
White	11 (100)	28 (82.4)
Non-White	0 (0)	6 (17.6)
Male sex, <i>n</i> (%)	9 (81.8)	16 (47.1)
Number of visits, mean (SD)	2.3 (1.8)	1.6 (1.3)
Visit length, mean (SD), min	23.5 (12.7)	22.7 (16.6)

monetary incentive was used. Research was approved by the university research review board.

### Objectives

There were 3 objectives accomplished by the study. The primary objective includes the evaluation of adding a CPP serving as an MHCPS to the clinic and the impact this may have on psychiatric care offered, whereas secondary objectives include the examination of patient perceptions between MHCPS- versus psychiatrist-based care and to report interventions made by the MHCPS.

### Statistics

Descriptive statistics were used to report baseline characteristics, demographics, diagnoses, and medication changes. An independent sample *t*-test was used to compare mean scores of patient responses to survey questions and to assess for any differences in patient preference between MHCPS- versus psychiatrist-based care. Mean score differences were statistically significant if *p*-values fell below .05. Data was analyzed using IBM SPSS Statistics for Windows, version 26.

## Results

### Satisfaction Survey Enrollment and Baseline Characteristics

An MHCPS was added to the clinic in January 2021 and began offering another clinic period for patient appointments in May 2021. From May 3, 2021, to March 3, 2022, a total of 45 surveys were completed; 34 (75.6%) indicated care from a psychiatrist, and 11 (24.4%) indicated care from the MHCPS. The MHCPS provided care for a total of 24 patients during the study period (average of 2 to 3 patients each month), and 45% of those patients completed a survey. All baseline characteristics are reported (Table 2). Mean number of visits and mean visit lengths were balanced between both survey groups unlike age, race, and gender, which displayed more variability. The primary diagnoses seen between both groups (most to least common) include generalized anxiety disorder, major depressive disorder, bipolar disorder, post-traumatic stress disorder, obsessive-compulsive disorder, schizophrenia, insomnia, and attention-deficit/hyperactivity disorder. Out of 45 surveys, 16 (35.6%) did not specify a diagnosis.

### Satisfaction Survey Outcomes

MHCPS- and psychiatrist-specific mean scores were used to calculate an overall mean score for each question with *p*-values listed (Table 3). Nine of 10 statements (90%) had an overall mean score of 4.8. The only survey statement with an overall mean score of 4.9 was “Allowed you to ask questions.” Every overall mean score with *p* > .05 indicated no statistically significant differences among patient preference for MHCPS- versus psychiatrist-based care. Regarding survey responses, only the psychiatrist group contained responses of neutral in only 3 statements, whereas this response never appeared in the MHCPS

**TABLE 3: Patient satisfaction questionnaire mean scores and *p*-values**

Statement	MHCPS Mean Score	Psychiatrist Mean Score	Overall Mean Score	<i>p</i> -value
The provider <b>INTRODUCED</b> themselves to you	4.9	4.8	4.8	.309
The provider was <b>RESPECTFUL</b> to you	4.9	4.8	4.8	.507
The provider <b>LISTENED</b> to you	4.9	4.8	4.8	.507
The provider <b>UNDERSTOOD</b> your problem	4.8	4.8	4.8	.748
The provider <b>USED WORDS</b> that were easy for you to understand	4.9	4.8	4.8	.507
The provider allowed you time to <b>ASK</b> questions	4.9	4.9	4.9	.643
The provider <b>ANSWERED</b> questions you had	4.8	4.9	4.8	.788
The provider spent <b>ENOUGH TIME</b> with you	4.9	4.8	4.8	.507
You have <b>CONFIDENCE</b> in the provider and plan	4.9	4.8	4.8	.567
You feel <b>SATISFIED</b> overall with the services you received from the provider	4.8	4.8	4.8	.892

group. No patient in either group chose disagree or strongly disagree. Conversely, every survey indicated a response of agree and strongly agree for all 10 statements with the latter occurring most frequently. For the MHCPS group, statements tied to the keywords “understood,” “answered,” and “satisfied” showed a response of strongly agree 81.8% of the time. The remaining 7 statements showed this response 90.1% of the time. For the psychiatrist group, the percentage of responses indicating strongly agree contained more variability, but statements tied to the keywords “respectful,” “listened,” “used words,” and “enough time” showed this response most frequently at 82.4%. Regarding the total amount of times strongly agree was used between both groups, the most common rate was 84.4% for 6 of the statements, and no rate dropped below 80%.

