

Anxiety and Depression Screening at Well Woman Visits

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I have no known conflict of interest to disclose.

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Abstract

Anxiety and depression are leading causes of disability in the United States. Mental health screening rates are surprisingly low, particularly among women, who are disproportionately affected by these conditions. According to clinical practice guidelines, systematic mental health screening should be conducted using reliable tools. A review of relevant literature suggests that implementing standardized mental health screening practices can lead to several positive outcomes, including increased screening completion rates, identification of at-risk patients, and interprofessional collaboration. Guided by the Health Promotion Model (Pender, 1982), a women's health clinic at a Federally Qualified Health Center (FQHC) in the Southwestern United States implemented standardized anxiety and depression screening during well-woman exams. Six months post-implementation, a chart audit evaluated the impact of anxiety and depression screening on tool completion rates, referrals to behavioral health specialists, and subsequent patient evaluations. Data analysis indicated that 80.3% ($n = 139$) of participants completed at least one mental health screening, and more than half of all eligible participants were screened for both anxiety and depression. Of those referred to behavioral health, over 75% ($n=16$) only had a positive anxiety screening, and more than 70% ($n=15$) of these referred patients connected with a specialist on the same day. Thorough mental health screenings and prompt evaluations by specialists highlight the benefits of interprofessional teamwork. In conclusion, the findings of this project underscore the importance of screening for anxiety and depression in women.

Keywords: Anxiety, depression, women's health, adult women, mental health screening, behavioral health, care collaboration

Anxiety and Depression Screening at Well Woman Visits

The annual wellness exam for adult females provides an opportunity for a comprehensive wellness visit, including standardized health screenings and gynecological care. During a yearly exam, women may wish to discuss concerns beyond the female reproductive system, including worries and life stressors. Women's health providers strive to evaluate the patient's physical and mental well-being by examining the patient's medical history, conducting screenings for substance use, mental health issues, and intimate partner violence, and performing a physical examination (American College of Obstetricians and Gynecologists [ACOG], 2023; Women's Preventive Services Initiative [WPSI], 2023). In addition to other health screenings, it is recommended that healthcare providers screen women annually for anxiety and depression, accurately interpret their responses, and refer them to behavioral health services when necessary (ACOG, 2023; WPSI, 2023).

Problem Statement

Anxiety is a common aspect of the human experience, often caused by stress and uncertainty. However, when one's anxiety becomes excessive and debilitating, this common condition has the potential to manifest into a psychiatric disorder. Anxiety not only affects one's overall quality of life but also causes a significant economic burden, with billions of dollars being spent annually in the United States to address these conditions (O'Connor et al., 2023). These disorders often occur alongside comorbidities like substance abuse, post-traumatic stress disorder, and, most commonly, depressive disorders (Gregory et al., 2020).

Anxiety disorders will affect over 30 billion Americans throughout their lifetime, making it the most common mental health diagnosis among the general public (Nelson et al., 2020). Anxiety disorders often go undetected in primary care, with only 11% of adults in the United

States (US) receiving treatment within a year of symptom onset (United States Preventive Services Task Force [USPSTF], 2023a). Healthcare providers generally lack the time and training to adequately screen for, diagnose, and treat anxiety disorders (Moriani et al., 2021).

Purpose and Rationale

Women are at an increased risk of developing an anxiety disorder, with a lifetime prevalence of 40%, twice that of their male counterparts (Gregory et al., 2020). This paper proposes using the 7-item Generalized Anxiety Disorder Scale (GAD-7) anxiety screening tool, in addition to the 2-item Patient Health Questionnaire (PHQ-2) depression screening, during annual well-woman exams to evaluate mental health. The aim is to screen for anxiety and depression disorders and enable prompt referrals to behavioral health services during well-woman visits. The GAD-7 is a validated tool, and the inclusion of this screening tool is expected to improve the identification and management of anxiety disorders in women (ACOG, 2023).

