

DAST-10 EDUCATION WITH THE INTENT TO ADOPT AT AN
INTEGRATED HEALTH CLINIC

by

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As members of the DNP Project Committee, we certify that we have read the DNP project prepared by David Bryan Tanis, titled DAST-10 Education for the Intent to Adopt at an Integrated Health Clinic and recommend that it be accepted as fulfilling the DNP project requirement for the Degree of Doctor of Nursing Practice.

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ABSTRACT

Purpose: The purpose of this quality improvement project was to educate MHC staff on the DAST-10 screening tool in an attempt to increase their knowledge and intent to adopt the DAST-10 tool into their SBIRT protocol

Background: Illicit substance use is one of the leading causes of morbidity and mortality in the United States, resulting in over 70,000 overdose deaths in 2017 alone. The identification of substance abuse is critical to its management and improved patient outcomes. The DAST-10 is a reliable and effective screening tool for the identification of problematic drug use. The author educated staff at an integrated health clinic on the DAST-10 substance use screening tool with the goal of increasing their knowledge, perceived benefit, and intent to adopt the DAST-10 into their SBIRT protocol.

Method: The quality improvement project was designed using the Model for Improvement and PDSA cycle. Participants were recruited via email to view a live, web-based in-service educating them on the DAST-10 screening tool. Participants completed a pretest and post-test survey to measure any change in the areas of knowledge of the DAST-10, perceived benefit of the DAST-10, and intent to adopt the DAST-10 into practice.

Results: Nine staff members from the behavioral health department participated in the project. All nine participants completed the pretest, but only seven participants completed the post-test. The results showed an increase in participant knowledge and perceived benefit of the DAST-10, as well as their intent to adopt it into practice.

Conclusion: The results of the project show the implementation was successful. The project shows that knowledge, perceived benefit, and intent to adopt the DAST-10 can be increased by educating staff through a web-based educational session.

INTRODUCTION

Illicit substance use is one of the leading causes of morbidity and mortality in the United States (U.S.) (McNeely et al., 2018). Commonly abused illegal substances include opioids, benzodiazepines, methamphetamine, marijuana, cocaine, and ecstasy. According to the Centers for Disease Control and Prevention (CDC) (2017), more than 11% of individuals over the age of 12-years old use illicit drugs on any given month. The U.S. is currently in an opioid epidemic, with drug-related overdose deaths rapidly increasing and becoming the leading cause of accidental death (Schiller & Mechanic, 2019). For the year 2017 alone, there are reports of 70,237 drug-related overdose deaths (CDC, 2017). Of these, 47,600 are opioid-related, leaving other illicit substances responsible for the remaining 22,637 deaths (Scholl et al., 2019). Statistics from 2018 show that stimulants, cocaine, and benzodiazepines are responsible for 12,676, 14,666, and 10,734 overdose-related deaths, respectively (CDC, 2020). Drug use also results in an immense financial burden on the nation as a result of incarceration, lost productivity, and healthcare costs. According to a 2011 National Institute on Drug Abuse (NIDA) report, illicit drug use cost the U.S. \$193 billion annually (NIDA, 2020). Of this, \$78.5 billion is due to prescription opioids alone, an increase of \$20 billion per year in comparison to a report from six years prior (NIDA, 2020). A major part of addressing illicit drug use is to assess each person for this use, yet providers do not always have the necessary tools to assess for this public health problem. Educating providers about a valid and reliable screening tool for substance use disorder is the focus of this DNP project.

Background Knowledge

Evidence-based treatment modalities are available for managing addiction. Screening, brief intervention, and referral to treatment (SBIRT) programs are evidence-based for the identification, reduction, and prevention of problematic alcohol and drug use, abuse, and dependence (SAMHSA, 2020). In the first stage of SBIRT, providers assess the patient for problematic substance use through the use of standardized screening tools (SAMHSA, 2020). Useful screening tools are paramount to the success of SBIRT and patient outcomes. These tools can also alert the provider to the severity of the problematic substance use. Based on the severity of use, the provider can either provide a brief intervention or make a referral to treatment (Agerwala & McCance-Katz, 2012). For low-risk use, the healthcare provider can give feedback to the patient about their risky substance use (Agerwala & McCance-Katz, 2012). For substantial levels of risk or dependence, the healthcare provider can provide a referral to additional treatment services (Agerwala & McCance-Katz, 2012).

There are varieties of screening tools available to assess individuals for alcohol and substance use. Of these, the Drug Abuse Screening Test (DAST) is used to accurately identify illicit drug use in patients (Skinner, 1982). Originally adapted from the Michigan Alcohol Screening Test (MAST) in 1982, the DAST is a 28-question assessment that is sensitive for the identification of substance use other than alcohol (Skinner, 1982). The DAST has since been adapted to a 20-item and 10-item version (McCabe et al., 2006). Both of these versions have similar psychometric properties, internal consistencies, and test-retest reliability as the original 28-question format (McCabe et al., 2006). Furthermore, the DAST-10 supports rapid administration and shows to have the same ability to identify individuals in need of substance

use interventions and treatment referrals as its 28-question and 20-question predecessor (McCabe et al., 2006). These qualities make the DAST-10 an ideal choice for use in an establishment's SBIRT protocol.

Two commonly identified barriers in implementing substance abuse screening into healthcare practice are time constraints and lack of knowledge (McNeely et al., 2018). With office visits generally being brief, many providers have identified time constraints as the most significant barrier to screening for substance use (McNeely et al., 2018). The DAST-10 screening tool mitigates these time constraints as it can be administered quickly and before the patient is seen. Many providers are trained to address behavioral health conditions and tobacco use but lack proper training on the identification of alcohol and substance use. For those who have previously received formal training, many are uncomfortable with substance use screening interventions and could benefit from ongoing training (McNeely et al., 2018). This project will educate providers at the Marana Health Center (MHC) in Marana, AZ, on the DAST-10 screening tool for substance use identification to improve knowledge and solicit their intent to adopt the DAST-10 into their SBIRT protocol.

In this DNP project, knowledge is defined by the individual's familiarity with the DAST-10 along with their perceived benefit for its use. Familiarity refers to a person's comfort using the screening tool, while perceived benefit refers to the value the staff member places on the DAST-10 and how efficient they feel it will be in identifying patients with substance abuse. The intent to adopt is defined as the staff member's commitment to using the DAST-10 in practice at MHC. A peer-reviewed Likert-style survey will be used to evaluate the concepts of knowledge, perceived benefit, and intent to adopt.

Local Problem

The use of alcohol and illicit continues to be an important concern in Arizona. In 2016, the Arizona Department of Health Services (ADHS) provided reports of 790 Arizona overdose-related deaths, up 74% from reports just three years prior (Healthy Pima, 2020). These statistics prompted Governor Doug Ducey to declare Arizona's opioid crisis a public health emergency (Healthy Pima, 2020). Furthermore, drug use in Arizona surpasses national levels. In their 2010 metro brief, SAMHSA reported Arizona's illicit drug use to almost 5% higher than national averages.

Pima County, AZ, is home to the cities of Marana and Tucson and to MHC's facilities. Locally, Pima County has documented poor performance in substance use assessment and management. In their 2015 Community Health Needs Assessment, Pima County performed worse than the state of Arizona in four of the top 20 causes of death: drug-induced deaths, opiates/opioids, pharmaceutical opioids, and heroin.

Marana Health Center is currently developing SBIRT protocols. Presently, MHC utilizes the AUDIT screening tool to assess for alcohol misuse, but they do not have a validated screening tool to identify illicit substance use. Their current procedure for identifying problematic substance use to ask four questions regarding a history of substance use, 12-month history of use, periods of sobriety, and if they have participated in treatment. This facility states that the lack of time, organization, and education has prohibited them from implementing routine substance use screenings.

The author was approached MHC's director of behavioral health services to identify an appropriate drug-screening tool for use in their developing SBIRT protocol. Currently, all

Arizona Health Care Cost Containment System (AHCCCS) patients are required to complete an intake appointment and interview with a behavioral health provider prior to the establishment of behavioral health services. In this appointment, they are assessed for current stressors, past treatments, medical history, psychosocial factors, and substance abuse history. However, there is not an adequate illicit substance-screening tool. Responses to the intake assessment flag providers with needed medical, psychiatric, and supportive services. The behavioral health director outlined the importance of an effective substance abuse screening tool to alert providers to the need for addiction services, including Medication-Assisted Treatment (MAT), medical detoxification, counseling, and medical monitoring in the integrated health clinic.

A needs assessment showed education and training must be provided to enhance staff's knowledge and perceived benefit of the DAST-10 use, as well as their intent to adopt it into their SBIRT protocol. A DNP project of an in-service for healthcare workers on the DAST-10 screening tool is appropriate to aid in the development of MHC's SBIRT program. Stakeholders involved in this project included the medical director, psychiatric providers, registered nurses, behavioral health technicians, clinical preceptor, and leadership team.

Project Purpose

The purpose of this quality improvement (QI) project is to educate MHC staff on the DAST-10 screening tool and evaluate their knowledge and intent to adopt the DAST-10 tool into their SBIRT protocol (Skinner, 1982).

Project Question

Will a staff in-service on the DAST-10 screening tool increase the healthcare worker's knowledge and perceived benefit of the tool as well as their intent to adopt it into practice?

Projective Objectives/Aims

The objectives of this DNP project are to increase provider knowledge and perceived benefit of the DAST-10 screening tool as well as increase their intent to adopt it into practice at Marana Health Care. A pre-test and post-test survey will be used to measure the objectives.

Literature Synthesis

A synthesis of literature aids in the identification of current evidence expands on the knowledge that is already known, assesses strengths and weaknesses, and identifies knowledge gaps (Leite, Padilha, & Cecatti, 2019). Mostly, a literature synthesis takes the best available evidence and makes it readily available for the reader (Bonnell & Smith, 2018). By definition, a literature synthesis describes the similarities and differences in accumulated literature instead of reviewing evidence individually (Bonnell & Smith, 2018). A literature synthesis is a paramount step in a doctor of nursing practice (DNP) QI project aimed at educating healthcare workers on a substance use screening tool to supplement their developing screening, brief intervention, and referral for treatment (SBIRT) protocol in a rural outpatient integrated healthcare facility in southern Arizona.

When determining the most appropriate drug-screening tool to use in MHC's SBIRT protocol, the author first evaluated the evidence available for SBIRT. By starting with literature regarding SBIRT, the writer was able to identify screening tools commonly associated with SBIRT processes. The literature synthesis allows the author to investigate established SBIRT procedures and determine the most effective screening tool to identify problematic substance use. Ultimately, it was determined that the DAST-10 was the most relevant tool to recommend for MHC's SBIRT program (Skinner, 1982).

Evidence Collection, Analysis, and Synthesis

This literature search utilizes PubMed and CINAHL. The initial search through PubMed using the key term “SBIRT” yields 392 results. The addition of the modifiers “clinical trial,” “full text,” “human species,” and “within the last five years” reduces the selection to 32 articles. Of these, six are relevant to the DNP project. The exclusion criteria are articles that do not use the English language and ones that use minors (under 18 years old) in their sample. An additional search utilizes PubMed and the key term “DAST-10.” The modifiers “full text” and “within the last 10 years” are added, yielding 26 articles. Exclusion criteria are studies with participants under the age of 19 years old and languages other than English. Of these, five are selected for their relevance to the DNP project. A CINAHL search also utilizes the term “SBIRT” and yields 347 results. The modifiers “full text,” “academic journals,” “since 2015,” and “all adults” narrows this database to 57 articles, of which ten are appropriate for the DNP project topic. Three additional sources appear in the literature synthesis. Despite being 11 years old, the literature synthesis includes one article that is a landmark study for introducing SBIRT to healthcare sites. The United States Preventative Services Task Force (USPSTF) clinical practice guideline also appears in the synthesis, as it is level one evidence supported by the Substance Abuse Mental Health Services Administration (SAMHSA) (Moyer, 2013). A systematic review comparing screening tools effective for SBIRT programs is also included, despite being ten years old. All evidence utilized for the literature syntheses is detailed in the literature grid (Appendix F).

Correspondence with the author of the DAST-10, Dr. Harvey Skinner, not only granted permission for the author to utilize the DAST-10 in the DNP project, but provided guidelines for

proper use of the DAST-10, history of the development of the tool, recommended actions to take based on DAST-10 scores and links to literature that both utilize and support the use of the tool. The email correspondence is included in Appendix K.