## MHCPS Interventions

MHCPS intervention-based data was collected from May 2021 to March 2022. There were 24 of 29 total planned visits with 82.8% of patients presenting for their appointments and 5 no-show appointments. Four alterations to patient treatment were made in this time due to adverse drug reactions, whereas other changes were made based on efficacy. There were 8 clinical responses to treatment allowing for continuation of current therapy. In total, 18 occurrences of medication optimization took place. Of these 18 optimizations, there were 6 (33.3%) dose increases, 1 (5.6%) dose decrease, 8 (44.4%) medication additions, and 3 (16.7%) medication discontinuations.

## Discussion

Based on the results of the study, all research questions were successfully answered. Referral from a psychiatrist allowed the MHCPS to see 2 to 3 patients each month. Each time this occurred, an additional load was taken off the psychiatrist, which afforded more time for psychiatrists to consult and evaluate new patients and offer more care to the community served by the clinic. Two items aided in increasing access to psychiatric care. These were the MHCPS evaluating patients as well as the psychiatrist having openings in the schedules due to transferring patients to the MHCPS via referrals. In the 10 months MHCPS interventions were reported, the number of patient appointments totaled 24, demonstrating increased access to care by adding an additional provider to the clinic. It was hypothesized that the impact could also be noted by comparing the previous year data to the current year of psychiatric patients seen in the clinic, but because of the way the data was collected and categorized, it could not be evaluated for this endpoint. There were 8 continuations and

18 optimizations made to therapy in this time, totaling 26 appropriate cases of medication management by the MHCPS. This further shows a positive impact on the patients served by the clinic. The results for satisfaction survey outcomes indicate no statistically significant differences in a patient’s perception of MHCPS- versus psychiatrist-based care. This, in conjunction with other studies demonstrating positive effects on patient care, offers an additional evidence-based rationale for adding an MHCPS to psychiatrist-led clinics.<sup>9,11-14,16</sup> Rationale can be further examined from satisfaction survey responses left by patients. Most responses to all 10 survey statements illustrated the overall thoughts of patients strongly agreeing with the notion that an MHCPS can offer a similar level of direct patient care as a psychiatrist. This is especially evident regarding the trends in statement keywords reported in the results. Statistical results and trended keywords answered the second research question regarding potential differences that exist in MHCPS and psychiatrist care based on clinician respectfulness, attentiveness, helpfulness, proper communication, and patient confidence/satisfaction. If patients do not perceive significant differences in care offered between an MHCPS and a psychiatrist, whereas the former is able to effectively lessen the workload of the latter and increase access to psychiatric care, then a sound argument can be made for the addition of an MHCPS. A limitation of the study included a small sample size of 45 patients who completed surveys hindering the ability to detect differences among survey groups. Another limitation was the 2:1 ratio between psychiatrists and the MHCPS, which led to more patients being evaluated in the psychiatrist group compared with the MHCPS group instead of groups being equally distributed. An additional limitation included the allowance of patients with repeat visits to complete a survey more than 1 time, which may have altered the perception of care potentially found in a broader patient population. On the other hand, this may not be a limitation in the sense that perception of care could change from 1 appointment to another from a patient’s perspective. In conclusion, MHCPS-based care performed similarly and with no significant differences to psychiatrist-based care based on patient satisfaction surveys.

This data highlights the utility of pharmacist involvement in the management of disease states under a CPA and providing increased access to clinical care similar to previously published results.<sup>12,13</sup> More patient appointments were made available and were utilized due to the addition of an MHCPS to the clinic. MHCPS-provided care continued after the study period, and the MHCPS patient load has increased from 24 to 49 from March 2022 to November 2022. From the initiation of this study to the last review of this manuscript, no patients had decompensated when under the care of the MHCPS. Billing and revenue were not evaluated during this study because patients are

not billed for either psychiatrist- or MHCPS-provided care at this clinic.