Background and Significance

During an annual wellness visit, healthcare providers screen women for various medical conditions based on age and medical history through a physical exam, medical imaging, and laboratory testing. By integrating a standardized anxiety screening tool into this process, healthcare providers can more effectively identify potential anxiety disorders in their patients and facilitate a referral to behavioral health for prompt diagnosis and treatment.

Adult Females

Anxiety disorders are the most common mental health disorder in women (Gregory et al., 2020). Women are more likely to develop anxiety disorders throughout their lifetime due to a combination of genetic, sex-specific, and situational factors (Gregory et al., 2020; Nelson et al., 2020). This increased prevalence of anxiety in women is linked with biological mechanisms that

begin in utero, and research suggests heritability of an anxiety disorder ranges from 30-50% (Gregory et al., 2020). High levels of cortisol in expectant mothers can impact the connection of the amygdala in developing females, leading to behavioral problems in young girls and anxiety in adulthood (Nelson et al., 2020). Depression also disproportionately affects the female gender. In 2019, 19.4 million American adults experienced at least one depressive episode, with women being twice as likely as men to develop a depressive disorder (USPSTF, 2023b).

Concurrent Anxiety and Depression Screening

Anxiety and depression occur concurrently in 30-50% of adults evaluated in primary care practices (Newman, 2022). An estimated 56% of individuals with major depressive disorder have a coexisting anxiety disorder, which has been shown to increase the likelihood of a suicide attempt (Gregory et al., 2020). ACOG (2023) and the USPSTF (2023a) recommend screening for anxiety and depression by using a standardized, validated screening tool. WPSI (2023) also recognizes the prevalence of mental health concerns in women and recommends both anxiety and depression screening in all women ages 13 and older, including those who are pregnant and postpartum. Screening for anxiety and depression in a women's health setting has multiple benefits, including the promotion of mental health awareness, reduced stigma, and increased referrals to behavioral health services (ACOG, 2023).

There are various screening tools available to identify anxiety and depression, such as the commonly used PHQ-2 depression screening tool and the GAD-7 anxiety screening tool (ACOG, 2023; Newman, 2022). The PHQ-9 is an extended version of PHQ-2, designed for a more in-depth depression screen (ACOG, 2023). Both the PHQ-9 and GAD-7 are reliable, self-administered screening tools commonly used in primary care settings. These screening tools have been validated in many languages and populations, including pregnant and postpartum

women (ACOG, 2023). Significant evidence indicates a correlation between the results of these tests, emphasizing the importance of utilizing both in clinical practice (ACOG, 2023; Newman, 2022). According to a pragmatic analysis of the routine use of the PHQ-9 and GAD-7 screenings in primary care by Newman (2022), the PHQ-9 and GAD-7 tend to overlap in their detection of symptoms, illustrating a high comorbidity between anxiety and depression. By utilizing both screening tools, healthcare providers can refer patients to behavioral health specialists and track depression and anxiety symptoms (Newman, 2022).

Completed Screening Tools and Behavioral Health Care Coordination

Screening for anxiety can help identify anxiety disorders early, leading to timely treatment and an improved overall quality of life. However, anxiety disorders in patients who visit primary care practices are often not recognized (USPSTF, 2023a). This may be due in part to patients with underlying anxiety presenting with physical symptoms or sleep disturbances rather than a chief complaint synonymous with generalized anxiety (USPSTF, 2023). Primary care practices may also have limitations, including visit time and behavioral health resources. Increasing screening will fail to benefit patients without an increase in collaborative care efforts to treat anxiety and depression (Smolderen & Burg, 2021).

Limited evidence exists to recommend when to initiate and repeat anxiety and depression screenings, and current research on the rate of screening in primary care is insufficient (USPSTF, 2023a; USPSTF, 2023b). Healthcare providers are advised to consider the patient's medical history, risk factors, and potential comorbidities when determining the timing and frequency of screening (Gregory et al., 2020; USPSTF, 2023a; USPSTF, 2023b). It is important to note that using screening tools is to identify those at risk of developing anxiety or depressive disorders.

