

Improving attention deficit hyperactivity disorder diagnosis and clinician confidence working
with comorbid substance use disorders: A quality improvement project

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DNP Project Paper

Spring 2020

Abstract

Individuals with attention deficit hyperactivity disorder (ADHD) are at higher risk of developing substance use disorders (SUD). This combination puts individuals at increased risk for numerous negative psychosocial and health related consequences including premature death. Identifying individuals with both conditions is a necessary first step in treatment that starts with initial standardized screening. This project was directed at improving the screening practices prior to psychiatric referral and subsequent treatment of clients identified with comorbid ADHD and SUD in a federally qualified health center serving a large percentage of clients with SUD. Two phases were planned. First, the implementation of the Adult ADHD Self-Report Scale by primary care providers prior to referral to psychiatric assessment. Second, the development of a treatment algorithm to promote best practices for clients once identified. Prior to project implementation, the project was disrupted by the global outbreak of novel coronavirus 2019 (COVID-19). The second half of this paper addresses the lessons learned in how priorities shifted in the new healthcare landscape and how those changes reflected on the care of clients with ADHD and SUD. The paper will provide theoretical next steps for continuing the project while asserting that the deprioritization of ADHD treatment options reflects a subtle practice bias worthy of future investigation to ensure the adoption of evidence-based practices in the treatment of comorbid ADHD and SUD.

Keywords: attention deficit hyperactivity disorder, substance use disorders, screening, quality improvement

Introduction

Problem Description

Blackburn Center is a federally qualified health center (FQHC) located in Portland, Oregon and founded on the principle of radical integration of primary care, mental health care, substance use treatment, housing, and employment services under one roof. Patients served often have been impacted by homelessness and poverty, many have complicated medical and psychiatric comorbidities, and substance use disorders are common. A clinical concern is the difficulty in diagnosing and treating patients presenting with possible attention deficit hyperactivity disorder (ADHD) with a diagnosis of a comorbid substance use disorder (SUD). While multiple screens exist to help with this diagnosis, none are currently in regular use and primary care providers are referring clients for psychiatric assessment prior to completing preliminary screening.

Available Knowledge

According to the *Diagnostic and Statistical Manual of Mental Disorders* (5th ed.; DSM-V; American Psychiatric Association, 2013), ADHD is the most common childhood neurodevelopmental disorder that often persists into adulthood with an overall prevalence of adult ADHD estimated at 4.4% and lifetime prevalence for adults aged 18 to 44 to be 8.1% (National Institute of Mental Health, 2017). First conceptualized as hyperkinetic impulse disorder in 1968 and later redefined as attention deficit disorder with or without hyperactivity in the third edition of the DSM, the number of adults diagnosed with ADHD under the current DSM-5 criteria (American Psychiatric Association, 2013) continues to grow over the years.

In a study by Fairman, Peckham, and Sclar (2017), data drawn from the National Ambulatory Medical Care Survey revealed a 35% increase in adult ADHD diagnoses from 2008

to 2013. Similarly, Chang et al.'s 2019 study looked at a wider time frame and found a 43% increase in the overall annual incidence rate for Adult ADHD between 2007 and 2016. The researchers also found those diagnosed with ADHD had higher rates of emergency department visits, increased healthcare utilization, and higher rates of sexually transmitted infections and the odds of being diagnosed with a comorbid substance use disorder (SUD) were 2.5 to 3 times higher.

Comorbid ADHD with one or more SUD is a common clinical presentation. In van Emmerik-van Oortmerssen et al.'s meta-analysis that looked at 6689 subjects over 29 studies (2012), 23.1% of participants with a SUD diagnosis also met criteria for ADHD. In a study examining adult twins, study participants with ADHD had nearly a 2-fold increased risk for alcohol use disorder, and over a 2-fold risk for both illicit drug use and multiple drug use (Capusan, Bendtsen, Marteinsdottir, & Larsson, 2019). While ADHD can cause significant impairment for the general population in executive functioning, emotional regulation, decision making, and inhibition processes that can cause problems across multiple life domains (Katzman, Bilkey, Chokka, Fallu, & Klassen, 2017), comorbid ADHD and SUDs increase the risk for premature death related to suicide, unintentional injuries, and natural causes and are associated with worse substance use outcomes including earlier age of first substance use, more overdoses, and longer duration of substance use (Silbernagl et al., 2019; Sun, Kuja-Halkola, & Faraone, 2019).