## Future Impact

This study could be utilized as data to assert that pharmacists with additional training, credentialing, or those who are supported by a physician as evidenced through a CPA should be recognized as care providers at both the federal and state level and, therefore, should be able to bill for clinical services. Studies show that BCPPs/MHCPSs are able to increase access to evidence-based care, manage health care costs, reduce stigma, and provide treatment of comorbid psychiatric and other general medical conditions to improve patient outcomes.<sup>11</sup> Pharmacists serving as providers should not be viewed as competition to providers such as doctors, NPs, or PAs but as a complement with a common goal of serving patients, increasing access to care, and creating more tolerable patient caseloads and working conditions in an era with high demand for care. Chavez et al carried out a study in which provider satisfaction surveys (60% response rate) were conducted after an MHCPS was integrated into the ambulatory care clinic team and worked autonomously seeing patients FtT and responded to consults from other providers.<sup>12</sup> Patients had primary psychiatric diagnoses of MDD, GAD, bipolar disorder, schizophrenia, and insomnia similar to this study. Results revealed that 61.5% of providers refer patients to the MHCPS for psychiatric medication management, 100% use MHCPS for psychiatric consults, and 85% strongly agreed that the MHCPS had made them more comfortable in their psychiatric medication knowledge.<sup>12</sup> MHCPSs are utilized within the VA to increase access to care and improve medication outcomes, clinical outcomes, safety, and patient-centered care by collaborating with the interdisciplinary team, supporting patients and caregivers, and providing comprehensive medication management.<sup>15</sup> Throughout the VA system, clinical pharmacy specialists (CPSs) carry out job duties autonomously, collaboratively, and with prescriptive authority focused in their area or practice/specialty area.<sup>15</sup> CPSs becoming recognized as providers and having the ability to bill for services could create salaries and fund positions for roles similar to the MHCPS role in this study. When MHCPS practice was assessed, 64.6% ( $\pm 45.5\%$  standard deviation) reported funding by their clinical practice site versus funding sources such as academic institutions, grants, or other.<sup>9</sup> MHCPSs and those specializing in other areas have a skill set and ability for patient care provision worthy of billing for services and reimbursement as providers. For years, there have been reports of insufficient access to psychiatric care providers, and recent estimates suggest that the United States will experience a shortage of more than 24 000 providers by 2030.<sup>16</sup> The expansion of the role of the MHCPS as a provider is deemed an “essential strategy in the face of the declining number of psychiatrists” to improve access to high-quality

psychiatric care.<sup>15(pS107)</sup> It is time to allow pharmacists with additional training, credentialing, or those who are supported by a physician as evidenced through a CPA to take on this necessary role. As shown in this study, the addition of an MHCPS increased patient access to psychiatric care without any differences in patient perception of the care they received.