Common Themes

The identification of alcohol, tobacco, and other illicit substance use, abuse, and dependence is a critical step towards improved health behaviors and outcomes (Aldridge, Linford, & Bray, 2017). When patients are identified as risky users, or meet the criteria for substance use disorder, brief interventions and referrals for treatment aid to reduce problematic behaviors (Aldridge et al., 2017; Newhouse et al., 2018). Selected studies of moderate to high-level evidence include two randomized controlled trials (Bruguera et al., 2018; Newhouse et al., 2018), two systematic reviews (Barata et al., 2017; Mdege & Lang, 2011), two cohort studies (Babor, Boca, & Bray, 2017; Madras et al., 2009), a cross-sectional study (Sahker et al., 2019), a pre-post study design (Aldridge, Linford, & Bray), and a clinical practice guideline (Moyer, 2013). There are two recurring themes identified during this synthesis of the literature. First, SBIRT is an effective intervention to reduce alcohol, tobacco, and drug use (Aldridge et al., 2017; Babor et al., 2017; Barata et al., 2017; Bruguera et al., 2018; Moyer, 2013; Newhouse et al., 2018). Second, there is a commonality in recommendations for which screening tools to utilize in SBIRT (Aldridge et al., 2017; Babor et al., 2017; Barata et al., 2017; Bruguera et al., 2018; Mdege & Lang, 2011; Madras et al., 2009; Moyer, 2013; Sahker et al., 2019).

SBIRT Effectiveness

Findings from high-quality studies conclude that SBIRT is useful in identifying and reducing alcohol, tobacco, and illicit substance use and abuse (Aldridge et al., 2017; Babor et al.,

2017; Barata et al., 2017; Bruguera et al., 2018; Moyer, 2013; Newhouse et al., 2018). The majority of research focuses on alcohol use, while few choose tobacco and drugs as their emphasis. Patients who received SBIRT interventions show a significantly decreased probability of using any alcohol at all (Aldridge et al., 2017). They drink fewer days at follow-up, report less excessive drinking days, and less conditional days of alcohol consumption (Aldridge et al., 2017). At 6-week follow-up, higher proportions of individuals that received SBIRT interventions have reduced their drinking to below-recommended levels, and a more significant amount of people attended specialized treatment programs (Barata et al., 2017; Bruguera et al., 2018). Those who receive SBIRT interventions have a three times higher likelihood of drinking below the recommended level (Bruguera et al., 2018). While high-quality evidence supporting SBIRT for drug use is limited, research upholds the modality for the reduction of its use (Barata et al., 2017; Madras et al., 2009). Higher intervention intensity also results in more substantial decreases in substance use (Aldridge et al., 2017; Babor et al., 2017; Madras et al., 2009).

Screening Tools

Screening tools utilized in SBIRT protocols should screen for alcohol, tobacco, and illicit drug use. A consensus in the literature shows that the Alcohol Use Disorders Identification Test (AUDIT) is the preferred tool to screen for alcohol use and abuse (Aldridge et al., 2017; Babor et al., 2017; Barata et al., 2017; Bruguera et al., 2018; Moyer et al., 2013). The AUDIT is a 10-item questionnaire used to identify risky and excessive drinking patterns in the primary care setting (Gache et al., 2005). The AUDIT has high validity, sensitivity, and specificity (Babor et al., 2017).

A gold standard screening tool for drug use in SBIRT is not apparent. Still, the literature does have a recurring theme of using the DAST, one of the most popular drug assessment instruments (Evren et al., 2013). The DAST is a validated and tested tool used to identify problematic drug use (Aldridge et al., 2017; Evren et al., 2013; Giguere & Potvin, 2017; Lam et al., 2015; Rockne et al., 2019). The DAST tests for problematic drug use within the previous 12 months, helping to identify a diagnosable drug use problem (Evren et al., 2013). The landmark study regarding SBIRT effectiveness references the successful use of the DAST in three of the six implementation sites (Madras et al., 2009). The DAST is available as a 28-item, 20-item, and 10-item questionnaire (Mdege & Lang, 2011). All three versions are able to take into account a variety of substances that the patient could be using (Mdege & Lang, 2011). The DAST-10 was selected, as it is the most relevant to clinical practice at MHC.

All versions of the DAST have high internal consistency with Cronbach's alpha scores of at least 0.86 (Evren et al., 2013; Giguere & Potvin, 2017; Mdege & Lang, 2011; Shirinbayan et al., 2020). All designs of the DAST have similar sensitivity and specificity, of around 85% and 95%, respectively (Mdege & Lang, 2011). The DAST-10 also has excellent internal consistency and optimal test-retest reliability (Evren et al., 2013; Giguere & Potvin, 2017; Shirinbayan et al., 2020).

The major advantage of the 10-item DAST is its rapid self-administration while still maintaining the excellent psychometric properties of its 28-item parent (Aldridge et al., 2017; Mdege & Lang, 2011). This makes the DAST-10 the optimal choice for use at an outpatient clinic. The use of the DAST-10 in research shows a significant correlation between screening test results and urinalysis, showing the great usefulness of the tool (Lam et al., 2015). It has been

shown to be highly reliable for the identification of substance use and results in patients being referred to treatment (Giguere & Potvin, 2017; Mdege & Lang, 2011; Rockne et al., 2019; Shirinbayan et al., 2020). The DAST-10 has been tested across a variety of patients, and its utility has been shown among heroin-dependent, drug-dependent, pregnant, and acute psychiatric patients, among others (Evren et al., 2013; Giguere & Potvin, 2017; Lam et al., 2015). The high internal consistency of the DAST-10 is also found to be constant across different psychiatric disorders (Giguere & Potvin, 2017).

One important component of a drug-screening tool is how to improve patient outcomes when a screening is positive for substance use. The DAST-10 assigns a degree of problems related to drug abuse with suggested actions that correlate with DAST-10 assessment scores (Skinner, 1982). A score of '0-2' correlates with no problem to low-level problem and no necessary action taken. A score of '3-5' represents a moderate level of problem related to drug abuse and warrants a brief intervention (Skinner, 1982). A score of '6-8' and '9-10' represents a substantial and severe level of drug-related problem, respectively, and warrants a referral to treatment (Skinner, 1982).

Weaknesses and Gaps

Several areas of weakness and gaps in knowledge are evident while searching the literature regarding SBIRT. A regular limitation identified in SBIRT studies is the lack of a causal relationship (Aldridge et al., 2017; Babor et al., 2017). Furthermore, studies differ in who administers the screenings and interventions. For some studies, the interventionist is a behavioral health specialist with specific training in SBIRT, while in others, untrained staff performs the

interventions (Bruguera et al., 2018). Differences in educational backgrounds and SBIRT-specific training can result in a fluctuation in results (Bruguera et al., 2018).

While there is a consensus that the AUDIT is the most appropriate for alcohol screening, there is not the same conclusion regarding drug screening. However, many studies have used, and the researchers have recommended the DAST (Aldridge et al., 2017; Babor et al., 2017; Barata et al., 2017; Bruguera et al., 2018; Mdege & Lang, 2011; Madras et al., 2009; Moyer, 2013; Sahker et al., 2019). More randomized control trials focusing on SBIRT and drug screening tools are needed. Finally, there is a need for further research regarding the long-term effects of SBIRT and options for heavy alcohol users. Current literature supports the effectiveness of SBIRT for low to moderate drinkers but does not show significant improvement for the heavy use indicative of a substance use disorder (Aldridge et al., 2017; Barata et al., 2017; Bruguera et al., 2018; Moyer et al., 2013; Newhouse et al., 2018).

Theoretical Framework

Theoretical frameworks are the foundation on which a DNP project is guided and informed (Moran, Burson, & Conrad, 2020). Frameworks explain the relationship between how and why events take place (Nilsen, 2015). They also provide organization for the reasons behind the DNP student's scholarship (Nilsen, 2015). A classic theory grounded in implementation research can describe the mechanisms of change (Dearing, 2009).

In selection of an appropriate framework to guide the DNP project, some recurring concepts were identified. The first and main concept is that of knowledge of substance use screening. This concept will be measured by the participants' familiarity with the DAST-10 (Skinner, 1982). A second concept is perceived benefit. Perceived benefit refers to the perception

of the positive effects of an action and influences a person to adopt a new behavior or process (Leung, 2013). Third, there is the concept of the intent to adopt. When innovations show an advantage over current practices they are most easily adopted (Scott, et al., 2008). All three concepts are supported by the use of Rogers' Diffusion of Innovations (DOI) theory, which guides and informs a quality improvement DNP project aimed with the intent to make a change in the illicit substance use screening protocol of a rural clinic's screening, brief intervention, and referral to treatment (SBIRT) program.

Everett Rogers published his DOI theory in 1962 in his book titled *Diffusion of Innovations*. His theory aimed to describe how a new idea or change gains initial momentum and diffuses through a population or social system (Rogers, 1983). With a proper plan, diffusion can continue in an organization with the resulting adoption of the new behavior (Dearing, 2009). For this QI project, the intent to adopt the DAST screening tool into the clinic's SBIRT program is the targeted result.

The adoption of a new behavior happens in stages among different adopter categories in an organization. There are five adopter categories (Figure 1): 1) *Innovators*, 2) *Early Adopters*, 3) *Early Majority*, 4) *Late Majority*, and 5) *Laggards* (Rogers, 1983). *Innovators* are characterized by those who are eager to be the first to try the new behavior (LaMorte, 2019). In the case of MHC, the director of behavioral health services, who approached the author with the need for this DNP project topic, is an innovator. *Early adopters* are those who are comfortable with change (LaMorte, 2019). They are often in leadership roles and typically do not need persuasion (LaMorte, 2009). Procedural guidance generally is all early adopters require to accept new behaviors. For MHC, the director of addiction services and clinical preceptor represent early

adopters. An in-service on how to conduct the DAST screening is the proposed strategy needed to gain buy-in from the early adopters. These individuals already have buy-in and are in support of the DNP project and adoption of the DAST screening tool. Both the innovators and early adopters will also serve as change agents for the DNP project (Nilsen, 2015).

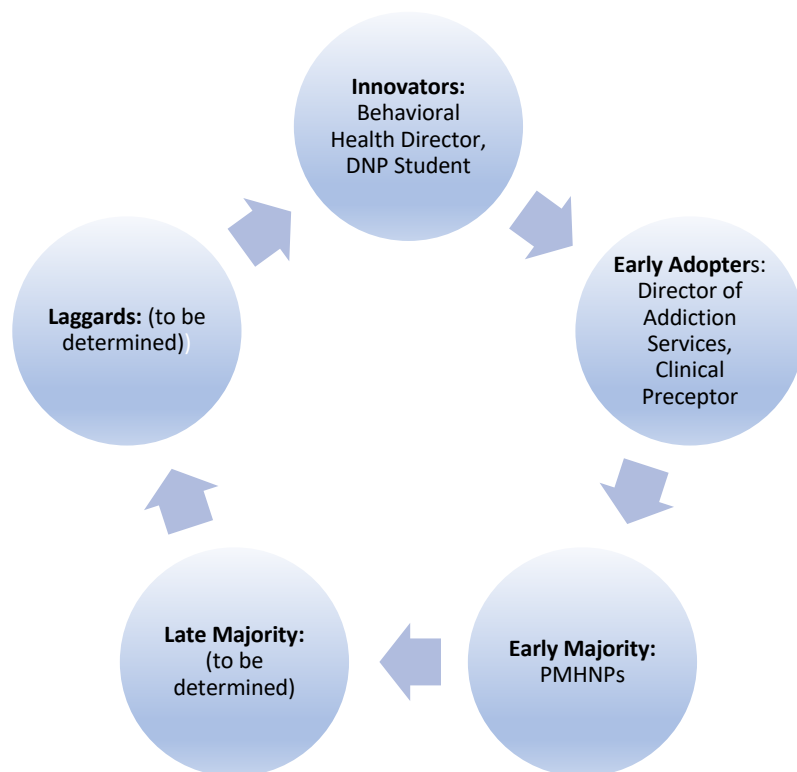
Early majority represents individuals who are typically not in leadership positions (LaMorte, 2019). At times, these individuals will require evidence in support of the innovation before committing to adopt it (LaMorte, 2019). The psychiatric mental health nurse practitioners (PMHNP) will likely show moderate resistance and fit the category of early majority. Evidence in the form of a clinical in-service will serve to attain buy-in from these individuals. Those who are more resistant to change, and generally need to see the behavior in effect by others before adopting it, are classified as *late majority* (Rogers, 1983). Diffusion of the SBIRT protocol from the PMHNP is the anticipated strategy to gain buy-in from this group. Finally, *laggards* represent those who are very skeptical of change (LaMarte, 2019). Implementation of the DAST screening tool into company policy will be the strategy to convert the laggards at MHC.