Positive screening for anxiety alone is not diagnostic, and further evaluation by a behavioral health specialist is required (Gregory et al., 2020; USPSTF, 2023a).

The widespread presence of anxiety and depressive disorders among adults continues to grow, and more individuals are presenting to their primary care providers with mental health concerns. Anxiety and depression are leading causes of disability in the US, and failure to identify patients struggling with these disorders places a significant strain on America's healthcare system. Routine screening for anxiety and depression in primary care can aid early recognition and treatment of mental health disorders (USPSTF, 2023a & USPSTF, 2023b).

Internal Data

A Federally Qualified Health Center (FQHC) offers primary care services to underserved communities through federal funding, aiming to provide quality, accessible healthcare services regardless of financial status (Wakefield, 2021). Current practice in a women's health department at a FQHC in the Southwestern US is to screen for depression only during well-woman exams. In addition, the FQHC offers on-site and virtual behavioral health services that can interpret the screening results and provide immediate assistance to women in need. At this FQHC, it is standard protocol to screen women for depression using the PHQ-2/PHQ-9 during their annual wellness visit. Perinatal patients undergo depression and anxiety screening during their first prenatal visit and subsequently during each trimester as well as postpartum. However, routine assessment of anxiety using the GAD-7 is typically not conducted for women unless it is clinically indicated based on PHQ-2 scoring or deemed necessary by the healthcare provider.

This project aims to provide women's health providers with effective screening procedures to improve care coordination with the behavioral health team and enhance care for adult females. An in-depth literature review and analysis of the mental health screening

procedures at this FQHC led to the following PICOT question: “In women of reproductive age, how does screening for mental health conditions, compared to no screening, affect the rates of completed screenings and care collaboration with behavioral health specialists?”

Search Strategy

A comprehensive literature review was conducted to answer the PICOT question. To accomplish this, the following databases were carefully chosen: CINAHL, PubMed, and PsycINFO. These databases were selected based on their relevance in medical research and the number of high-quality, peer-reviewed, evidence-based studies available. The search process for each database is described in detail below.

Keyword Selection

The process of selecting keywords was deliberate, considering the various aspects of the PICOT question, including relevance and significance to the research. The primary objective was to identify high-quality, systematic, comprehensive searches that could accurately answer the PICOT question. The results were further refined to include only the most relevant and informative research. An initial search of various databases utilized the following keywords and Boolean connectors: *mental health*, AND *screening*, AND *primary care*, AND *adult*.

Limitations, Inclusion, and Exclusion Criteria

The search criteria were set to consider studies published in English between 2019 and 2024. The studies included a sample population of adults aged 18 or older, conducted in primary care settings, and focused on screening for mental health conditions. Studies involving children and those screening for disorders outside of mental health were excluded from the search.

CINAHL Database Search

An initial search of the CINAHL database utilizing the keywords and Boolean connectors *mental health*, AND *screening*, AND *primary care*, AND *adult* supplied 560 results, with publication dates ranging from 1987 to 2024. The date range was refined to include only articles published within the past five years, yielding 182 results. The final results were methodically reviewed, and the keyword *anxiety* was added to the initial search with the same filters applied. This search supplied 42 articles, which were screened for relevance to the PICOT question.

PubMed Database Search

A search using the terms and Boolean connectors *mental health*, AND *screening*, AND *primary care*, AND *adult* was conducted using the PubMed database. The search generated 9,150 articles with publication dates spanning from 1967 to 2024. To narrow the results to more recent findings, the search was refined to include only articles published within the past five years, resulting in a reduced count of 2,781 articles. The search was further narrowed to exclude patient populations 18 years or younger, yielding 2,405 results. Those results were further analyzed based on the level of evidence, highlighting 283 randomized controlled trials (RCTs), 71 meta-analyses, and 136 systematic reviews for a collective 439 articles. The remaining results were filtered by gender, of which 270 included female participants. The search was refined by adding the keyword *anxiety*, which yielded 62 articles screened for relevance to the PICOT question and appropriately included in the research.