While accurately diagnosing and effectively treating ADHD is an important clinical concern, clinicians must be mindful that first-line stimulant medications carry the potential to be misused or diverted. Illustrating this, Maier, Ferris, and Winstock (2018) utilized data from the annual Global Drug Survey and found significant increases between 2015 and 2017 in the

number of respondents reporting use of a non-medical prescription stimulant or illegal stimulants with 2017 rates of 21.6% and 14.7%, respectively. For clinicians mindful of the potential harm potent stimulant medications can cause, obtaining an accurate diagnosis of ADHD is crucial, but diagnosing ADHD in the presence of a comorbid substance use disorder is challenging for numerous reasons. Active substance use or the lingering effects of post-acute withdrawal symptoms can mask or mimic ADHD symptoms. Furthermore, many individuals with a history of substance use disorders have significant trauma histories, making it difficult to tease apart true ADHD symptoms versus responses to a chaotic environment. Additionally, trauma and substance use can impact memory, making it difficult for individuals to accurately recall early childhood symptoms (Bruijnen et al., 2019; Potvin, Pelletier, Grot, Hébert, Barr, & Lecomte, 2018; Zlomuzica et al., 2018).

Clinicians working in community mental health are faced with the task of teasing apart symptoms with multiple possible etiologies for patients who often present with complex backgrounds and needs. To meet this task, the Updated European Consensus Statement on the diagnosis and treatment of adult ADHD; the Royal College of Psychiatrists' practice guidelines; the International Collaboration on ADHD and Substance Abuse's consensus statement on the screening, diagnosis and treatment of SUD patients with ADHD; and the Canadian ADHD Practice Guidelines all recommend starting the diagnosis process with a screening tool like the World Health Organization's 18 question Adult ADHD Self-Report Scale (ASRS; Canadian ADHD Resource Alliance, 2018; Boilson et al., 2017; Crunelle et al., 2018; Kooij et al., 2019). van de Glind et al. (2013) tested the ASRS specifically with a population with identified SUDs and found the tool to be a sensitive screener with moderate sensitivity while Dakwar et al. (2012) found the ASRS to have adequate specificity and sensitivity, although not as high as other

screening tools. However, the tool is free to use, readily available on line, and relatively quick to administer, making it an ideal first screening tool in clinical practice.

Rationale

The Model for Improvement (Health Resources and Services Administration, 2011) was selected to guide this quality improvement project. This model starts with three questions that help shape the focus of the project. The first, “What are we trying to accomplish?” broadly encompasses the goal of improving treatment for patients with comorbid ADHD and SUD and more specifically is answered in the project aims listed below. The second and third questions, “What changes can we make that will result in improvement?” and “How will we know that a change is an improvement?” are described in the Methods section. This model recognizes that the quality improvement is an ongoing process that may require numerous cycles and updates to the intervention and the model’s Plan-Do-Study-Act cycle lays a framework that guides that process to allow for purposeful trials and changes as necessary to meet the aims of the project and respond to unexpected events. This model is ideal for clinical practice as it allows for quick feedback on how the process is working and the ability to make responsive changes quickly.

Specific Aims

This quality improvement project has two aims:

1. Integrate use of the ASRS into clinical practice before referral to the psychiatric mental health nurse practitioner (PMHNP) for 90% of patients presenting with potential ADHD by May 1, 2020.
2. Identify best practices for treatment of ADHD and comorbid substance use disorders to create a treatment algorithm with decision points to improve clinicians’ self-reported confidence in prescribing for this diagnosis by 50% by May 1, 2020.