Rogers describes the five attributes of innovation as relative advantage, compatibility, complexity, observability, and trialability (Rogers, 1983). Relative advantage, compatibility, and complexity account for the majority of variance in the adoption process, while observability and trialability have less of an influence (Dearing, 2009). If the cost of adopting the DAST screening tool were higher, these two attributes would be more critical (Dearing, 2009). In the case of this DNP project, the price is minimal. Relative advantage represents the degree to which the proposed change is superior to current practices (Rogers, 1983). As a clinic specializing in addiction treatment, screening patients with a tool specific to identifying problematic illicit

substance use is superior to the current practice of simply asking the patient if they use drugs. Moreover, the addition of the DAST screening tool is compatible with the values and needs of MHC's providers as it promotes the identification of unhealthy behaviors in their patients. Furthermore, adding the DAST to the current SBIRT protocol is a low complexity task, which will aid in its adoption. Trialability and observability may not have an expansive effect on the approval of the intent to implement the DAST screening tool. However, both are easy to display if necessary, to gain buy-in.

Figure 1

MHC Adopter Categories



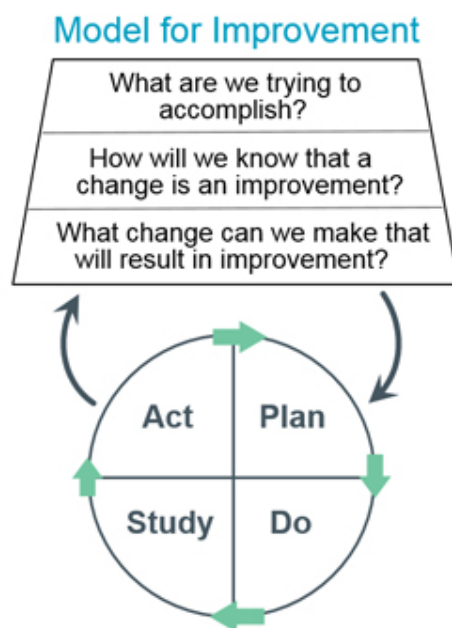
METHODS

Project Design

The DNP project utilized a pretest-posttest design. A survey was used to aid in assessing participant knowledge, perceived benefit, and intent to adopt before and after the DAST-10 remote in-service. Pretest-posttest designs are conventional in healthcare intervention studies as they allow the author to collect data points from before and after the intervention to determine the strength of its effects (Alessandri, Zuffiano, & Perinelli, 2017).

Model for Implementation

The Model for Improvement and plan-do-study-act (PDSA) cycle (Figure 2) was selected to navigate the implementation of the DNP project. The PDSA cycle is often used for quality improvement projects as it aids in making patient care safer, more efficient, timely, effective, and equitable (Donnelly & Kirk, 2015). Developed by the Associates in Process Improvement, the Model for Improvement is easy to use and is useful in accelerating improvement (IHI, 2020). The Model for Improvement consists of two parts. The first component includes three fundamental questions. These questions are: What are we trying to accomplish? How will we know that a change is an improvement? What change can we make that will result in improvement? (IHI, 2020). The second component is the PDSA cycle, which helps to determine if the implemented change results in an improvement.

Figure 2*The Model for Improvement*

Retrieved from: <http://www.ihi.org/resources/Pages/HowtoImprove/default.aspx> Langley, G. L., Moen, R., Nolan, K. M., Nolan, T. W., Norman, C. L., & Provost, L. P. (2009). *The Improvement Guide: A Practical Approach to Enhancing Organizational Performance* (2nd Ed.). San Francisco, CA: Jossey-Bass Publishers.

The first question in the Model for Improvement helps set the aim for the intervention, which should be measurable and time-specific (IHI, 2020). The population should be defined as well. For the DNP project, the aim was to enhance the provider knowledge, perceived benefit, and intent to adopt the DAST-10 screening tool. The second question aims to establish measures. Utilizing quantitative measures will help the author determine if an improvement has occurred (IHI, 2020). For the DNP project, a pretest-posttest survey was administered to measure change and assess if an improvement occurred. The final question of the Model for Improvement involves selecting the change to attain the aim (IHI, 2020). For the DNP project, the change was a remote video-recorded in-service on the benefits and procedure of conducting a DAST-10 screening on all patients completing an intake assessment.

The purpose of the 'Plan' stage of the PDSA cycle is to state the objective of the test, make a hypothesis about what results will occur, and to develop a plan to test the change (IHI, 2020). For this project, a pretest-posttest survey was designed, and the in-service video material was prepared. A plan to distribute the in-service and survey, along with a plan to collect data, was developed. It was predicted that the in-service would result in significant improvements in knowledge, perceived benefits, and intent to adopt the DAST-10 screening tool. The implementation of the in-service, distribution of the survey, and collection of data occurred during the 'Do' stage of the PDSA cycle. Any problems, such as technical difficulties and unexpected observations were documented (IHI, 2020). During the 'Study' stage, the data from the pretest-posttest was analyzed. A comparison was made to determine if the data matched the prediction of significant improvements in provider knowledge, perceived benefit, and intent to adopt the DAST-10 screening tool. Finally, for the 'Act' stage, any needed modifications were identified, and a plan was prepared for future implementation and was presented to the stakeholders.

Setting and Stakeholders

The setting for the DNP project was the main campus of Marana Health Center (MHC), located in Marana, AZ. Marana is a rural community located in southern Arizona, about 10 miles north of Tucson, AZ. Marana has a population of roughly 46,000, with a median age of 39 years old (City of Marana, 2019). Ethnicity is distributed as about 66% White, non-Hispanic, 24% Hispanic, and 10% Black or others (City of Marana, 2019). The average household income in Marana is \$84,499, significantly higher than the U.S. average of \$61,937 (U.S. Census Bureau, 2019).

Incorporated in 1957, MHC is the oldest community health center located in the United States. MHC was initially designated as a medical facility for migratory farmworkers and local Marana residents (MHC, 2020). In 1972, Marana was declared a critical health manpower shortage area and teamed up with the National Health Services Corps to provide healthcare to the community (MHC, 2020). Since then, MHC began to receive federal assistance after being designated as a Federally Qualified Health Center (FQHC) in 1998. Since receiving funding, MHC has expanded to include 16 healthcare centers (Fiske, 2019). Marana currently provides medical, behavioral health, psychiatry, dental, maternity and women's health, and physical therapy services. Marana Health Center (MHC) employs over 500 staff members and serves over 50,000 patients annually.

As an integrated health center, MHC employs both medical and psychiatric providers. The psychiatric providers that work for the behavioral health department have varying credentials, including Psychiatric Mental Health Nurse Practitioner (PMHNC), Doctor of Nursing Practice (DNP), Doctor of Medicine (MD), and Doctor of Osteopathic Medicine (DO). The ages of providers range from late 20s to early 60s, with an average age of 40 years old. There are varieties of specialties, with some providers specializing in pediatrics, geriatrics, and addiction medicine.

According to Silver et al. (2016), a quality improvement project should include a team of stakeholders that consists of a team lead, technical experts, clinical leader, improvement advisor, and executive sponsor. The team lead is the individual who is responsible for the day-to-day management of the QI project (Silver et al., 2016). For the DNP project, the author served as the team lead. Technical experts included those that have a broad understanding of the quality of

care problem (Silver et al., 2016). The behavioral health technician (BHT) staff, staff registered nurse, and psychiatric mental health nurse practitioners served this role. The clinical leader is the individual with an understanding of how the change will affect other aspects of the organization (Silver et al., 2016). For the project, the director of behavioral health services was assigned as the clinical leader. The director of MAT services, who designed the MAT program for MHC and is an expert in quality improvement (QI) methods, was designated as the improvement advisor. Executive sponsors are tasked with the resourcefulness and resiliency to take on barriers, secure resources, and possess strong leadership skills (Silver et al., 2016). The director of behavioral health services was assigned this role (in addition to the position of the clinical leader).

The use of email and in-person communication with staff assisted in gaining buy-in from the stakeholders. The identification and referral to treatment of problematic substance users support the MHC mission of providing compassionate, quality, and accessible whole-person health care to the community of Marana (MHC, 2020). Individual stakeholders gained from the implementation as well, through streamlined workflow, the knowledge gained on evidence-based substance use screening, and increased patient load for the growth of their MAT program. MHC stands to gain increased revenue from the identification of substance use and referral to internal services for therapy, MAT, medical, and behavioral health. The risks involved were limited to the lost productivity to time away from daily work to view the in-service and complete the pretest and posttest.

Planning the Intervention

Permission to conduct the DNP project was obtained from MHC's Director of Behavioral Health Services (Appendix A). From start to finish, the entire intervention took approximately 30 minutes to complete. The education portion took approximately 15 minutes and occurred on Wednesday, September 16, 2020, at 11:30 am. MHC behavioral health staff had the 11 o'clock hour reserved for a weekly meeting and the DNP project intervention took place during this weekly meeting. The behavioral health director sent all potential candidates a recruitment email the day before the event that detailed the purpose of the DNP project, what to expect during the event and the voluntary nature of the project, including a disclosure form (Appendix C & B). Candidates were asked to reply to behavioral health director with their intent to participate in the project. Participants received a link to the in-service directly from the behavioral health director on the morning of September 16. The in-service was conducted remotely using WebEx, an online videoconferencing platform developed for remote meetings and communication for healthcare and educators (WebEx, 2020). WebEx accounts are free, and MHC staff already have active accounts, although an account is not required to be a participant in a WebEx session.

On September 16 at 10:00 am, the behavioral health director sent all participants an email with a link to the WebEx presentation, the pretest, and the posttest (Appendix D). They received instructions to complete the pretest at the beginning WebEx in-service. The presentation included a PowerPoint presentation outlining the benefits and administration procedure of the DAST-10 screening tool (Appendix E). A script for the presentation is provided in Appendix J, and a copy of the DAST-10 is available for viewing in Appendix F.

DAST-10

The DAST-10 is a 10-item tool that can either be self-administered by the patient or can be administered by a healthcare worker (Skinner, 1982). A licensed provider does not need to administer the tool (Skinner, 1982). Patients answer questions regarding their substance use over the previous 12 months, with questions covering topics such as if substances were used for purposes other than medical reasons, inability to stop using substances, and any illegal behaviors, among others (Skinner, 1982). Points are assigned to the patient's responses to the questions and a degree of substance use problem is given based on their total score (Skinner, 1982). An interpretation chart is provided with the DAST-10 with recommended interventions based upon a corresponding score. A score of '0-2' suggests no to minimal problem and does not recommend an intervention (Skinner, 1982). Scores of '3-5' represent a moderate problem with brief intervention as the recommendation (Skinner, 1982). Scores above '5' are indicative of a higher-level problem, and referral to substance abuse treatment is recommended (Skinner, 1982). Suggested ASAM levels of care are also provided for each problem-level category (Skinner, 1982). The DAST-10 is stable and accurate with a high internal consistency (Evren et al., 2013). It also has a high correlation to its 28-question counterpart, meaning an accurate indication of substance abuse can be attained in a shorter amount of time (Skinner, 1982).

At the end of the presentation, the participants were instructed to return to their email to access the post-test link. Two DNP project co-chairs evaluated the pretest and posttest questions, as well as the literature supporting their use. These content experts agreed that the questions utilized were appropriate and added value to the analysis of the survey. The peer-reviewed pretest and post-test consisted of questions with topics that assessed the project's concepts of

knowledge of the drug-screening tool, perceived benefit, and intent to adopt. Survey items were adapted from theoretically derived questions that support the adoption of health applications that are driven by Rogers' DOI theory (Atkinson, 2007). These survey questions were related to Rogers' attributes of relative advantage (perceived benefits), complexity/simplicity and compatibility (intent to adopt), and trialability (knowledge) (Atkinson, 2007). Furthermore, these questions were directly related to the time and knowledge barriers to drug screening implementation, which the education component of the project aimed to mitigate (McNeely et al., 2018). Both the pretest and post-test surveys were created using Google Forms, a free online survey platform (Google, 2020). Both surveys were identical and utilized Likert scales for all questions (Appendix D).

