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Implementation of PHQ-2 Screening Tool in a Telemedicine Based Setting

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Introduction to the problem

Major depression is one of the most common mental health disorders in the United States, affecting approximately 21.0 million Americans at some point in their lives (National Institute of Mental Health, 2020). It is often diagnosed with other comorbidities such as generalized anxiety disorder and other mood disorders such as bipolar disorder and schizophrenia. Depression is also commonly treated in a primary care setting, but adequate follow up with medication adherence can be difficult due to patient volume and proper staffing (Basit et. al, 2020). The COVID-19 pandemic that shook the world in 2020 led to a boom in telemedicine. While telemedicine is not a new technology, it gained traction while citizens sheltered in place but still needed to see their provider. Telepsychiatry received positive attention with the increase in accessibility for patients, especially in rural communities (Pierce, 2021). Due to the emergency ruling, many licensing barriers were suspended to allow access to medical professionals across all 50 states. Telemedicine can be a solution to help address medication adherence issues to improve positive patient outcomes as well as increasing access to those living in rural communities (Pierce, et. al, 2021).

Literature Review

During the beginning of the COVD-19 pandemic, offices closed doors to their patients, and it became challenging for people to seek medical care. The risk of human contact and face-to-face interactions was the primary concern. Medical practices began to alter the way they treat patients by implementing telemedicine into their practices (Kichloo, 2020). Prior to COVID-19, telemedicine was not widely used. Many medical providers doubted the accuracies of the platform when comparing it to a live in-person visit. Telepsychology was only used in very limited settings (Pierce et. al, 2021). Many barriers existed such as Medicare regulations with insurance reimbursement and HIPAA laws. Due to emergency state laws and removal of these barriers during the COVID-19 pandemic, an influx of telemedicine, especially in telepsychology was seen (Pierce et. al, 2021).

A primary concern in the populations with mental health disorders is medical adherence (Basit, Matthews and Kunik, 2020). There are several reasons why patients discontinue their medications pre-maturely; side effects and remembering to take them on time are the most common reasons (Basit et. al, 2020). Basit et. al (2020), performed a systematic literature review to analyze the benefits of telemedicine-type interventions based on the interventions level of intensity. The low intensity interventions included reminders through an app or automated text messages. Improvement to medication adherence after 3 months showed that patients using the reminder app were 3 times more likely to stick to their medication regimen (Basit et. al, 2020). The medium-intensity interventions consisted of text messaging, telemonitoring via video, and telephone. Rollman et. al (2017), performed a randomized control trial on patients diagnosed with anxiety in a primary care setting with a telephone based collaborative care approach to determine treatment outcomes. After a 12-month follow up, patients reported less anxiety and better mental health (Rollman et. al, 2017) High intensity behavioral interventions proved to be the most successful for patient outcomes (Basit et. al, 2020). These interventions included: telephone visits, additional messaging, video conferencing and collaborative providers for additional support. Hilty (2007) found through their randomized control trial that almost 50% of patients reported improvement in depression symptoms utilizing high intensity intervention. The authors identified that regular follow ups were a key to success, so without tele-video, patient outcomes still improved (Hilty, 2007). It is important to note that the Hilty (2007) study was done prior to the start of the COVID-19 pandemic in 2020. A randomize controlled study performed by Fortney et. al, (2015) was also completed prior to the pandemic. The authors studied veterans with PTSD utilizing a telemedicine-based collaborative care model. Patients in the intervention group reported significant decrease in PTSD scores, although medication adherence remained the same in both groups (Fortney et al., 2015).

Project methods

The Collaborative Care Model guided this quality improvement project, which aimed to implement a depression screening tool in a telemedicine setting to assess depression in patients who might have called in for a different chief complaint. Patients were asked the two questions from the PHQ-

2 screening. A score of 3 or more indicated a positive score which alerted the provider to utilize the diagnostic PHQ-9 tool. The patient was then further evaluated, and treatment planned according to evidence-based guidelines and patient's willingness for treatment. All staff were trained on the screening process, however only medical providers were allowed to screen patients, and the process was evaluated at the end of the project. A total of seven medical providers were evaluated at the end of the project, including one nurse practitioner and six physician assistants.

The project location was a start-up telemedicine company in Denver, CO that had an outreach of 42 states at the time. The telemedicine company created an app that allowed anyone to message the company free of charge and offered subscription-based sign ups. Each patient was given unlimited messaging, phone calls and texting as part of their follow up process. The primary goal of this project was to evaluate the implementation of the screening process for future use and its effectiveness from a medical provider's point of view. Questions posed during the evaluation included asking about ease of use, its effectiveness, number of patients referred for further mental health treatment, and likelihood of continued use. The collaborative chronic care model was used because therapists and telemedicine customer services representatives were trained on the project. They were enlisted to help facilitate further patient treatment if needed.

Evaluation

The telemedicine practice at the beginning of the project consisted of four physician assistants and one nurse practitioner. The practice later grew to add four more physician assistants, three psychiatric nurse practitioners and one family nurse practitioner. Clients of the telemedicine practice were given a custom button on their mobile app that allowed them to answer the screening questions when prompted. The PHQ-2 screening tool was added and each practitioner would then prompt the patient to answer those questions prior to the start of their visit. If the patient screened positive on the PHQ-2, a PHQ-9 was conducted and further evaluated for mental health concerns. Some of those patients were referred to the mental health providers at the telemedicine practice or a local provider for further treatment, medication

management or both. This was considered a pilot project since no screening tools had been implemented prior to this project.