Methods

Context

The project was set at the Blackburn Center clinic, a FQHC that includes primary medical care and behavioral health services. As a FQHC, providers at this clinic serve a very complex population and have limited time to address all of the patients' needs during an appointment. With recent staffing changes prior to the start of this project, primary care providers were frequently referring patients for psychiatric evaluation and management who may not have been formally screened prior to referral. The lack of formal screening practices places a burden on the limited availability of psychiatric appointments, creating increased wait times for clients for evaluation and follow-up. To more accurately facilitate appropriate referrals, the primary care providers requested assistance in streamlining the pre-referral practices. The clinic PMHNP requested this focus specifically on screening along with additional treatment guidelines for PMHNP follow-up of clients presenting with ADHD and SUD.

This project evolved during a time when the clinic was currently without a second psychiatric provider and there is a huge need for primary care providers to be working with the new walk-in opioid use disorder treatment disorder clinic, putting a strain on time for assessing for comorbid mental health concerns. While these circumstances lend import to the project, it also highlighted the need to identify screening practices that do not increase the workload on the already over-burdened system. One identified anticipated barrier was once patients with ADHD are screened, referred, and diagnosed, they may face limitations in potential treatment options due to insurance reimbursement policies. If the research literature indicates that patients with a SUD and ADHD be treated with a long acting stimulant, that may be a challenge for many patients on the Oregon Health Plan who have limited access to all of the treatment options.

Effective screening without effective treatment may limit health outcomes for this population. Another challenge is the inability to predict when patients with potential ADHD will present to the clinic. Collecting data relies on patients presenting to the clinicians for assessment and subsequent treatment.

Interventions

There are two components to the intervention: improving screening and diagnosis of ADHD through the use of validated measures and improving clinician comfort with managing ADHD through identification and dissemination of best practices. There were four phases to the plan-do-study-act (PDSA) model utilized in the first intervention:

1. **Plan:** The first phase involved educating the PCPs about the ASRS, discuss barriers to its use, proper scoring, and clinical utility. Norms would be established on how to document utilization of the screening tool into the electronic health record (EHR).
2. **Do:** Provide PCPs with laminated copies of the ASRS. The Patient Health Questionnaire and the Mood Disorder Questionnaire were already routinely used in this way and copies of the ASRS would be placed in exam room with these existing measures.
3. **Study:** The primary author planned to conduct weekly chart review of all patients seen by participating PCPs and record the number of visits where ADHD was addressed and the number of visits where the PCP recorded in the chart note or submitted scoring for the ASRS in previously unscored patients.
4. **Act:** For the first month, clinic PCPs would check in bi-monthly either by email or during scheduled in-person meetings to address challenges or questions they have in utilizing the ASRS. This author will provide feedback on how many patients are

being seen with ADHD and the corresponding use of the ASRS. Adjustments to workflow will be considered and further cycles ran if needed.

The first PDSA cycle will include two of the primary care providers and will expand in subsequent cycles to include more providers while making adjustments to improve the process.

The second intervention was comprised of four phases:

1. Literature review of PubMed, PsychInfo, CINAHL, and Cochrane Database to identify best practices and clinical practice guidelines for treating ADHD and for treating comorbid ADHD and SUD.
2. Identification of barriers to best practices treatment options to include in drafting treatment algorithm quick sheet.
3. First draft of best practices treatment algorithm would be sent to clinic PMHNP for review, comments, and feedback. Repeat this step as needed.
4. Present final best practices treatment algorithm quick sheet in educational meeting with PMHNP.

Participants in this project included the PMHNP and PCPs currently at Blackburn Clinic. Patients would not be directly involved in this study other than through chart review to identify if ADHD was addressed during an appointment and whether the provider utilized a diagnostic screening tool. No patient data will be collected or recorded.

Study of the Intervention

To measure the effectiveness of the intervention on increasing pre-referral screening of ADHD, data for each participating PCP would be collected weekly through retrospective chart review and maintained electronically in an excel file with no identifying data located on the

organizations server. The file would be destroyed at the end of this project. This data would be compared to the clinic baseline where no formalized screening is being utilized.

