Differences in Utilization of Perinatal Psychiatric Teleconsultation Line Between Primary Care and Mental Health Providers

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ABSTRACT

Purpose: Teleconsultation has been a newly recognized avenue by which to provide psychiatric services to perinatal populations being treated either by psychiatric or primary care providers. The Periscope Project (TPP) is a business-hours teleconsultation line providing enrolled clinicians with access to a subspecialty-trained psychiatrist, as well as community resources and provider education. This study examines the differences in consultation between enrolled providers.

Methods: Encounter data were entered into REDCap by TPP's team members. Data were analyzed using summary statistics. Satisfaction information was attained by follow-up survey.

Results: During the first 24 months of program activity, TPP had a total of 737 referred encounters, 70.4% from primary care and 20.5% from psychiatry. There were statistically significant differences between psychiatric and primary care providers in terms of recommendations for use of certain types of medications and use of diagnostic screenings, as well as differences in what providers would have recommended in absence of TPP's involvement.

Conclusions: Differences in enrollee's rationale for consultation allows for better understanding of the needs of front-line providers. Tailoring educational information and even teleconsultation information based on provider group can allow for more efficient patient care and resource utilization. Providers across the spectrum found TPP beneficial, indicating that continued availability to all providers caring for women of reproductive age is important.

INTRODUCTION

One in 7 women in the United States struggle with depression during pregnancy and postpartum periods.[1] The number of affected mothers climbs higher when other disorders, such as anxiety, bipolar disorder, schizophrenia, and substance use disorders are included, and resulting complications affect everyone involved, including mothers and their children, families, and even care providers.[2-5] The National Center for Health Workforce Analysis estimates that by 2030, the supply of adult psychiatrists will decrease by 27%.[6] Given that more people today are seeking mental health care than previously, we cannot address even general psychiatric needs through a traditional service model, let alone provide adequate and timely subspecialty care for perinatal populations.[6]

In July 2017, the PERInatal Specialty Consult Psychiatry Extension (PERISCOPE) Project (TPP) launched in Wisconsin as a business-hours real-time teleconsultation line for all providers caring for preconception, pregnant, or postpartum women, including obstetric, primary care (internal and family medicine and pediatricians), and psychiatric physicians and advanced practice providers (APP). Information regarding project design, implementation, and descriptive characteristics from the first 24 months of program activity has been reported previously.[7] For the remainder of this paper, "primary care providers" encompasses MD/DO, physician assistant, nurse practitioner, and midwifery providers in the fields of obstetrics, pediatrics, and internal and family medicine. "Psychiatric providers" encompasses MD/DO, physician assistant, and nurse practitioner providers in the psychiatry and behavioral health settings.

Data are reviewed regarding the differences in consultation questions between provider types over the first 2 years of program activity. This information can highlight current differences in practice, support standardized curriculum development,

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Table 1. Represented Provider Type and Patient Status at Time of Consultation

	n	Psychiatry No. (%)	Primary Care No. (%)
Provider type			
Physician (MD/DO)	383	90 (59.6)	293 (56.5)
Nurse practitioner (NP)	139	58 (38.4)	81 (15.6)
Midwife	136	0 (0)	136 (26.2)
Physician assistant (PA)	12	3 (2.0)	9 (1.7)
Total	670	151	519
Patient status			
1st trimester	164	45 (31.7)	119 (23.6)
2nd trimester	149	26 (18.3)	123 (24.4)
3rd trimester	106	26 (18.3)	80 (15.8)
Postpartum lactating	107	18 (12.7)	89 (17.6)
Postpartum not lactating	52	0 (0)	52 (10.3)
Preconception	40	22 (15.5)	18 (3.6)
Interconcpetion	6	2 (1.4)	4 (0.8)
Other	23	3	20
Total	647	142	505