PsycINFO Database Search

PsycINFO was initially approached in the same manner as PubMed and CINAHL, with a search utilizing the terms and Boolean connectors *mental health*, AND *screening*, AND *primary care*, AND *adult* was performed, yielding 2,152 results. The search was narrowed to 330 articles by filtering out those that included samples from individuals under 18 years old and those

published more than five years ago. Excluding research not published in scholarly journals resulted in 293 articles, of which 121 included female participants. The search was replicated with the same age and publication time frame, with results from scholarly journals only. However, the keyword *adult* was replaced with *woman* OR *female*, which yielded 705 results. The search was then slightly modified, interchanging the keyword *mental health* with *anxiety*. This search yielded 262 results. After using the same filters and keywords, Boolean connectors were applied to the phrase *mental health screening*, resulting in *mental health AND screening*, which yielded 30 articles. These articles were screened for relevance to the PICOT question and selected for inclusion in the research as appropriate.

Critical Appraisal and Synthesis of Evidence

A comprehensive review of current literature found a lack of recent, high-quality research studies on mental health screening in women. The majority of high-quality research studies focusing on anxiety screening were outdated, suspected to be due to the initial publication of the GAD-7 screening tool in 2006 (Spitzer et al., 2006). The criteria were broadened to include males, females, and pregnant and postpartum women from multiple outpatient healthcare practices to expand the search. As a result, ten studies were selected as the most recent and highest-quality articles relevant to the PICOT question (see Appendix A, Table A1). Each study's quality, validity, reliability, and applicability were assessed using a critical appraisal tool concerning the proposed PICOT (Melnyk & Fineout-Overholt, 2023). Furthermore, the studies were evaluated based on their design, variables, screening tools, associated bias, and the application of evidence to a women's health practice setting.

The final studies selected for analysis included one descriptive correlational study, four retrospective cohort studies, three evidence-based quality improvement projects, one mixed-

method study, and one systematic review. The low level of evidence assigned to many studies suggests a lack of recent research related to the PICOT question (Melnyk & Fineout-Overholt, 2023). All studies reported quantitative data, which was synthesized for comparison (See Appendix A, Table A2). All studies examined mental health screening, individually assessing its impact on completion rates, recognition of at-risk patients, treatment, anxiety and depression reduction, and care collaboration (See Appendix A, Table A2).

Nearly all studies had a predominantly female sample population and were conducted in an outpatient setting, except for the systematic review, which included several practice settings. The sample populations in all but one study included more than 200 participants, minimizing the chance factor and highlighting the actual effect of the chosen intervention (See Appendix A, Table A2) (Melnyk & Fineout-Overholt, 2023). Attrition rates suffered significantly in the majority of the studies. These rates could be explained in some of the articles, including the loss of participants due to a practice location closing, the effects of COVID-19, and the high turnover of staff responsible for administering screening (See Appendix A, Table A1).

The screening tools used for mental health assessment in all selected studies were consistent, with each study utilizing either the GAD-7 tool for anxiety assessment, the PHQ-2/PHQ-9 tool for depression assessment, or both. Four studies used both tools, indicating the significance of screening patients for both anxiety and depression. The screening tools chosen were assessed for validity and reliability in each respective study, yielding high levels of sensitivity and specificity (See Appendix A, Table A1). Trends in increased screening completion rates can be observed across all studies, leading to a subsequent rise in completed screenings, improved collaboration among the multidisciplinary healthcare team, and better recognition of symptoms associated with mental health diagnoses (See Appendix A, Table A2).