Participants and Recruitment

Convenience sampling was used to recruit participants. The anticipated sample size was 10 participants out of a pool of approximately 20. It was estimated that there would be around 50% participation due to scheduling conflicts, providers being with patients, and staff having the day off. The author nearly met this goal with nine participants. There was a last-minute change in the implementation date and time, which likely resulted in a lower number of participants.

Recruitment occurred through emails to potential candidates (Appendix C). Inclusion criteria for participants included being an employee of MHC, currently working in the behavioral health department, over 18 years of age, ability to read English, and provided consent. Exclusion criteria included any employee that is also a patient in the behavioral health department, as not to require human subjects' approval from the Institutional Review Board (IRB). Any participant that had received formal DAST-10 training in the previous six months was also excluded from

the project. The exclusion criteria were outlined in the disclosure form, and it was understood that if a patient agreed and chose to participate that they did not meet any exclusion criteria.

Consent and Ethical Considerations

The DNP project was conducted with strict adherence to policies developed by The University of Arizona for informed consent, autonomy, and privacy. All participants were presented with a voluntary consent and disclosure form (Appendix B) prior to their participation in the DNP project. All communication emails included the consent form, and consent was implied when they continued in the intervention, as stated in the disclosure. To respect autonomy, participation was voluntary, and participants were able to remove themselves from the project at any point and for any reason. All participants remained in the intervention, although two of the participants did not complete the posttest survey. To maintain privacy, all personally identifiable information was removed. There were no participant names attached to either the pretest or posttest. Nobody, including the author, had access to personally identifiable survey results from participants. The determination of human subjects was obtained from the University of Arizona Institutional Review Board (IRB) prior to any implementation.

Timeline

A timeline guided the plan-do-study-act (PDSA) stages of the DNP project (Appendix G). The author anticipated the PDSA cycle to be completed in 6 weeks. On September 4, 2020, the author received notification that a human subjects review was not required. On September 5, 2020, the author contacted the behavioral health director and sent him the recruitment email along with the links to the pretest and posttest. On September 15, 2020, the behavioral health director emailed the behavioral health leaders that were part of the weekly leadership meeting

with the link to the WebEx meeting and the pretest and posttest. On September 16, 2020, the project was implemented, and all data was received. Data analysis was completed on October 19, 2020, and results were sent to the behavioral health director on October 20, 2020.

Data Collection

The DNP project utilized Google Forms to create a Likert-style survey to assess participant's knowledge of the DAST-10 and their intent to adopt it into practice (Google, 2020a). There were six questions on the survey. Three survey questions were related to participant's familiarity with the DAST-10, two were related to their perceived benefit of the DAST-10, and one was related to their intent to adopt it into practice at MHC.

At the beginning of the WebEx in-service, an email link to the survey was sent to the participants. Immediately following the completion of the pretest, participants viewed the WebEx in-service. The posttest survey link was distributed directly after the WebEx in-service. Pretest and posttest surveys were not linked.

Data Analysis

Data from the survey were extracted into Google Sheets and were treated as ordinal data (Google, 2020b). Descriptive and inferential statistics were calculated using Google Sheets. Frequencies of score responses were calculated for all survey questions. Bar charts were utilized to compare the change in score frequencies. Mean, median, minimum and maximum values and *p*-scores were calculated and displayed in a table. A *p*-score of <0.1 was selected for the data analysis. Change in mean and median scores were displayed in bar charts. The Mann-Whitney Rank Sum Test was used to provide *p*-values to test for statistically significant change. The socscistatistics.com online calculator was used to calculate the *p*-values (Social Science

Statistics, 2018). All data is securely stored in a password-protected Google Sheets file on a password-protected computer.

RESULTS

The DNP quality improvement (QI) project, *DAST-10 Education for the Intent to Adopt at an Integrated Health Clinic*, was implemented using the WebEx platform at 11:00 am on 9/16/2020. Participants in MHC's behavioral health leadership positions joined the presentation and participated in the pretest and posttest survey. There were nine total participants, including eight behavioral health managers from eight respective MHC sites and one MHC behavioral health director. Both male and female participants were present in the implementation. All participants met the inclusion criteria of being an employee of MHC and working in the behavioral health department. None of the participants had been formally trained on using the DAST-10 in the previous six months. Detailed demographic information was not collected to maintain the project's anonymous nature, particularly with such a small sample size.

Findings

Pretest and posttest data are presented utilizing frequencies, mean scores with standard deviation, median scores with minimum and maximum values, and *p*-values calculated using the Mann-Whitney rank sum test. A table listing all measured values is included in Table 1 below. Pretest and post-test mean and median results are included in Figure 1 and Figure 2 below.

Familiarity

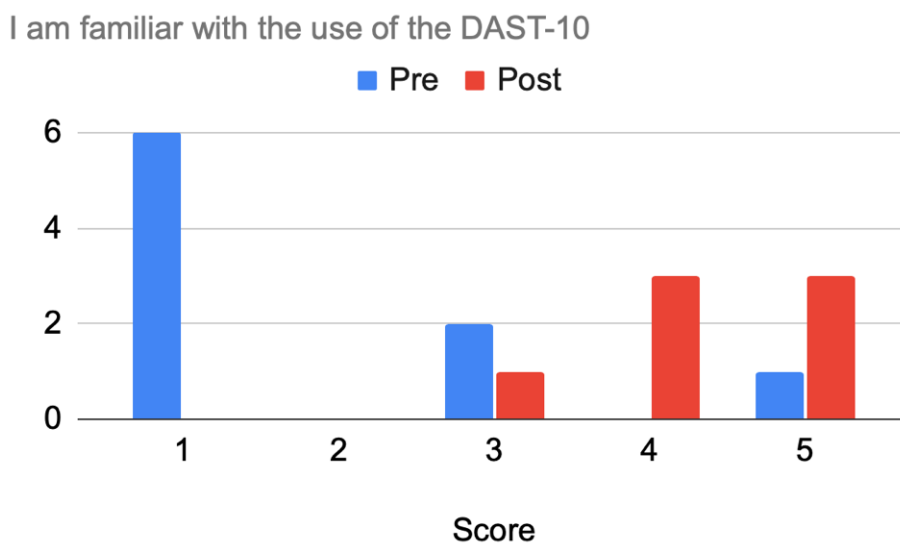
The first aim of the DNP project was to increase MHC staff members' knowledge of the DAST-10 screening tool. The three pretest and posttest statements measured knowledge: "*I am Familiar with the Use of the DAST-10, I am familiar with the benefits of the DAST-10, and I*

would better understand the DAST-10 if I were formally educated on its use.” All participants selected numbers on a Likert-style scale corresponding to their agreement with the three familiarity statements. The scores on the scale ranged from ‘1’ (strongly disagree) to ‘5’ (strongly agree).

The first statement assessed the participant’s current familiarity with the DAST-10 screening tool. Pretest frequencies include six ratings of ‘1,’ two ratings of ‘3,’ and one rating of ‘5.’ Post-test frequencies include one rating of ‘3,’ three ratings of ‘4,’ and three ratings of ‘5.’ The pretest mean was 1.89, with a standard deviation of 1.45. There was a median of ‘1’ with a minimum and maximum of ‘1’ and ‘5,’ respectively. The posttest mean score was 4.29, with a standard deviation of 0.76. The post-test median score was ‘4,’ with a minimum of ‘3’ and maximum of ‘5.’ A *p*-value of $p=0.010$ shows the change was statistically significant.

Figure 3

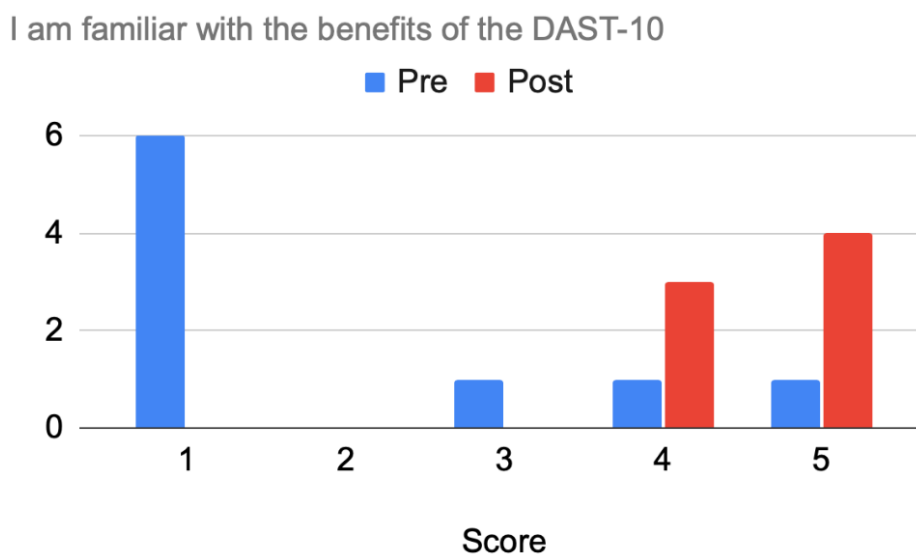
Frequencies for Familiarity with DAST-10



The second familiarity statement assessed participant's familiarity with the benefits of the DAST-10. Pretest frequencies included six scores of '1,' one score of '3,' one score of '4,' and one score of '5.' Post-test frequencies include three ratings of '4' and four ratings of '5.' The pretest mean score was 2.00, with a standard deviation of 1.58. There was a median score of '1' with a minimum and maximum score of '1' and '5,' respectively. The post-test mean score was 4.57, with a standard deviation of 0.53. The median score was '5,' with a minimum of '4' and maximum of '5.' A p -value of 0.010 shows that the change was statistically significant.

Figure 4

Frequencies for Familiarity with Benefits of the DAST-10

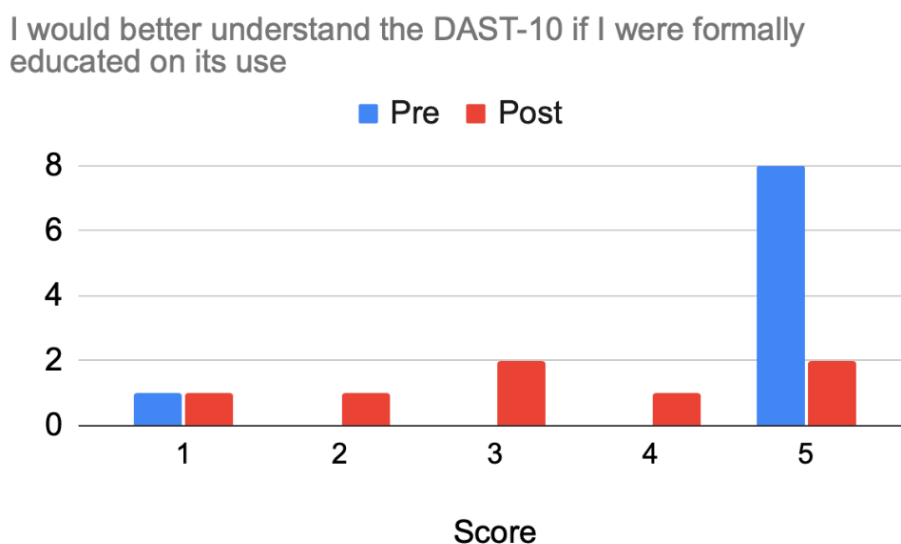


The third statement assesses if the participant would better understand the DAST-10 if they received formal education. Pretest frequencies include one score of '1' (strongly disagree) and eight scores of '5' (strongly agree). Post-test frequencies include one score of '1,' one score of '2,' two scores of '3,' one score of '4,' and two scores of '5.' The pretest mean was 4.56, with a standard deviation of 1.33. The median score was '5,' with a minimum of 1 and maximum of

‘5.’ The post-test median score was 3.29, with a standard deviation of 1.50. The median score was ‘3,’ with a minimum of ‘1’ and maximum of ‘5.’ With a p -value of 0.080, this result was statistically significant.