Table 2. Current Symptoms and Diagnostic Concerns Reported by Enrolled Provider to TPP Team Members at Time of Consultation

	n	Psychiatry No. (%)	Primary Care No. (%)
Current symptoms[a]			
Depressive[b]	323 (48.2)	52 (34.4)	271 (52.2)
Anxiety[b]	273 (40.7)	38 (25.2)	235 (45.3)
Mania	7 (1.0)	2 (1.3)	5 (1.0)
Appetite	2 (0.3)	0 (0)	2 (0.4)
Suicidality	12 (1.8)	2 (1.3)	10 (1.9)
Sleep changes	51 (7.6)	6 (4.0)	45 (8.7)
Psychotic[b]	36 (5.4)	18 (11.9)	18 (3.5)
Mood liability	46 (6.9)	14 (9.3)	32 (6.2)
Irritability	16 (2.4)	3 (2.0)	13 (2.5)
No psychiatric symptoms[b]	91 (13.6)	40 (26.5)	51 (9.8)
Diagnostic concern[a]			
Mood disorder	445 (66.4)	97 (64.2)	348 (67.1)
Anxiety disorder[b]	248 (37)	32 (21.2)	216 (41.6)
Psychotic disorder[b]	34 (5.1)	17 (11.3)	17 (3.3)
Substance use disorder[b]	44 (6.6)	16 (10.6)	28 (5.4)
ADHD[b]	45 (6.7)	17 (11.3)	28 (5.4)
Sleep disorder	15 (2.2)	2 (1.3)	13 (2.5)
Other	31 (4.6)	7 (4.6)	24 (4.6)

Abbreviations: TPP, The Periscope Project; ADHD, attention-deficit/hyperactivity disorder.

[a] Current symptoms and diagnositic concerns are not mutually exclusive categories. Some patients presented with multiple symptoms.

[b] Notes the difference is statistically significant.

encourage routine screening, and provide direction for analysis of programmatic cost benefit.

METHODS AND MATERIALS

Triage

Initial calls to TPP are triaged by a coordinator who is trained to provide community resources with specific knowledge regarding availability within Wisconsin. The triage coordinator also opens an encounter with the database REDCap (Vanderbilt University, Nashville, Tennesee). Information gathered includes deidentified patient descriptors such as age, pregnancy and lactation status, geographic location of the clinic, diagnoses, number/type of psychotropics, provider type, and rationale for call (assistance with diagnosis, medications, community resources, or referral information). This study was approved by the institutional review board of the host institution; as no direct patient contact occurred, providers completed an online waiver of consent on enrollment to TPP. Data presented here correspond to the first 24 months of programming, July 1, 2017 through June 30, 2019.

Note that while TPP was launched to focus on utilizers within the state of Wisconsin, no eligible utilizer was denied access based on geographic location. Thus, a minority of utilizers were located in states other than Wisconsin though are grouped into these data without delineation.

Satisfaction Surveys

Following encounters with TPP, utilizers are sent a survey via email. The survey is brief and requests responses regarding provider satisfaction, ability to extrapolate knowledge to care for other patients, and whether the gained knowledge was effective to assist with initial patient.

Data Analysis

HIPAA-compliant data were stored in REDCap and deidentified, relevant statistics to this study were imported into EXCEL (Microsoft, Redmond, Washington) for the designated time range. Basic summary statistics were then calculated using summation formulas within EXCEL. Statistical significance was defined as a resulting P value of < 0.05.

RESULTS

Provider Type Utilization

Over the first 2 years of program activity, TPP had a total of 737 referred encounters, 70.4% from primary care and 20.5% from psychiatry. Table 1 delineates provider type and patient status. Provider type contains possible categories of physician (MD/DO), physician assistant, nurse practitioner, or midwife. The majority of utilizers were physicians. Patient status is delineated as preconception, trimester of pregnancy, or postpartum status, as well as lactation status. Of note, no psychiatric providers consulted on a nonlactating postpartum patient, while 10.3% of primary care providers consulted on a patient in this category. Psychiatric providers were more likely to consult regarding preconception patients; this category comprised 15.5% of psychiatric consults vs only 3.6% of primary care consults.