To measure changes in provider comfort in working with and treating comorbid ADHD and SUD, a short survey will be administered pre- and post-intervention. Open-ended feedback will be elicited from PCPs and the PMHNP throughout the QI project to guide changes through the PDSA cycles.

Measures

The primary outcome measured during the first intervention was a ratio of how many times the ASRS was utilized in appointments addressing ADHD in previously unscored patients compared to the total number of clients referred for assessment of ADHD. Data for each participating PCP would be collected weekly through retrospective chart review and plotted on a run chart to highlight different PDSA cycles across the project implementation phase.

For the second intervention, pre- and post-intervention survey results would be administered to the clinic PMHNP and compared to determine if there was a change in clinician confidence in treating comorbid ADHD and SUD. The questionnaire would include two likert questions:

1. Using a number from 0 to 7 with 0 being absolutely no confidence to 7 being completely and fully confident, what is your confidence level in treating comorbid ADHD and SUD?
2. Using a number from 0 to 7 with 0 being the worst possible and 7 being the best possible, what number would you rate the experience of patients seeing you for assessment and management of potential ADHD?

This latter question is adapted from Owens and Keller's (2018) research that explored the relationships between workforce confidence and the patient experience and found a positive relationship between the two. It is another way of measuring clinician confidence and a potential indirect way of measuring patient satisfaction.

Analysis

Quantitative data analysis will include ongoing counts of patients referred for ADHD assessment and those with documents preliminary screenings converted to a ration. Pre- and post-intervention survey results would be compared to determine if there was a change in clinician confidence in treating comorbid ADHD and SUD.

Ethical Considerations

The predicted ethical risks for this project were deemed to be low. There was the risk that sensitive client data would be viewed during chart review, but that identifying data would not be recorded or used during the course of the project and the only person assigned to review charts already had EHR access. IRB approval was granted on February 26, 2020.

Results

COVID-19 Disruption

The project was granted institutional review board approval on February 26, 2020, two days before the first reported case of novel coronavirus 2019 (COVID-19) in Oregon. COVID-19 was first identified in the United States a month earlier in the state of Washington (Holshue et al., 2020) and healthcare organizations were quickly mobilizing to prepare for this new threat after watching the virus spread across China where it was originally identified in December 2019. At the time of IRB approval, China had nearly 79,000 confirmed cases of COVID-19 with over 2,700 deaths. The first presumptive case of COVID-19 in Portland, Oregon was

identified on March 8, 2020 (KATU Staff, 2020) and Oregon Governor, Kate Brown, declared an official state of emergency due to COVID-19 on the same day (Office of the Governor, State of Oregon, 2020). On March 12, 2020, the governor announced the closure of all K-12 public schools and on March 13, 2020, Oregon Health & Science University announced the immediate suspension of all clinical rotations, effectively ending this project before implementation began.

At the same time, Blackburn Center was rapidly shifting services in response to a developing healthcare crisis. With this shift, the need for improving the diagnosis and treatment of ADHD in patients with comorbid SUD decreased in priority as the need for protecting patients and staff took precedence. In the week following the governor's state of emergency announcement, face-to-face appointments were modified to virtual phone appointments and by the following Friday the majority of appointments had made the switch unless there was a pressing clinical justification to see a client in person. Appointments assessing for ADHD require initial face-to-face contact for diagnosis and potential frequent clinic contact for patients trialed on stimulant medication that require subsequent urine drug screens. For this reason, shortly after the clinic PMHNP informed the primary care providers that she would no longer be prescribing stimulant medications for new clients wanting assessment for ADHD due to the new limitations. Unlike buprenorphine therapy which can be life saving for clients with opioid use disorder (Winograd, Presnall, Stringfellow, Wood, Horn, & Duello, 2019), the justification is that untreated ADHD while certainly problematic for clients is not generally a lethal condition to the same extent as untreated opioid use disorder.