Figure 5

Frequencies of the Need for Education to Understand the DAST-10



Perceived Benefit

The DNP project’s second aim was to increase the participants’ perceived benefit of the DAST-10. Perceived benefit was measured by collecting pretest and posttest Likert-style scores to the two statements: “*One benefit of the DAST-10 is the amount of time it takes to administer and patients should be screened with the DAST-10 as part of their intake process.*”

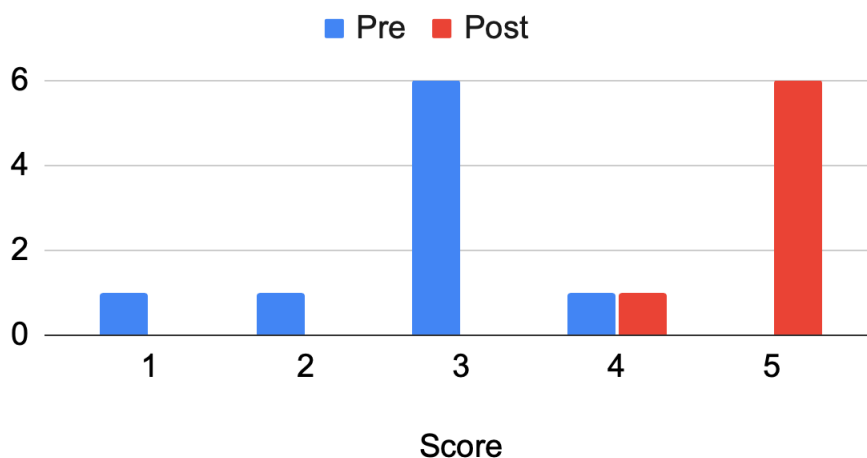
The first perceived benefits statement assessed responses related to the benefit of the amount of time it takes to administer the DAST-10. Pretest frequencies include one response of ‘1,’ one response of ‘2,’ six responses of ‘3,’ and one response of ‘4.’ Post-test frequencies include one response of ‘4’ and six responses of ‘5.’ The pretest mean score was 2.78, with a

standard deviation of 0.83. The median score was ‘3,’ with a minimum of ‘1’ and maximum of ‘5.’ The post-test mean score was 4.86, with a standard deviation of 0.38. The median score was ‘5’ with a minimum of ‘4’ and maximum of ‘5.’ The p -value was $p=0.001$, a statistically significant result.

Figure 6

Frequencies of the Administration Time Being a Benefit of the DAST-10

One benefit of the DAST-10 is the amount of time it takes to administer

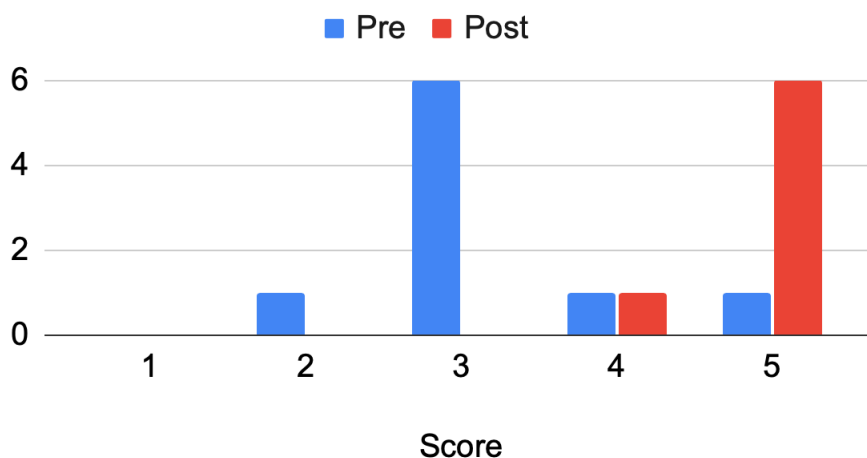


The second perceived benefit statement concerns whether the participants believe patients should be screened with the DAST-10 as part of their intake process. Pretest frequencies include one response of ‘2,’ six responses of ‘3,’ one response of ‘4,’ and one response of ‘5.’ Post-test frequencies include one response of ‘4’ and six responses of ‘5.’ The pretest mean was 3.22, with a standard deviation of 0.83. The median score was ‘3,’ with a minimum of ‘2’ and maximum of ‘5.’ The post-test mean score was 4.71, with a standard deviation of 0.49. The post-test median score was ‘5,’ with a minimum of ‘4’ and maximum of ‘5.’ A p -value of $p=0.007$ is statistically significant.

Figure 7

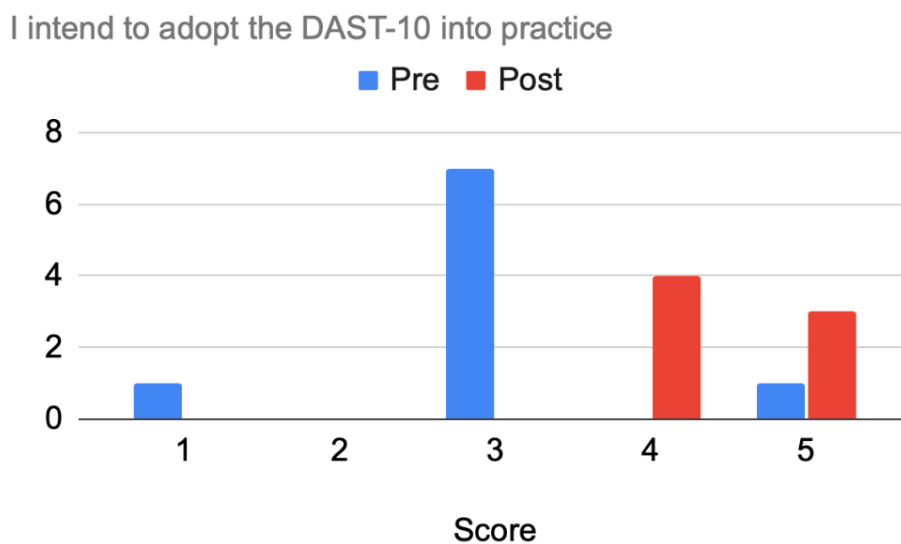
Frequencies of Statement that Patients Should be Screened with the DAST-10

Patients should be screened with the DAST-10 as part of their intake process



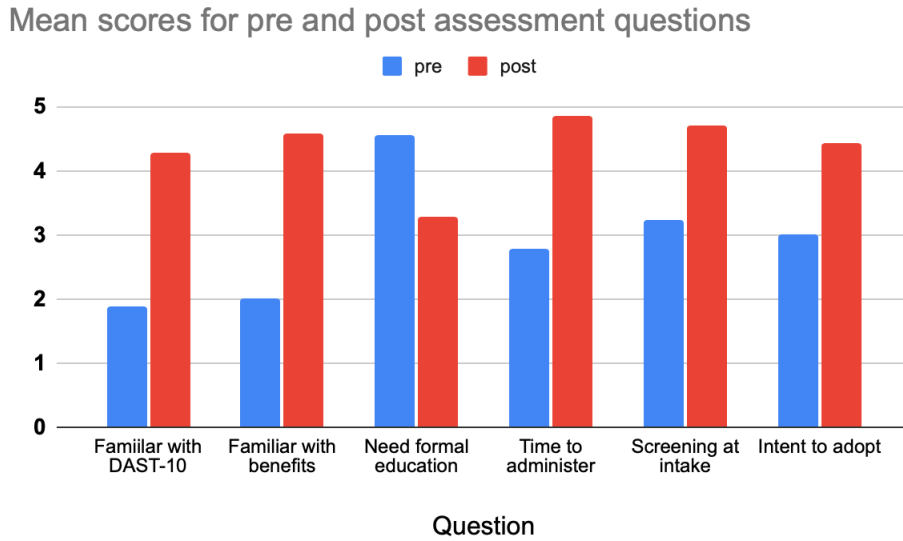
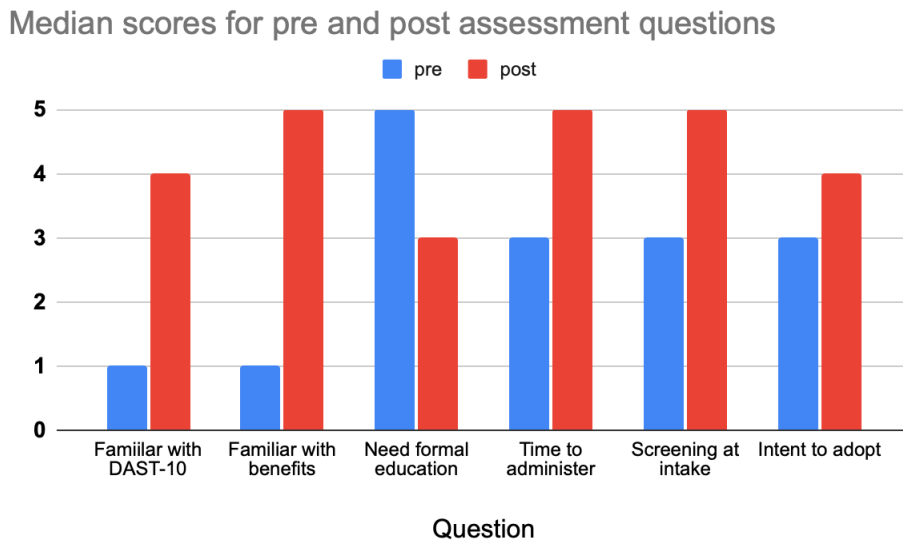
Intent to Adopt

The third aim of the DNP project was to increase the participants' intent to adopt the DAST-10 into their practice. Intent to adopt was measured by responses to the straightforward statement; *"I intend to adopt the DAST-10 into practice."* Pretest frequencies include one response of '1,' seven responses of '4,' and one response of '5.' Post-test frequencies include four responses of '4' and three responses of '5.' The pretest mean score was 3.00, with a standard deviation of 1.00. The median score was '3,' with a minimum of '1' and maximum of '5.' The post-test mean score was 4.43, with a standard deviation of 0.53. The median score after the intervention was '4,' with a minimum of '4' and maximum of '5.' The p -value was $p=0.007$, which is statistically significant.

Figure 8*Frequencies of the Intent to Use the DAST-10 in Practice***Table 1***Descriptive Statistics for Pre and Posttest*

| | Pre (n=9) | | Post (n=7) | | p-val* |
|---|-------------|-------------------|-------------|-------------------|--------|
| | Mean (sd) | Median (min. max) | Mean (sd) | Median (min. max) | |
| I am familiar with the use of the DAST-10. | 1.89 (1.45) | 1 (1, 5) | 4.29 (0.76) | 4 (3, 5) | 0.010 |
| I am familiar with the benefits of the DAST-10. | 2.00 (1.58) | 1 (1, 5) | 4.57 (0.53) | 5 (4, 5) | 0.010 |
| I would better understand the DAST-10 if I were formally educated on its use? | 4.56 (1.33) | 5 (1, 5) | 3.29 (1.50) | 3 (1, 5) | 0.080 |
| One benefit of the DAST-10 is the amount of time it takes to administer? | 2.78 (0.83) | 3 (1, 4) | 4.86 (0.38) | 5 (4, 5) | 0.001 |
| Patients should be screened with the DAST-10 as part of their intake process? | 3.22 (0.83) | 3 (2, 5) | 4.71 (0.49) | 5 (4, 5) | 0.007 |
| I intent to use the DAST-10 screening tool at MHC | 3.00 (1.00) | 3 (1, 5) | 4.43 (0.53) | 4 (4, 5) | 0.007 |

*Mann Whitney rank sum test p-value comparing distributions of responses

Figure 9*Mean Scores for Pre- and Post-Assessment Questions***Figure 10***Median Scores for Pre- and Post-Assessment Questions*

DISCUSSION

The purpose of the DNP project was to increase provider knowledge, perceived benefit, and intent to adopt the DAST-10 screening tool. A pretest/posttest format was utilized with a web-based educational in-service regarding the DAST-10. Overall, the DNP project was a success, and the anticipated outcomes were achieved. Results show an increase in provider knowledge, perceived benefit, and intent to adopt the DAST-10. Note that there is a decrease from pretest to posttest score for the statement regarding the need for formal education to increase understanding of the DAST-10. This is the only statement included in the surveys where a decreased score represents an improved outcome.