Diagnoses and Screening

Table 2 displays information around both current symptoms and diagnostic concerns. It is important to note that these are not

mutually exclusive categories and utilizers could report multiple concerns while consulting on a given patient. Of note, no psychiatrists consulted for a screening tool question, whereas 0.8% of primary care providers did so. No psychiatrists reported using a validated screening tool to assess for depression during patient visit, though 28.8% of primary care visits did.

In terms of current symptoms, primary care was more likely to consult regarding depression (52.2% vs 34.4%) and anxiety (45.3% vs 25.2%), whereas psychiatric providers were more likely to consult for psychotic symptoms (18% vs 3.5%) or for a patient without current psychiatric symptoms (26.5% vs 9.8%). In terms of diagnosis, these trends continue, with primary care patients more often meeting criteria for an anxiety disorder (41.6% vs 21.2%) and psychiatry patients more often meeting criteria for a psychotic disorder (11.3% vs 3.3%), substance use disorder (10.6% vs 5.4%), or attention-deficit/hyperactivity disorder (ADHD) (11.3% vs 5.4%).

Rationale for Consultation

A total of 15.2% of consults involved diagnostic criteria information, with primary care being significantly more likely to do so (7.5% vs 1.3% of contacts). More than 90% (91.8%) were seeking medication information (multiple questions could be asked during same consult), with rates being similar between psychiatric and primary care utilizers. Questions were rarely raised surrounding screening tools (<1% of calls), and 3.1% of calls were follow-ups from a prior encounter (3.7% of primary care contacts vs 1.3% of psychiatric contacts).

Medication Interventions

Table 3 displays medication information. A majority of patients were taking psychotropic medications at time of consult; psychiatrists' patients were more likely to be prescribed psychotropic medications than primary care patients. Nonsignificantly different rates of use were seen between utilizers for medication classes, including selective serotonin reuptake inhibitors (SSRI), serotonin norepinephrine reuptake inhibitors (SNRI), and benzodiazepines. Significantly disparate rates of use were seen for atypical antipsychotics and mood stabilizers between the 2 provider groups, with psychiatric providers utilizing them more often.

In addition to types of medications utilized, data were gathered to assess whether recommendations were to increase or decrease medications. A total of 10.8% of primary care contacts and 6% of psychiatry contacts resulted in recommendations to increase medication dosage as a result of contact, whereas 1% to 2% of each had recommendations to decrease dosage. Primary care consultations were more likely to have medications added (3.7%) than psychiatric ones (1.3%). Medications were changed in 4% to 5% of both groups. Psychiatrists were more likely to receive recommendation to taper/discontinue medications (9.3%) than primary care physicians (3.6%). No medication changes were recommended in 14.3% of primary care contacts and in 28.5% of psychiatric contacts.

Table 3. Current Psychotropic Medication Being Utilized by Enrolled Provider's Patient at Time of Consultation

	n	Psychiatry No. (%)	Primary Care No. (%)
Taking any psychiatric medication at time of consultation[a]	399	95 (67.4)	244 (49.1)
SSRI	182	43 (28.5)	139 (26.8)
SNRI	23	5 (3.3)	18 (3.5)
Tricyclic	1	1 (0.7)	0
Other antidepressant	62	15 (9.9)	47 (9.1)
Atypical antipsychotic[a]	65	28 (18.5)	37 (7.1)
Typical antipsychotic	2	2 (1.3)	0 (0)
Benzodiazepines	53	16 (10.6)	37 (7.1)
Mood stabilizer[a]	54	28 (18.5)	26 (5.0)
Stimulant	41	14 (9.3)	27 (5.2)
Medication-assisted treatment	16	6 (4.0)	10 (1.9)
Sleep aids	18	7 (4.6)	11 (2.1)
Anxiolytic	22	5 (3.3)	17 (3.3)
Opioids	2	0 (0)	2 (0.4)
Other	19	8 (5.3)	11 (2.1)

Abbreviations: SSRI, selective serotonin reuptake inhibitors; SNRI, serotonin norepinephrine reuptake inhibitors.
[a]Notes the difference is statistically significant.