While the project ended before implementation began, there is still preliminary anecdotal data to consider for future project iterations. While no formal steps were taken to implement the ASRS, the clinic moved forward independently with providing laminated copies of the screen to

PCPs. It is not known if all patients referred for psychiatric assessment of ADHD symptoms first completed an initial ASRS screen, but per PMHNP report the communication about positive screens via the EHR either through clinical documentation or through chart flags designed to communicate between providers increased significantly. This forward momentum even without a formal implementation plan in place speaks to the high level of staff buy-in for streamlining the screening and referral process for clients with suspected ADHD. Unfortunately, without a formal process in place or PDSA cycles to build upon this initial implementation, multiple issues also arose. First, there was no standardized method for reporting the result of a positive or negative screen in the EHR. Some providers were indicating a positive screen in the note title, others included the information in various locations within the chart documentation, at times the information was included in the appointment details of a booked appointment, and others times provider would flag the psychiatric provider to inform them of a positive screen. It also became apparent that simply reporting a positive screen or noting the scores for Part A and Part B of the ASRS was inadequate. While Part A is more diagnostic, Part B provides the clinician additional information about the patient's specific symptoms. Without the ability to see the responses in the full screen, the psychiatric clinician is missing valuable data from the screen to help guide further assessment.

Theoretical Next Steps

There are two next steps for moving the project forward. First, improve the documentation of the initial screen by PCPs followed by assessing the ratio of clients with documented screens to the number of clients referred for psychiatric assessment. Second, improve the diagnostic process during psychiatric assessment through the use of more targeted screening tools.

With the unstructured implementation of the ASRS it was apparent that the documentation of the screen needed to first be streamlined in the EHR before assessment of how widely the screen is being utilized. Not only do inconsistencies make communicating the information to the PMHNP challenging, the lack of a reporting process in the EHR also makes it impossible to easily track and utilize the data in meaningful ways. With the 2009 passing of the Health Information Technology for Economic and Clinical Health (HITECH) Act, multiple EHR meaningful use priorities were established including improving care coordination; improving safety, quality and efficiency while reducing health disparities; and improving population and public health (Moreno, Peikes, & Krilla, 2010). Improving documentation of the ASRS in the EHR would improve communication and care coordination between primary care and mental health providers while also being the first step in diagnosing and then treating ADHD to improve health outcomes in this high-risk group. Integration of screening tools is also one strategy to promote sustainability after the project phase is completed (Hargraves et al., 2017).

Currently, multiple behavioral forms are already loaded into the EHR including the Beck Depression Inventory, the PTSD Checklist, and Patient Health Questionnaire-9, establishing precedent when requesting the addition of the ASRS. Improving information systems and technology is identified as a key competency of the doctorally trained PMHNP (American Association of Colleges of Nursing, 2006) and, depending on the complexity of this task, this step may entail a project into and of itself. In the event that adding the ASRS proves to be a time-consuming process, an interim plan for documentation should be developed with a brief instructional component to primary care providers to ensure consistency. An easy solution would be to document scores in the assessment and plan portion of the visit note while shifting away from laminated screening forms to traditional paper screens so the document can be

scanned into the EHR. If and when the ASRS becomes loaded into the EHR, follow-up training with PCPs about the change will be necessary along with chart review to monitor the transition and address challenges. With the variability in clinician schedules, an initial training could be created through a narrated PowerPoint presentation to be emailed to PCPs and follow-up one-on-one meetings scheduled as needed. A brief multiple-choice survey would accompany the training email to assess for clinician understanding of the documentation process to ensure accurate knowledge transfer.

Once a plan for documentation is established, the next step would follow the initial implementation plan to measure the frequency of ASRS screens in clients referred to the PMHNP for assessment of potential ADHD. Through retrospective chart review, data would be collected weekly and recorded as a ratio with the numerator being the number of clients with appropriately documented screening and the denominator being the number of clients being referred for assessment of ADHD. This can be converted to a percentage to be plot using a run chart with a goal of 90% screening with documentation. Considering the ease at which the clinic already adopted the ASRS, it is possible that this step will be fairly straightforward as it appears most PCPs have been utilizing the screen appropriately. This step may be completed in one PDSA cycle if the 90% screening goal is quickly established, but prior research on mental health screening practices indicates there are a number of potential barriers to screening implementation that may arise including preexisting workflow challenges and time pressures (Beers et al., 2017; McNeely et al., 2018). Consecutive PDSA cycles can explore the clinical benefit of the current practice of administering the ASRS within the appointment versus providing clients screens in the lobby for self-administration.