Median scores were increased in the first two statements concerning participants' familiarity with the DAST-10 and its benefits. A bar chart of pretest and posttest score frequencies, shown in Figures 5 and 6 below, shows a shift to the right, indicating an increase in participant knowledge of the DSAT-10 and its benefits. These results had p -values less than 0.01, meaning the changes were statistically significant. Score frequencies shifted towards "strongly disagree" for the statement related to the participants' belief that formal DAST-10 education would help them better understand the tool. As depicted in Figure 7, a shift to the left indicates that participants felt less of a need for formal education to understand the DAST-10 after the intervention. With a p -value of 0.080, this outcome was statistically significant.

Regarding the two statements corresponding to the perceived benefit, both score frequencies moved towards "strongly agree." As illustrated by Figures 8 and 9 below, a shift to the right indicates an increase in the participants' perceived benefit of the drug abuse screening

tool. *P*-values of 0.001 and 0.007, respectively, to statement four and statement five, are statistically significant for change.

The final statement, which assesses the participants' intent to adopt the DAST-10 into practice, had an improvement in score frequencies. The bar chart in Figure 10 shows a shift to the right, indicating an increase in their intent to adopt the DAST-10 into practice at MHC.

The outcomes of the DNP project support the literature regarding substance use screening. A lack of specific education regarding substance use screening tools leads to their limited use. Whether a direct cause or merely a correlation, the education provided increased the participants' intent to use the DAST-10 in their practice. According to the literature, time constraints are among the most significant barriers to implementing a drug abuse screening tool. The DNP project emphasizes the brief administration time of the DAST-10 and the information that the screening can be self-administered. There was a dramatic increase in the perceived benefit of the DAST-10, specifically related to the benefit of its rapid administration time.

The author intended to send a recruitment email two weeks before the intervention to all MHC behavioral health staff. The objective in providing a two-week notice and including all behavioral staff members was to get a large number of participants with varying job skills, experience, and demographics. The day before the implementation, the behavioral health director contacted the author and asked him to implement the next day instead. Due to this last-minute change, ample notice was not given to aid in the recruitment of participants, and only behavioral health leaders were included in the project. This unanticipated change likely led to a smaller sample size.

COVID-19 Pandemic

The COVID-19 pandemic began in the Spring of 2020, towards the beginning stages of the DNP project implementation. The DNP project was initially planned to be an in-person in-service with provided refreshments. The pretest and posttest were designed to be in paper format. The author anticipated that 100% of the participants would have completed both the pretest and posttest had the implementation been in person with paper surveys. Due to the pandemic and social distancing, the project was converted into a web-based presentation with a web-based survey. There was no feasible way to remind participants to complete the posttest survey as the videoconferencing ended after the discussion and before the posttest. While the COVID-19 pandemic posed challenges, the DNP project was still a success.

Strengths

There were a number of strengths in the DNP project. Results on all questions and outcomes were statistically significant. The author anticipated some resistance from the participants due to the time investment required to participate. However, this was not the experience the author received. Participants were very engaged in the implementation. Feedback was overall positive. One participant offered a discussion about how she used the DAST-10 at a previous job, and hundreds of cases of substance abuse were identified that otherwise would have gone unrecognized.

The DNP project resulted in significant changes in participant's perception of both the DAST-10 and substance abuse screening in general. While the DNP project was intended only to influence substance use screening, it brought awareness of the need to continually evaluate MHC programs and protocols to the leadership team. The DNP project helped demonstrate the benefits

of research, evidence-based practice, and open communication about protocol changes and improving patient outcomes. The presentation was very well received. Directors from several of the MHC clinics approached the author asking him to present to their staff on the use and benefit of the DAST-10.

Limitations

There were several notable limitations to the DNP project. After the project's redesign due to COVID, the intervention was intended to include many more participants. The behavioral health director's last-minute decision to implement during MHC's monthly supervisor meeting limited the number of participants. Therefore, the sample size was small. Furthermore, not being present for the post-test did not allow the author to encourage everyone to submit their surveys. With a limited number of participants to begin with, the data's strength would have been increased with 100% participation on the posttest. Finally, the author cannot rule out a potential bias from the participants that may have intentionally selected their responses on both surveys to help the author depict a "successful" DNP project.

Implications

The DNP project has implications in nursing in the domains of practice, education, policy, and research. Current substance use screening practices at Marana Healthcare Center (MHC) should be changed. Evidence supports the use of a formal substance abuse screening tool. The DAST-10 is well researched as a useful and reliable screening tool for illicit drug use, and the DNP project shows that participants find a benefit to it and plan to adopt it into practice. However, it would be advisable to investigate on a larger scale, which touches on the domain of research. The author proposes that the next step of the DNP project is to conduct the

implementation company-wide and to include primary medical care staff in the investigation. This will result in a larger sample size, broader demographics, and field concerns from sites throughout the MHC community. As evidenced by the pretest survey, there is a lack of knowledge of the DAST-10 (and likely other substance abuse screening). More emphasis should be placed on addiction screening and treatment education. Doctoral prepared nurse leaders should advocate for policy to include advanced addiction education in their curriculum.

Dissemination

The quality improvement (QI) project results were shared with the behavioral health director, who then shared the results with the leaders from eight of the MHC behavioral health sites. The information that was disseminated included the pretest and posttest survey results, the data spreadsheets and charts, and the author's data analysis and interpretation. The author also shared the project results with the DNP committee in his final DNP defense.

DNP Essentials Addressed

The Essentials of Doctoral Educations for Advanced Nursing Practice (DNP Essentials) were designed to outline the required curricular components that scholarly programs must meet to offer the Doctor of Nursing Practice degree (AACN, 2006). The DNP project, *DAST-10 Education for the Intent to Adopt at an Integrated Health Clinic*, successfully meets DNP Essentials II, III, and VII.

DNP Essential II, *Organizational and Systems Leadership for Quality Improvement and Systems Thinking*, prepares the advanced practice nurse to improve patient and healthcare outcomes by working within organizations to create and assess healthcare approaches that meet patient needs (AACN, 2006). The author worked with MHC to assess their needs, worked with

the behavioral health director to identify a meaningful DNP project topic, and worked as a change leader with MHC staff for the DAST-10 implementation.

DNP Essential III, *Clinical Scholarship and Analytical Methods for Evidence-Based Practice*, prepares advanced practice nurses to appraise the literature for best available practice (AACN, 2006). It also prepares the nurse leader to design and implement QI projects and evaluate outcomes (AACN, 2006). This DNP essential was met by appraising the literature for drug abuse screening tools, barriers to implementing a drug abuse screening tool, and best practices to implement the Model for Improvement. DNP Essential III was also met by the implementation of the intervention and the evaluation of the project outcomes.

DNP Essential VII, *Clinical Prevention and Population Health for Improving the Nation's Health*, prepares the DNP to promote health and reduce risk and illness for individuals and families (AACN, 2006). This essential was met by researching substance abuse data locally and nationally and applying evidence-based interventions to identify risky and problematic drug use.

Conclusions

Substance abuse continues to be a significant contributor to morbidity and mortality in the U.S. The identification of substance abuse is critical to its treatment, promotion, and improved patient outcomes. The behavioral health director of MHC approached the author with the proposed DNP project of identifying a formal substance abuse screening tool to utilize with behavioral health patients. A search of the literature shows that the DAST-10 has strong evidence for reliability and validity in detecting problematic substance use. The author conducted a pretest/posttest project to educate staff at MHC on the DAST-10 and its benefits to

increase participant knowledge, perceived benefit, and intent to adopt the DAST-10 into practice. A web-based in-service was held to educate the behavioral health director and eight behavioral health leaders on the DAST-10. Compared to the pretest survey questions, the posttest shows increased knowledge on the DAST-10, an increase in the perceived benefit of the DAST-10, and an increase in the intent to adopt it into practice.

Plan for Sustainability

Sustainability, a health service's ability to deliver care over time and to future generations, is a crucial component of a DNP project (Mortimer et al., 2018). Without a plan for sustainability, the DNP project could have difficulty affecting MHC's SBIRT protocol or outcomes for patients with a substance use disorder. MHC has decided to adopt the DAST-10 screening tool as part of their intake process for behavioral health patients. All patients will be screened with the DAST-10 at their intake appointment, and all AHCCCS patients will be screened annually with the DAST-10. They stated that they found value and benefit in its addition to their SBIRT protocol.

Plan for Dissemination

In an effort to enhance patient outcomes and MAT participation, MHC is interested in trialing the DAST-10 in their primary care patient intakes, as well. A University of Arizona student with a tentative graduation date of December 2021 will implement a second PDSA cycle to implement the DAST-10 in MHC's primary care patient population and will determine if the number of patients referred to MHC's behavioral health services for addiction and comorbid psychiatric conditions increase following this implementation.

APPENDIX A:
MHC HEALTHCARE SITE APPROVAL LETTER



July 16, 2020

University of Arizona Institutional Review Board
c/o Office of Human Subjects
1618 E. Helen Street
Tucson, AZ 85721

To whom it may concern:

Please note that Mr. David B. Tanis, a University of Arizona Doctor of Nursing Practice student, has the permission of Marana Health Center Main Clinic to conduct his quality improvement project, "DAST-10 Education for the Intent to Adopt at an Integrated Health Clinic".

Mr. Tanis will conduct a brief educational in-service via WebEx with the topic of the DAST-10 substance use screening tool. He will also conduct a pretest and posttest survey via Google Forms. There will be no identifiable information attached to either of the surveys. Mr. Tanis's activities will be completed by December 31st, 2020.

Mr. Tanis has agreed to provide my office a copy of the University of Arizona Determination of Human Subjects letter before he recruits participants and begins his project. He will also provide results of the project to providers and administration at the completion of the project.

If there are any questions, please contact my office at (520) 682-1091 Ext 7142.

Sincerely,

Jon Reardon, MBA, MSW, LCSW
Chief of Clinical Behavioral Health
MHC Healthcare

Behavioral Health Services
13395 N. Marana Main Street, Bldg B | Marana, AZ 85653

www.mhchealthcare.org

APPENDIX B:
CONSENT DOCUMENT (DISCLOSURE AND CONSENT FORM)

Voluntary Disclosure and Consent

Please read carefully

The purpose of this quality improvement project is to introduce the Drug Abuse Screening Tool-10 (DAST-10) to the staff of Marana Health Care and evaluate the impact on staff's knowledge, perceived benefit, and intent to adopt it into practice. The goal of this project is for staff to accept the DAST-10 and adopt it into MHC's Screening, Brief Intervention, and Referral to Treatment (SBIRT) program.

Should you choose to participate, you will be asked to:

1. Participate in a one-day (20 minute) WebEx-based In-service on the DAST-10.
2. Take a pre-survey and post-survey about your knowledge, perceived benefit, and intent to adopt the DAST-10.

It will take approximately five minutes to complete both the pre- and post-survey. Responses to both surveys are anonymous. There will be no identifiable information collected from participants. You will receive no immediate benefit from your participation. There are no foreseeable risks associated with your participation.

If you choose to participate in this project, please be aware that participation is voluntary, and the refusal to participate will result in no penalty. You may withdraw yourself from the project at any time. When completing the surveys, you may choose to skip any questions that you choose not to answer.

By choosing to participate in this project, you are giving consent.

For questions or concerns regarding this project, you may contact:

David Tanis, RN
DNP-PMHNP Student, University of Arizona
Phone: 480-232-1154
Email: dtanis@email.arizona.edu

APPENDIX C:
RECRUITMENT MATERIAL (RECRUITMENT EMAIL)

Dear MHC Employee,

My name is David Tanis, a student at the University of Arizona and clinical resident of Marana Health Center. I am studying to become a doctoral prepared psychiatric mental health nurse practitioner. I am writing this email to extend an offer for you to volunteer to participate in my quality improvement study for my Doctor of Nursing Practice (DNP) project. The project titled, "DAST-10 Education for the Intent to Adopt at an Integrative Health Clinic", is designed to introduce MHC staff to the Drug Abuse Screening Tool-10 (DAST-10) with the intent for MHC to adopt it into its Screening, Brief Intervention, and Referral to Treatment (SBIRT) protocol. Participation will involve a pre-test, WebEx-based in-service, and post-test. The entire process will take less than 30 minutes.