## References

1. Czeisler M, Lane RI, Petrosky E, Wiley JF, Christensen A, Njai R, et al. Mental health, substance use, and suicidal ideation during the COVID-19 pandemic - United States, June 24-30, 2020. *Mmwr Morb Mortal Wkly Rep*. 2020;69(32):1049-57. DOI: [10.15585/mmwr.mm6932a1](https://doi.org/10.15585/mmwr.mm6932a1)
2. Taquet M, Luciano S, Geddes JR, Harrison PJ. Bidirectional associations between COVID-19 and psychiatric disorder: retrospective cohort studies of 62 354 COVID-19 cases in the USA. *Lancet Psychiatry*. 2021;8(2):130-40. DOI: [10.1016/S2215-0366\(20\)30462-4](https://doi.org/10.1016/S2215-0366(20)30462-4)
3. Belz M, Hessmann P, Vogelgsang J, Schmidt U, Ruhleder M, Signerski-Krieger J, et al. Evolution of psychosocial burden and psychiatric symptoms in patients with psychiatric disorders during the Covid-19 pandemic. *Eur Arch Psychiatry Clin Neurosci*. 2022;272(1):29-40. DOI: [10.1007/s00406-021-01268-6](https://doi.org/10.1007/s00406-021-01268-6)
4. The Free Clinics. Changing lives together, with hope & health, 2018-19 annual report [Internet] [cited 2022 Jun 24]. Available from: <https://www.thefreeclinics.org/wp-content/uploads/2019/11/Annual-Report-2019-Final.pdf>
5. Gloster AT, Lamnisos D, Lubenko J, Presti G, Squatrito V, Constantinou M, et al. Impact of COVID-19 pandemic on mental health: an international study. *Francis JM. PLOS One*. 2020;15(12):e0244809. DOI: [10.1371/journal.pone.0244809](https://doi.org/10.1371/journal.pone.0244809)
6. North Carolina Board of Pharmacy. Clinical pharmacist practitioners. [Internet] [cited 2022 Jun 24]. Available from: [http://www.ncbop.org/pharmacists\\_cpp.htm](http://www.ncbop.org/pharmacists_cpp.htm)
7. Scott MA, Heck JE, Wilson CG. The integral role of the clinical pharmacist practitioner in primary care. *NC Med J*. 78(3):181-5. DOI: [10.18043/ncm.78.3.18](https://doi.org/10.18043/ncm.78.3.18)
8. Finley PR, Rens HR, Pont JT, Gess SL, Louie C, Bull SA, et al. Impact of a collaborative pharmacy practice model on the treatment of depression in primary care. *Am J Health Syst Pharm*. 2002;59(16):1518-26. DOI: [10.1093/ajhp/59.16.1518](https://doi.org/10.1093/ajhp/59.16.1518)
9. Silvia RJ, Lee KC, Bostwick JR, Cobb CD, Goldstone LW, Moore TD, et al. Assessment of the current practice of psychiatric pharmacists in the United States. *Ment Health Clin*. 2020;10(6):346-53. DOI: [10.9740/mhc.2020.11.346](https://doi.org/10.9740/mhc.2020.11.346)
10. American Association of Psychiatric Pharmacists. Helpful insights for patients and caregivers. [Internet] [cited 2023 Feb 13]. Available from: <https://aapp.org/resource/patients>
11. Goldstone LW, Dipaula BA, Werremeyer A, Botts S, Hepburn B, Liu HY, et al. The role of board-certified psychiatric pharmacists in expanding access to care and improving patient outcomes. *Psychiatr Serv*. 2021;72(7):794-801. DOI: [10.1176/appi.ps.202000066](https://doi.org/10.1176/appi.ps.202000066)
12. Chavez B, Kosiog E. Impact on an integrated psychiatric pharmacy service in a primary care clinic. *Ment Health Clin*. 2019;9(4):269-74. DOI: [10.9740/mhc.2019.07.269](https://doi.org/10.9740/mhc.2019.07.269)
13. Silvia R, Plum M, Dufresne R. Efficiencies and outcomes of depression treatment by a psychiatric pharmacist in a primary care clinic compared with treatment within a behavioral health clinic. *J Am Pharm Assoc* (2003). 2020;60(5):S98-106. DOI: [10.1016/j.japh.2020.05.015](https://doi.org/10.1016/j.japh.2020.05.015)

14. Hooker RS, Potts R, Ray W. Patient satisfaction: comparing physician assistants, nurse practitioners, and physicians. *TPJ*. 1997;1(1):38-42. DOI: [10.7812/TPP/97.992](https://doi.org/10.7812/TPP/97.992)
15. Moore T, Groppi J, Ourth H, Morreale A, Torrise V. Increasing access to care using clinical pharmacy specialist providers in outpatient mental health: successful practice integration within the Department of Veterans Affairs. *J Am Pharm Assoc* (2003). 2020;60(5):S107-12. DOI: [10.1016/j.japh.2020.03.011](https://doi.org/10.1016/j.japh.2020.03.011)
16. HRSA Health Workforce. Behavioral Health Workforce Projections, 2017-2030. [Internet] [cited 2023 Feb 13]. Available from: <https://bhwh.hrsa.gov/sites/default/files/bureau-health-workforce/data-research/bh-workforce-projections-fact-sheet.pdf>