The next theoretical step would be implementation of targeted screening tools for the psychiatric provider to use during diagnostic assessment. The International Consensus Statement on Screening, Diagnosis and Treatment of Substance Use Disorder Patients with Comorbid Attention Deficit/Hyperactivity Disorder recommends combining two screening tools (Crunelle et al., 2018). While the ASRS has acceptable sensitivity and specificity at detecting ADHD in individuals with SUD, the Conner's Adult ADHD Rating Scale (CAARS) is better on both measures with 94% sensitivity and 86% specificity when utilized with individuals with comorbid SUD, highlighting its utility as a second measure during a more focused psychiatric assessment. Of note, neither of these screening instruments includes a scale for detecting malingering which is an important consideration when diagnosing and treating clients with SUDS and ADHD, especially when considering utilizing higher-risk stimulant medications. There are numerous computerized continuous performance tests (CPT) that incorporate scales to detect for the likelihood of feigned symptoms. The Conners' Continuous Performance Test is one CPT that is able to identify potential feigning of symptoms across a variety of measures including inattentiveness, impulsivity, sustained attention, and vigilance (Erdodi, Pelletier, & Roth, 2018; Sharland et al., 2018).

While both the CAARS and Conners' CPT carry potential benefits when added to the diagnostic package when assessing for comorbid ADHD in clients with diagnosed SUD, it would be imperative to first explore facilitators and barriers to adoption of these tools in clinical practice. In particular, while one advantage of the ASRS is that it is free to access and use, both the CAARS and Conners' CPT require an initial investment ranging from hundreds of dollars to over \$1,200 respectively. The next step at this phase of the project would be to garner clinic interest and determine if the clinical need justifies the expenditure while working with

management to explore funding options. With the assumption that the clinic moved forward with both instruments, it would then be important to provide education around how each was used, especially with the Conners' CPT that requires learning a new software program. In addition to considerations of costs and staff education, there is also the need to think about how time to administer and score these tests impacts appointment workflow. Both can be client self-administered with the requirement for the Conners' CPT to be completed without external distraction. This lends to multiple PDSA cycles to explore utilizing the tools within appointments versus training behavioral health assistants to handout the CAARS to client to complete when they check-in for their appointment or assisting clients to an office to complete the Conners' CPT, allowing the psychiatric provider more face-to-face time necessary for a diagnostic assessment. As with the ASRS, this phase of the project would need to include protocols for how the information will be documented in the EHR along with an ongoing dialogue with the psychiatric provider to identify issues as they arrive and implement necessary changes to the workflow in subsequent PDSA cycles.

Discussion

Summary and Interpretation

When COVID-19 landed in the United States, the healthcare landscape was forced to adapt, necessitating immediate and significant changes that unfortunately ended this project before it officially moved into the implementation phase. Despite this, the clinic moved forward with implementing the ASRS into the clinical workflow, an indication that the clinic saw the importance and value in improving the care of those with cooccurring ADHD and SUD. It is also notable that with the shifting in priorities, treating ADHD decreased in priority. Individuals with ADHD experience substantial stigma across their lifespan (Lebowitz, 2016; Masuch, Bea,