Options in Lieu of TPP

Requesting physicians were also asked what they would have done if TPP had not been available for consultation that day. Just 1.5% of primary care providers and 3.3% of psychiatric providers reported that they would have discontinued medications in this situation; 13.9% of primary care would have started a medication versus 8.6% of psychiatric providers, and 40.7% of primary care encounters would then have referred patients for mental health consultation vs 2% of psychiatric providers who would have referred to further subspecialty level care. Eight percent to 10% of both groups would have consulted with another provider. Psychiatrists reported that in 36.4% of cases, they would have done more independent research, which is higher than 8.9% of primary care providers who would have done the same. Of primary care consults, 1.3% would have recommended patients go to the emergency department (n=7), whereas none of the psychiatric providers would have referred similarly.

Teleconsultation Response Data

For both primary care and psychiatric providers, there was no significant difference in route of contact (telephone vs email), time spent on phone during consultation, or survey response. All utilizers either agreed or strongly agreed that they were satisfied with services received, felt they could now more effectively manage their patient, and that they could incorporate learned information to help better care for other patients in future.

DISCUSSION

Differences between utilizers occur for many reasons. First, the inherent differences in populations served are important. Psychiatrists are more often caring for the chronically mentally ill, those struggling with psychotic or bipolar disorders, severe substance use disorders, or treatment-refractory anxiety or depression. This aligns with the differences seen in presenting symptoms and resulting diagnoses in Table 2. As such, psychiatrists typically are using newer psychotropics, augmentation agents, or second- or third-line medication choices for a given condition. Unfortunately, didactic education in the specific subspecialty of perinatal mental health is newer; even in today's curriculum, the amount of training varies widely between programs. The National Curriculum in Reproductive Psychiatry was conceived in 2013 and first piloted during the 2018-2019 academic year (http://ncrptraining.org/). Given how recent this has been implemented, many psychiatrists do not feel comfortable counseling patients on specific risks regarding psychotropic agents in pregnancy. For psychiatrists, TPP allows for psychoeducation regarding use of these medications in pregnancy. This knowledge can certainly then be applied to similar patients on a provider's panel. For those in primary care, the training in medication management of psychotropics in pregnancy is even more limited. Thus, consultations typically focus on more common psychotropics, such as SSRIs; these were the highest number of represented medications and are first-line agents for control of a variety of mental illnesses, such as depressive disorders, anxiety disorders, posttraumatic stress disorder, and obsessive-compulsive disorder.

As noted above, psychiatrists were more likely to consult regarding psychotic illnesses, whereas primary care more often focused on depressive and anxiety symptomatology. Without TPP, patients with a stable illness who can be safely managed by their primary provider would have been referred to mental health, possibly increasing the wait time for a patient with refractory or more severe disease who requires subspecialty-level management. By utilizing TPP, patients can more appropriately stay with their existing care team, allowing for evidence-based practice and knowledge gain in a setting where the patient is already known and comfortable, or TPP can serve as a bridge to more specific levels of psychiatric care without delaying initiation of care.

Psychiatric providers are more likely than primary care providers to consult regarding preconception management. Given the movement towards having all providers assess a patient's plan for pregnancy within the next year, TPP can also support any provider in preconception management of psychotropic medications.[8] This will allow for an overall improvement in maternal and fetal outcomes and an increase in evidence-based management of psychotropics.