The intervention ran from August 2021 to November 2021. During that time, the practice hired its own mental health counselor who was able to receive referrals from practitioners participating in the project. Approximately 162 patients were screened and those who screened positive were referred to the mental health team at the telemedicine practice. Through the evaluation of the project, clinicians were asked to write down how many of their patients were escalated to higher levels of care. Approximately 18 patients were recorded to have received treatment for depression where they otherwise wouldn't have received mental health treatment. In addition to those 18 people, 6 more were added to the positive PHQ-2 screening tool because they sought treatment for depression and anxiety.

The screening process was well received by the staff during a team meeting and all providers were willing to participate. However, when it came time to implement the screening tool, three providers voiced they felt uncomfortable screening depression questions when the patient called in for an urgent care complaint such as a sinus infection. Those three providers did not continue with the screening process. A total of seven medical providers participated in the screening process since some were in the middle of the hiring process and completed their survey at the end. The providers responded 100% that they understood the purpose of the PHQ-2 screening tool and reported that the screening tool was easy to use. The providers reported 29% that they strongly agreed feeling comfortable with screening all incoming patients, 57% agreed and 14% stated they felt neutral. All the providers reported they either strongly agreed or agreed that the screening tool accurately assessed for depression. Out of the 7 providers, 86% of them would recommend it to other practices, and 14% were neutral. Only one provider strongly agreed that the PHQ-2 screening tool led to improvement in patient satisfaction, whereas the rest agreed. All providers had at least one patient who screened positive on the PHQ-2 that needed additional assessment and felt that the patient otherwise would have been missed due to having a different, unrelated chief complaint.

Feedback regarding suggested changes included: passively extracting patients by adding the custom button into their account and flagging those who have answered. This allows for a larger sample size since the practice has over 10,000 users but not all have called the practice. Another provider requested more guidance on how to engage in therapeutic dialogue with the patient if they were to screen positive on the PHQ-2 tool. A physician assistant who answered the survey voiced they would like additional psychiatric resources to manage patients without referring them.

In retrospect, a research project with a timeline of one year that included patient participation would have given us much more valuable data. It would have been interesting to understand the impact of the screening tool along with the treatment that resulted in that patient's care. However, this pilot project was significant enough to change the way the telemedicine practice is run today. The Chief Executive Officer of the company recognized the need for more mental health providers as we began extracting these patients through ordinary medical complaints. He hired two psychiatric nurse practitioners and an additional therapist, allowing the practice to manage their own mental health patients instead of referring to outside sources that may be too costly for the patient. Some challenges that were faced included providers who felt uncomfortable screening all patients for depression with the PHQ-2 tool and providers who may have forgotten to capture patients who were escalated to the mental health team. An open conversation regarding mental illness and screening could have been had with the providers who felt uncomfortable to better understand their thought process and be an important topic to address ahead of implementing this project at a different location. A few providers admitted they forgot to ask the screening questions due to time constraints and quick triaging of the patient for very urgent matters. We discussed the custom bottom could be part of the initial sign-up process versus the first time a client calls in since these users are added based on employer's request and not by use date.

Impact on Practice

This project positively impacted the practice because of the outcomes in additional mental health support as a direct result of the patient's needs. The practice extracted more mental health patients and the need for more accessibility was addressed. At least 18 patients who called into the practice for medical complaints over the course of 3 months were treated for depression and followed up closely with either the psychiatric nurse practitioners and/or therapists. This number does not include an additional 6 who called in for mental health concerns. While a seemingly small number, the impact it has on an employer-based telemedicine practice is significant. The screening process has continued, and new employees are trained on their process to ensure that more patients are discovered. A change to the process is that those who answer positively on the PHQ-2 screening are then scheduled for a 15-minute intake session with a mental health therapist who will then administer the PHQ-9. Depending on the score and severity of the patient's symptoms along with other comorbid mental health disorders, the therapist will either begin therapy sessions immediately or escalate to provide dual-provider care with the psychiatric nurse practitioner. The practice has also enlisted HR managers to utilize this screening tool in their employees and are then encouraged to refer them to the telemedicine practice for further evaluation. This unique telemedicine model breaks down the traditional barriers where the patient is not charged for additional services such as mental health treatment. It gives many freedoms to providers to initiate care when needed. This project would be best duplicated in practices that also have their own mental health team so these patients can be rapidly extracted and placed into treatment as soon as possible. Following up with these patients who are simpler since they are in the same practice and outcomes could be more easily measured.

Conclusion

Telemedicine can be a solution to medication adherence and patient outcomes in patients with a mental health diagnosis. Major depression affects over 20 million Americans at one point in their lives.

The best patient outcomes are seen when the collaborative care model is utilized to guide high intensity interventions. A simple screening tool such as the PHQ-2 used in this DNP project can positively impact patient outcomes and extract patients who may have called into the practice for a non-mental health related complaint. The cost and provider time associated with the screening tool were minimal. The impact was significant in that it created a new mental health branch within the practice and allowed patients to receive support within 24 hours of calling in. It can be easy to reproduce but certain challenges existed, including additional training, funds for additional providers, and adequate technology in other telemedicine practices. Telemedicine is a proven modality of delivering quality healthcare, especially in the mental health field.