Please note that participation will be voluntary. You may withdraw from participation at any point without penalty. Your survey responses will remain anonymous. Should you wish to participate in this project, please read the disclosure statement attached to this email. MHC leadership to those who wish to participate will provide a link to the pretest, WebEx in-service and post-test.

Sincerely,

David Tanis, RN
DNP Student
dtanis@email.arizona.edu

APPENDIX D:
EVALUATION INSTRUMENTS (PRE-TEST AND POST-TEST)

DAST-10 Screening Tool Education Survey

I am familiar with the use of the DAST-10?

| | | | | | | |
|-------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|----------------|
| | 1 | 2 | 3 | 4 | 5 | |
| Strongly Disagree | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | Strongly Agree |

I am familiar with the benefits of the DAST-10?

| | | | | | | |
|-------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|----------------|
| | 1 | 2 | 3 | 4 | 5 | |
| Strongly Disagree | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | Strongly Agree |

I would better understand the DAST-10 if I were formally educated on its use?

| | | | | | | |
|-------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|----------------|
| | 1 | 2 | 3 | 4 | 5 | |
| Strongly Disagree | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | Strongly Agree |

One benefit of the DAST-10 is the amount of time it takes to administer?

| | | | | | | |
|-------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|----------------|
| | 1 | 2 | 3 | 4 | 5 | |
| Strongly Disagree | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | Strongly Agree |

Patients should be screened with the DAST-10 as part of their intake process?

| | | | | | | |
|-------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|----------------|
| | 1 | 2 | 3 | 4 | 5 | |
| Strongly Disagree | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | Strongly Agree |

I intent to use the DAST-10 screening tool at MHC

| | | | | | | |
|-------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|----------------|
| | 1 | 2 | 3 | 4 | 5 | |
| Strongly Disagree | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | Strongly Agree |

Submit

This form was created inside of University of Arizona. [Report Abuse](#)

Google Forms

APPENDIX E:
PARTICIPANT MATERIAL (POWERPOINT PRESENTATION/POWERPOINT OUTLINE
AND SCRIPT)



DAST-10 Education for the Intent to Adopt at an Integrated Health Clinic

David Tanis, DNP-PMHNP Student



Local Problem

- Currently we do not have a standardized protocol/screening tool
- Current Process:
 - Not quantitative
 - Not trackable
 - No consequences
 - No intervention

Barriers to Substance Use Screening

- Education:
 - Knowledge about a good screening tool
 - Training on substance use screening tools

- Time:
 - Time constraints
 - Resources

3

Drug Abuse Screening Test (DAST-10)

| In the past 12 months... | | Circle | |
|--|--|--------|---------------|
| 1. | Have you used drugs other than those required for medical reasons? | Yes | No |
| 2. | Do you abuse more than one drug at a time? | Yes | No |
| 3. | Are you unable to stop abusing drugs when you want to? | Yes | No |
| 4. | Have you ever had blackouts or flashbacks as a result of drug use? | Yes | No |
| 5. | Do you ever feel bad or guilty about your drug use? | Yes | No |
| 6. | Does your spouse (or parents) ever complain about your involvement with drugs? | Yes | No |
| 7. | Have you neglected your family because of your use of drugs? | Yes | No |
| 8. | Have you engaged in illegal activities in order to obtain drugs? | Yes | No |
| 9. | Have you ever experienced withdrawal symptoms (felt sick) when you stopped taking drugs? | Yes | No |
| 10. | Have you had medical problems as a result of your drug use (e.g. memory loss, hepatitis, convulsions, bleeding)? | Yes | No |
| Scoring: Score 1 point for each question answered "Yes," except for question 3 for which a "No" receives 1 point. | | | Score: |

4

Drug Abuse Screening Test (DAST-10)

| Interpretation of Score | | |
|-------------------------|--|------------------------------------|
| Score | Degree of Problems Related to Drug Abuse | Suggested Action |
| 0 | No problems reported | None at this time |
| 1-2 | Low level | Monitor, re-assess at a later date |
| 3-5 | Moderate level | Further investigation |
| 6-8 | Substantial level | Intensive assessment |
| 9-10 | Severe level | Intensive assessment |



Benefits of DAST-10

- Fast administration
- Inexpensive
- High internal consistency (i.e. stable, accurate)
- Trackable
- Estimates severity



Using the DAST-10

| | DAST-10 | DAST-20 | Action | ASAM |
|--|---------|---------|---------------------------|-----------------|
| None | 0 | 0 | Monitor | |
| Low | 1-2 | 1-5 | Brief Counseling | Level I |
| Intermediate (likely meets DSM criteria) | 3-5 | 6-10 | Outpatient (intensive) | Level I or II |
| Substantial | 6-8 | 11-15 | Intensive | Level II or III |
| Severe | 9-10 | 16-20 | Intensive | Level III or IV |

ASAM: American Society of Addiction Medicine Placement Criteria

- Easily scored (0-10)
- Suggested Interventions



Benefits to MHC Practice

- Increased SUD identification
- Improved patient outcomes
- MAT program growth
- Increased profitability



[Slide 1] DAST-10 Education for the Intent to Adopt at an Integrated Health Clinic

- David Tanis, DNP-PMHNP Student

{Hello, I'm David Tanis, a Doctor of Nursing Practice student at the University of Arizona. I am in the psychiatric mental health nurse practitioner program. I have also been a clinical resident at Marana since January, and I will complete my rotation in December of this year. I want to thank you for taking time out of your day to help me implement my Doctor of Nursing Practice project.}

[Slide 2] Local Problem

- Pima County is worse than state average for top 20 causes of death in:
 - Drug-induced deaths
 - Opiates/Opioids
 - Pharmaceutical Opioids
 - Heroin

{I'm sure we are all aware of the current opioid epidemic and other substance abuse problems occurring in the United States. Pima County, home to Marana Healthcare, has their own set of substance use issues. In their 2015 Community Health Needs Assessment, Pima County performed worse in that Arizona State averages in only four of the top 20 causes of death. Four areas that Pima County performed worse in are drug-induced deaths, opiate and opioid related deaths, pharmaceutical opioid deaths, and heroin-related deaths}

- Current Process:
 - Not quantitative
 - Not trackable
 - No consequences
 - No intervention

{Currently at MHC, all AHCCCS patients receive initial and annual behavioral health assessments. In an attempt to identify drug use, patients are asked four questions. They are asked if they have a history of substance use, what their use over the previous 12 months is, if they have had any periods of sobriety, and if they have ever received substance use treatment. Unfortunately, there are disadvantages to the current process. These questions do not quantify their substance use problems, a patient's progress cannot be tracked, drug-related consequences are not identified, and standardized interventions are not suggested}

[Slide 3] Barriers to Substance Use Screening

- Education:
 - Clinical knowledge
 - Training
- Time:
 - Time constraints
 - Resources

{A search of the literature identifies educations and time as barriers to the implementation of a proper substance abuse screening tool. Healthcare workers lack proper training and clinical knowledge on the screening tools. Office visits are typically brief and resources are scarce, so there is often insufficient time to administer the screening tool}

[Slide 4] Drug Abuse Screening Test (DAST-10)

{Enter the Drug Abuse Screening Test, or DAST-10. This ten-item tool can be either self-administered by the patient or administered as an interview by the healthcare worker. It has a high internal consistency with a Cronbach's alpha ranging from .86 to .95. It also has high correlation to its 28-question counterpart, the DAST-28, with an $r=.98$ }.

[Slide 5] Benefits of DAST-10

- Fast administration
- Inexpensive
- High internal consistency
- Trackable
- Estimates severity

{There are many benefits to the DAST-10. It can be administered quickly, typically between one to five minutes. It is available to use at no cost and estimates the severity of a patient's drug-related problems numerically. It has a high internal consistency between psychiatric disorders and can identify problems related to all drugs of abuse. Also, by quantifying drug related consequences, a patient's progress in treatment can be tracked}

[Slide 6] Using the DAST-10

{Using the DAST-10 is simple. The questionnaire includes instructions for the patient should you choose to have the patient self-administer the screening. If you choose to administer it yourself through an interview, simply ask the patient the ten questions and have them answer with a "yes" or "no" response. Questions number 3 is keyed 1 point for a response of "no". All other questions are keyed one point for a response of "yes". After you have asked all the questions, simply add up the score. There is an interpretive guide listed on the bottom of the DAST-10 that correlates a severity to the total score. Appropriate actions, along with the suggested ASAM level of care, are listed in the interpretive guide}. Suggested actions include monitoring, brief counseling, intensive outpatient, and inpatient treatment}

{Slide 7} Implications for MHC

- Increased SUD identification
- Improved patient outcomes
- MAT program growth
 - Increased profitability

{There are multiple implications for the use of the DAST-10 at MHC. The identification of problematic substance use can increase, resulting in improved patient outcomes. The identification of substance use disorder can promote growth of MHC's developing MAT program, and can increase profitability with counseling services, psychiatric and medical services, and MAT. Also, the identification of problematic substance use from Marana's medical patients can trigger referrals to behavioral health services, further increasing profits and improving patient outcomes}

{Thank you again for taking time to help in my project implementation and to learn about the DAST-10. Please follow the link in the email you received today to complete the posttest survey. I hope you all have a wonderful day, and it continues to be a pleasure to work alongside all of you during my rotation}

APPENDIX F:
DRUG ABUSE SCREENING TOOL-10 (DAST-10)

Drug Abuse Screening Test, DAST-10

The following questions concern information about your possible involvement with drugs *not including alcoholic beverages* during the past 12 months.

"Drug abuse" refers to (1) the use of prescribed or over-the-counter drugs in excess of the directions, and (2) any nonmedical use of drugs.

The various classes of drugs may include cannabis (marijuana, hashish), solvents (e.g., paint thinner), tranquilizers (e.g., Valium), barbiturates, cocaine, stimulants (e.g., speed), hallucinogens (e.g., LSD) or narcotics (e.g., heroin). Remember that the questions *do not* include alcoholic beverages.

Please answer every question. If you have difficulty with a statement, then choose the response that is mostly right.

| In the past 12 months... | | Circle | |
|--|--|--------|---------------|
| 1. | Have you used drugs other than those required for medical reasons? | Yes | No |
| 2. | Do you abuse more than one drug at a time? | Yes | No |
| 3. | Are you unable to stop abusing drugs when you want to? | Yes | No |
| 4. | Have you ever had blackouts or flashbacks as a result of drug use? | Yes | No |
| 5. | Do you ever feel bad or guilty about your drug use? | Yes | No |
| 6. | Does your spouse (or parents) ever complain about your involvement with drugs? | Yes | No |
| 7. | Have you neglected your family because of your use of drugs? | Yes | No |
| 8. | Have you engaged in illegal activities in order to obtain drugs? | Yes | No |
| 9. | Have you ever experienced withdrawal symptoms (felt sick) when you stopped taking drugs? | Yes | No |
| 10. | Have you had medical problems as a result of your drug use (e.g. memory loss, hepatitis, convulsions, bleeding)? | Yes | No |
| Scoring: Score 1 point for each question answered "Yes," except for question 3 for which a "No" receives 1 point. | | | Score: |

| Interpretation of Score | | |
|-------------------------|--|------------------------------------|
| Score | Degree of Problems Related to Drug Abuse | Suggested Action |
| 0 | No problems reported | None at this time |
| 1-2 | Low level | Monitor, re-assess at a later date |
| 3-5 | Moderate level | Further investigation |
| 6-8 | Substantial level | Intensive assessment |
| 9-10 | Severe level | Intensive assessment |

APPENDIX G:
PROJECT TIMELINE

| Completion Date | Plan | Do | Study | Act |
|--------------------|--|--|------------------------|-------------------------------------|
| September 4, 2020 | IRB results received | | | |
| September 5, 2020 | Recruitment email sent to behavioral health director | | | |
| September 15, 2020 | Recruitment email sent to participants | | | |
| September 16, 2020 | | 11:30am: pretest, implementation, post-test, data received | | |
| October 19, 2020 | | | Data analysis complete | |
| October 20, 2020 | | | | Presented data, barriers identified |