Primary care utilization more often results in recommendations to increase medications, whereas psychiatric consultants more often receive recommendations to decrease medications. This information is beneficial in that it affects differential educational resources and trainings between the 2 groups. Psychiatric utilizers are more often caring for patients using stimulants and benzodiazepines, which carry a dose-dependent risk in pregnancy unlike antidepressant medications and thus require a more detailed risk/benefit discussion.[9,10] As such, TPP can seek to offer more detailed trainings for psychiatric providers to educate on those specific risks, as well as nuances of tapering or discontinuing those medications classes in anticipation of or during pregnancy or lactation. Primary care utilizers—who are most often prescribing SSRI or SNRI agents—can receive more focused education on risks of those medications, as well as the risks of untreated maternal symptoms or illnesses, which can be overlooked. In summation, though utilizers are at times prescribing significantly different medications and receiving different management recommendations, consultative services can still serve to benefit both populations in their patient care.

Other overt differences in groups are revealed by use and knowledge of screening tools. The 2015 recommendations from the American College of Obstetrics and Gynecology to screen all pregnant and postpartum women for depression, as well as directives from other national institutions such as the American Medical Association and the US Preventive Services Task Force to screen all patients for depression routinely, aim to to increase use of validated screening tools.[11,12] These tools (specifically the Edinburgh Postnatal Depression Scale [EPDS], Patient Health Questionnaire [PHQ]-9, and PHQ-2) generate a numeric score that is utilized both as a screen and a rough indicator of severity of illness. However, these tests are not diagnostic tools, and the gold-standard for diagnosis of an illness remains a thorough psychiatric interview. This, then, indicates the likely reason for the high use of screening tools in a primary care setting and the lack of such in psychiatric settings. There remains, though, a benefit in psychiatric professionals also utilizing such tools, given that the ability to track a numeric score over time does allow for an objective measure of symptom severity. As patients increasingly seek care across health systems and from a variety of provider types and specialties, there is value in quantitative information being available and interpretable by multiple providers.

It is also important to know that from the primary care subset, providers reported they would have sent the patient to the emergency department for further assessment in 7 cases. As emergency psychiatric services are also uncommon in most hospitals, this could have resulted in a few different, though costly, interventions. On the one hand, the patient could have been released to outpatient care, with a possible significant wait time to see a psychiatric specialist; this could result in a delay of needed care and sequalae. At the opposite end of the spectrum, the patient could have been referred for inpatient treatment. While inpatient level of care is necessary at times, it should be utilized when indicated and not

as a default plan due to lack of resources. TPP was of assistance in these 7 cases, such that the patient was not then referred for emergency services and more costly care when consultation was of sufficient benefit.

CONCLUSION

These data brings to light the differences in consultation between primary care and psychiatric providers. As a service that seeks to support all those caring for reproductive-age women, it is imperative to understand the different needs of utilizers in order to best promote evidence-based care, improve the knowledge base of providers, and encourage an efficient service that can continue to be utilized real-time.

Our analysis implies that primary care (OB/GYN, internal and family medicine, and pediatrics) consults focus predominantly on the more common psychiatric illnesses (depressive and anxiety disorders) and more typically involve first-line medications. Availability of TPP to this group resulted in avoidance of ER visits in several cases, as well as maintenance of patient within their current medical care setting instead of referral to behavioral health for management. Psychiatric and behavioral health clinicians saw more psychotic and alcohol and other drug abuse (AODA) illnesses than primary care. They were less likely to use screening tools and more likely to taper or discontinue medications. For these psychiatric providers, TPP served as a reference point in place of additional solo research into these topics. Though utilizers vary in terms of type of patient seen, management of medications, and subsequent recommendations, consultation was nonetheless rated to be beneficial across the board, and it is strongly recommended that such services be available to any health care provider caring for preconception, pregnant, or postpartum and lactating patients.

Future studies could assess further the related outcomes between precisely which medications were changed by a provider in an individual encounter, so as to better determine management types. For instance, are psychiatrists titrating or tapering benzodiazepines in pregnancy? What about primary care providers? This can further inform understanding on type of patient population and disorders being treated. Additionally, more detailed analysis of the cost-savings benefit of our program can bring to light additional ways to decrease health care spending while maintaining high-quality patient care and improving outcomes for mothers, babies, and families.

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