Alm, Deibler, & Sobanski, 2019; Speerforck, 2019). This stigma is further increased in the presence of cooccurring SUD. Individuals with SUD frequently experience stigma from the broader culture, from friends and family, from themselves, and even from well-intentioned healthcare providers that result in preventable health disparities (Hoggart, Frayne, Saechao, Yano, & Washington, 2019; van Boekel, Brouwers, van Waeghel, & Garretsen, 2013; Yang, Wong, Grivel, & Hasin, 2017). While not overt, it is possible that this stigma is at play in the prioritizing of access to care for clients with cooccurring SUD and ADHD. Many clients presenting with ADHD have a history of stimulant use disorders and effective treatment of ADHD symptoms is linked to improvement in substance use outcomes (Konstenius, Jayaram-Lindström, Guterstam, Beck, Philips, & Franck, 2013; Levin et al., 2015; Steinhausen & Bisgaard, 2014). This is particularly relevant considering that between 2012 and 2018 overdose deaths involving cocaine nearly tripled and overdose deaths psychostimulants increased by 30% each year for a nearly 5-fold increase (Hedegaard, Miniño, & Warner, 2020). In Oregon methamphetamine and cocaine contributed to 321 deaths in 2018 compared to 158 deaths related to heroin, 129 deaths related to prescription opioids, and 76 deaths related to fentanyl (Oregon-Idaho HIDTA Program, 2019). Furthermore, these numbers show a steady and consistent increase in methamphetamine related deaths since 2012 compared opioid deaths which have remained fairly consistent since 2013.

While this project did not explore the role of stigma in diagnostic and treatment decision making for clients with comorbid SUD and ADHD, it did potentially reveal a bias that those experiencing both disorders are somehow at decreased risk compared to other conditions, and as such their treatment is deprioritized. While the next steps of this project focus on improving the

assessment process within the clinic, it is important to consider the broader picture as improved assessment may not lead to better patient outcomes if treatment is not also prioritized.

Limitations

There are significant limitations to the scope and generalizability of this project. First, due to COVID-19, the interventions were not implemented. Data on implementation is purely anecdotal and next steps for the project are theoretical. Second, this project was designed to meet the needs of Blackburn Clinic. Other organizations and clinics may have different clinical needs and challenges that may hinder applying the application of the interventions for use with their population without first identifying necessary adaptations. Utilizations of PDSA cycles allows other clinics to identify these challenges and make adjustments as needed.

Conclusions

ADHD is a significant mental health concern that is associated with substantial negative psychosocial and health outcomes across the lifespan. This is particularly evident for individuals who go on to develop SUD who experience higher rates of suicide, unintentional injuries, greater severity of substance use disorder symptoms, and worse substance use outcomes. For individuals who are self-medicating untreated ADHD with illicit stimulants, the risk for death continues to increase particularly in Oregon. In order for clients to receive important treatment aimed at treating their symptoms and reducing these risks, clients first need to be identified through adequate screening instruments and properly assessed by a psychiatric provider.

This project was ambitious in setting out to improve the initial screening process and the subsequent treatment of clients once identified with comorbid SUD and ADHD. Unfortunately, this work was not able to move forward when COVID-19 shifted healthcare priorities in an attempt to lessen perceived risks for non-critical populations. While this project was suspended

before its initiation phase, there was still valuable information this project brought forth to be used for future projects. First, assessing clients was deemed an important need by the clinic as staff moved forward with implementation of the ASRS screen even after the project was suspended. Second, while screening was considered an important and relatively easy step to take in the care of clients with comorbid ADHD and SUD, follow-up treatment was deprioritized following the outbreak of COVID-19, potentially reflecting subtle biases and stigma within the healthcare environment or a lack of knowledge related to the serious health consequences for this population.

Moving forward, the next steps should focus on the screening and assessment of individuals presenting with potential ADHD in the context of a known SUD. Identification of the right tools for primary care providers and psychiatric providers, standardization of documentation including incorporation into the EHR in a meaningful and trackable way, and ongoing education and identification of barriers to the utilization of these tools to improve clinic workflow are all important steps for creating a sustainable process.

The initial plan for the project included a second phase to create a best practice algorithm for treatment of identified ADHD. What this project revealed is that work needs to be done first to identify implicit biases and prejudices that may hinder treatment. Identifying these first is a necessary step to help ensure that a treatment algorithm will include the full range of treatment options and be adopted by those caring for this population. Currently, the treatment of ADHD in clients with SUD was deprioritized within the context of a global pandemic right at the time when many individuals were struggling the most with their mental health and recovery from substances. Once clinic and clinician barriers and facilitators to treatment are identified, future

work can focus on identifying, advocating for, and implementing evidence-based treatments for this population.

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