APPENDIX H:
LITERATURE REVIEW GRID

| Author's Last Name / Pub Year | Title of Publication | Type of Study | Main Outcomes of Findings | Support for and or Link to Project |
|--|--|--------------------------|--|--|
| Aldridge, A., Linford, R., & Bray, J. (2017) | Substance Use Outcomes of Patients Served by a Large US Implementation of Screening, Brief Intervention, and Referral to Treatment (SBIRT). | Pre-post study design | <p>Statistically significant decreases in substance use because of SBIRT.</p> <p>Mindfulness intervention preferred brief Intervention (DBT also effective)</p> <p>AUDIT preferred alcohol screener</p> <p>DAST preferred drug screen. DAST is a tested and validated tool.</p> <p>The greater the intervention intensity, the greater the decrease in substance use</p> | <p>Supports the use of DAST in SBIRT</p> <p>DAST is tested and validated</p> <p>Successful SBIRT=decreased substance use</p> |
| Babor, T. F., Del Boca, F., & Bray, J. W. (2017) | Screening, Brief Intervention, and Referral to Treatment: Implications of SAMHSA's SBIRT Initiative for Substance Abuse Policy and Practice. | Quasi-experimental Study | <p>Greater intervention intensity is associated with larger decreases in substance use.</p> <p>Both brief intervention and treatment referral had positive outcomes.</p> <p>Implementation barrier mitigation: presence of program champions, funding availability, systematic changes, and management of SBIRT provider challenges</p> | <p>Necessity of provider training</p> <p>SBIRT=decreased substance use</p> <p>Implementation barriers</p> |

| Author's Last Name / Pub Year | Title of Publication | Type of Study | Main Outcomes of Findings | Support for and or Link to Project |
|--|--|------------------------------------|--|---|
| | | | <p>Clinically significant decreases in substance use for all substances</p> <p>Provider training is necessary for a successful SBIRT protocol</p> | |
| <p>Barata, I. A., Shandro, J. R., Montgomery, M., Polansky, R., Sachs, C., Duber, H., Weaver, L., Heins, A., Owen, H., Josephsen, E., & Macias-Konstantopolous, W. (2017)</p> | <p>Effectiveness of SBIRT for Alcohol Use Disorders in the Emergency Department: a Systematic Review.</p> | <p>Systematic Review</p> | <p>Reduction of consequences (e.g. injury) when SBIRT is used</p> <p>Reduction in alcohol use for low or moderate drinkers</p> <p>Decreased marijuana use with SBIRT</p> | <p>Decreased marijuana use with SBIT</p> <p>SBIRT reduces negative consequences</p> |
| <p>Bruguera, P., Barrio, P., Oliveros, C., Braddick, F. Gavotti, C., Bruguera, C. Lopez-Pelayo, H., Miquel, L., Segura, L., Colom, J., Ortega, L. Vieta, E., & Gual, A. (2018)</p> | <p>Effectiveness of a Specialized Brief Intervention for At-risk Drinkers in an Emergency Department: Short-term Results of a Randomized Controlled Trial.</p> | <p>Randomized Controlled Trial</p> | <p>SBIRT is effective at identifying at-risk drinkers</p> <p>SBIRT effective at reducing alcohol consumption</p> <p>Training is important for SBIRT procedures, including testing (different results depending on who provides the screening/if they are properly trained)</p> | <p>Training is necessary for effective SBIRT</p> |
| <p>Evren, C., Can, Y., Yilmaz, A., Ovali, E., Cetingok, S., Karabulut, V., & Mutlu, E. (2013)</p> | <p>Psychometric Properties of the Drug Abuse Screening Test (DAST-10) in Heroin Dependent Adults and</p> | <p>Cross-Sectional Study</p> | <p>The DAST-10 assesses a unidimensional construct.</p> <p>High internal consistency (Cronbach is 0.92).</p> | <p>Supports the use of DAST-10 for the identification of substance use.</p> |

| Author's Last Name / Pub Year | Title of Publication | Type of Study | Main Outcomes of Findings | Support for and or Link to Project |
|---|--|-----------------------|--|---|
| | Adolescents with Drug Use Disorders. | | Good discriminatory validity. Good predictive validity. High sensitivity and specificity. | |
| Giguere, C. & Potvin, S. (2017) | The Drug Abuse Screening Test Preserves its Excellent Psychometric Properties in Psychiatric Patients Evaluated in an Emergency Setting. | Cross-Sectional Study | Excellent psychometric properties. Excellent internal consistency (Cronbach's 0.88). Internal consistency is constant between different psychiatric diagnoses. Very good test-test reliability. Good predictive power. | Supports the use of DAST-10 for the identification of substance use. |
| Humeniuk, R., Ali, R., Farrel, M. Formigone, M., Jittiwutkarn, J., & Nhiswatiwa, S. (2008) | Validation of the Alcohol, Smoking, and Substance Involvement Screening Test (ASSIST). | Cross-sectional Study | The ASSIST is a valid screening test for psychoactive substances. ASSIST can distinguish between low, medium, and high-risk substance use | Screening tools are time consuming to administer (DAST-10 is rapid) Another popular screening tool to compare with the DAST-10 |
| Lam, L., Leung, W., Ip, P., Chow, C., Chan, M., Ng, J., Sing, C., Lam, Y., Mak, W., Chow, K., & Chin, R. (2015) | Validation of the Drug Abuse Screening Test (DAST-10): A Study on Illicit Drug Use Among Chinese Pregnant Women. | Cross-Sectional Study | Significant correlation between DAST-10 and urinalysis results ($r=0.103$, $p=0.001$). Significant correlation between DAST-10 and self-report of substance use. | Supports the use of DAST-10 for the identification of substance use. |



| Author's Last Name / Pub Year | Title of Publication | Type of Study | Main Outcomes of Findings | Support for and or Link to Project |
|--|---|-----------------------|---|---|
| | | | <p>High face validity.</p> <p>Sensitivity of 92.9%.</p> <p>Specificity of 67.4%</p> | |
| Madras, B., Compton, W., Avula, D., Stegbauer, T., Stein, J., & Clark, H. (2009) | Screening, Brief Interventions, Referral to Treatment (SBIRT) for Illicit Drug and Alcohol Use at Multiple Healthcare Sites: Comparison at Intake and 6 Months Later. | Cohort Study | Drug use was 67.7% lower with SBIRT ($p < 0.001$) | <p>Provides a good list of multiple sites that used DAST-10 for screening</p> <p>DAST screener was used, and had an outcome of decreased drug use</p> |
| McCabe, S., Boyd, C., Cranford, J., Morales, M., & Slayden, J. (2006) | A Modified Version of the Drug Abuse Screening Test Among Undergraduate Students. | Cross-sectional study | <p>Nearly 1 in 10 undergraduate students experienced three or more DAST-10 items in the past 12 months.</p> <p>Less than 6% of individuals who reported three or more DAST-10 items had previously used treatment services for substance abuse.</p> <p>The DAST-10 shows promise for detecting drug use a month college students.</p> | Supports the use of the DAST-10 |
| McNeely, J., Kumar, P., Rieckmann, T., Sedlander, E., Farkas, S. Chollak, C., & Rosenthal, R. (2018) | Barriers and Facilitators Affecting the Implementation of Substance Use | Qualitative study | Barriers identified by providers include lack of clinical knowledge and training, as well as time pressure, resources, lack | Supports the need for provider education on SBIRT procedures, including screening |

| Author's Last Name / Pub Year | Title of Publication | Type of Study | Main Outcomes of Findings | Support for and or Link to Project |
|-------------------------------|---|-----------------------------|---|--|
| | Screening in Primary Care Clinics: a Qualitative Study of Patients, Providers, and Staff. | | of space, and difficulty accessing addiction treatment | |
| Mdege, N., & Lang, J. (2011) | Screening Instruments for Detecting Illicit Drug Use/Abuse that Could be Useful in General Hospital Wards: A Systematic Review. | Systematic Review | <p>This review identifies and describes 13 instruments that could be useful in general hospital wards.</p> <p>Lack of evidence available to choose an illicit substance screening tool</p> <p>No “gold standard” screening tool</p> <p>DAST screens for multiple substances used</p> <p>DAST does not distinguish between current/past use</p> <p>DAST has high internal consistency, sensitivity, specificity.</p> <p>Similar consistency, sensitivity, and specificity between 10, 20, and 28-item DAST</p> | <p>Supports use of DAST</p> <p>Supports use of shorter DAST-10 version</p> |
| Moyer, V. (2013) | Screening and Behavioral Counseling Interventions in | Clinical Practice Guideline | Barriers to screening include lack of time, familiarity with screening tools, training in | Supports educating providers on screening tools |

| Author's Last Name / Pub Year | Title of Publication | Type of Study | Main Outcomes of Findings | Support for and or Link to Project |
|---|---|-----------------------------|---|--|
| | Primary Care to Reduce Alcohol Misuse | | managing positive results, and available treatment resources | |
| Newhouse, R., Janney, M., Gilbert, A., Agley, J., Bakoyannis, Ferren, M., & Thoele, K. (2018) | Study Protocol Testing Toolkit Versus Usual Care for Implementation of Screening, Brief Intervention, Referral to Treatment in Hospitals: a Phased Cluster Random Approach. | Randomized Controlled Trial | Even though hospitalized patients are asked about their substance on admission, validated screening tools are rarely used | This is the current process at MHC |
| Rockne, W., Quinn, K., James, G., & Cochran, A. (2019) | Identification of Substance Use Disorders in Burn Patients Using Simple Diagnostic Screening Tools (AUDIT/DAST-10) | Cross-sectional study | <p>Gender did not differ between positive and negative DAST-10 scores.</p> <p>Positive DAST-10 screening results were statistically significant for younger participants.</p> <p>14 patients were identified as problematic substance (other than alcohol) users, 11 were offered drug counseling, 9 accepted drug counseling</p> | <p>Supports the use of DAST-10 for the identification of substance use.</p> <p>Use of DAST-10 for SBIRT=patients received treatment.</p> |
| Sahker, E., Jones, D., Lancianese, D., Pro, G., & Arndt, S. (2019) | Racial/Ethical Differences in Alcohol and Drug use Outcomes Following Screening, Brief Intervention, and | Cross-sectional study | SBIRT is useful in addressing health services equity among Black and male populations. | Supports the use of universal screening |

| Author's Last Name / Pub Year | Title of Publication | Type of Study | Main Outcomes of Findings | Support for and or Link to Project |
|--|--|-----------------------------|--|--|
| | Referral to Treatment (SBIRT) in Federally Qualified Health Centers. | | Public health policy should support universal substance use screening | |
| Shirinbayan, P., Salavati, M., Soleimani, F., Saeedi, A., Asghari-Jafaraabadi, M., & Hemmati-Garakani, S. (2019) | The Psychometric Properties of the Drug Abuse Screening Test. | Cross-sectional study | DAST-10 has a Cronbach's alpha of 0.93. Excellent (>0.70) reliability. High internal consistency. Highly reliable tool for screening for substance use. | Supports the use of DAST-10 for the identification of substance use. |
| Skinner, H. (1982). | The Drug Abuse Screening Test. | Randomized controlled trial | DAST internal consistency is substantial at .92 DAST bias only moderately correlated with social desirability and denial Supports usefulness of DAST, although further validation needed | Original study on the DAST screening tool |

APPENDIX I:
OTHER DOCUMENTS AS APPLICABLE TO THE PROJECT (EMAIL
CORRESPONDENCE WITH DR. HARVEY SKINNER)

Harvey A Skinner   Inbox - University of Arizona May 27, 2020 at 8:20 AM HS

[EXT]Re: Permission to use DAST-10 in DNP Project Details

To: David Tanis, Cc: Harvey Skinner, Andrew.Johnson@camh.ca

External Email

Dear David

Thank you for your interest in the Drug Abuse Screening Test (DAST). The DAST-10 and DAST-20 versions are published by the Center for Addiction and Mental Health (CAMH), Toronto. I am the test author and copyright holder with CAMH.

You have my permission to use the DAST for staff education as long as you acknowledge my authorship and respect my copyright along with CAMH. Please use this updated copyright statement:

© Copyright 1982 by the test author Dr. Harvey Skinner, York University, Toronto, Canada and by the Centre for Addiction and Mental Health, Toronto, Canada.

Attached is a Manual that describes the test development, instructions for using the DAST and supporting research.

Regards

Harvey

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