Discussion

A review of relevant research studies and recently published clinical practice guidelines supports the implementation of anxiety screening during annual well-woman exams (ACOG, 2023; Blackstone et al., 2022; Haughtigan et al., 2021; Johnson et al., 2021; Lieb et al., 2020; Pilipenko & Vivar-Ramon, 2023; Pfoh et al., 2020; Poleshuck et al., 2023; Nelson et al., 2020; Salinas et al., 2023; Standeven et al., 2023; USPSTF, 2023a; USPSTF, 2023b; WPSI, 2023). Research indicates that the GAD-7 is a reliable and valid tool for anxiety screening with high sensitivity and specificity levels appropriate for use in a wide range of practice settings (Nelson et al., 2020; Salinas et al., 2023; USPSTF, 2023a; USPSTF, 2023b). Without systematic screening regimens for mental health conditions in healthcare, the risk of unidentified anxiety and depression affecting patients is high. This is especially pertinent in women's health, as annual well-woman exams provide an excellent opportunity for healthcare providers to connect with patients outside of their reproductive health concerns. Additionally, recognizing symptoms of anxiety and depression in women of reproductive age before pregnancy allows for early intervention and treatment, potentially reducing rates of postpartum depression, one of the nation's leading causes of maternal morbidity and mortality (ACOG, 2023).

Theoretical Framework Application

Nola Pender's Health Promotion Model (1982) was utilized to guide the implementation of this project. Screening for mental health conditions can allow healthcare providers to recommend appropriate treatment options, including referrals to behavioral health services. However, it is up to the individual to accept the healthcare provider's recommendations and seek treatment. According to the Health Promotion Model (1982), healthcare professionals are integral to a patient's intrapersonal environment. They can positively impact them throughout life

(See Appendix B, Figure B1). Conducting mental health screenings during annual well-woman exams can help patients feel emotionally supported, increasing their trust in the practitioner. This can improve the likelihood of the patient accepting the practitioner's recommendations. Pender's Health Promotion Model (1982) applies especially in community health settings and is appropriate for the FQHC where the intervention will occur.

Implementation Framework

Graham and Logan's (2004) Ottawa Model of Research Use was employed to guide the implementation of this project. This model considers the process of interconnected decisions and the actions taken by key stakeholders involved in the research (Graham & Logan, 2004). This implementation framework consists of three phases with six primary elements that must be considered when conducting research to influence clinical practice (Graham & Logan, 2004). According to the model, the first step is to assess the barriers and support, including identifying the intervention and implementation method, the individuals adopting the proposed change, and the environment in which the change will occur (Graham & Logan, 2004). The practice change implemented in the FQHC will affect various stakeholders, including the women's health providers, medical assistants (MAs) responsible for administering the screening and entering results into the patient's chart, and the onsite behavioral health team.

The next phase involves identifying successful implementation strategies, implementing the intervention, and assessing the adoption of the practice change (Graham & Logan, 2004). Appropriate methods to encourage mental health screening at this FQHC that could be considered include posting reminders in the breakroom, on the whiteboards in the nurse's station, and through electronic health record (EHR) reminders. Per Graham and Logan (2004), the final phase of the model involves evaluating the impact of the intervention on the patients, healthcare

providers, key stakeholders, and the organization as a whole. This includes reviewing mental health screening completion rates and collaborative care efforts with on-site behavioral health.

Implications for Practice Change

Anxiety disorders are the most common mental health disorder in the female gender, and anxiety and depression often present concurrently (Gregory et al., 2020; Newman, 2022). Evidence suggests that women are increasingly affected by anxiety disorders, but primary care centers lack routine screening practices for mental health conditions. This indicates the need to implement systematic mental health screening practices in primary care settings serving women. The primary aim of this project is to improve the identification of anxiety symptoms. To achieve this, an intervention was developed based on Nola Pender's Health Promotion Model (1982). The research was conducted per the Ottawa Model of Research Use and evaluated for its impact on mental health screening rates and care collaboration (Graham & Logan, 2004). The main goal of this project is to support women who are struggling with mental health challenges by partnering with behavioral health services on-site to offer more collaborative care for anxiety. To adhere to the latest clinical practice guidelines, this project introduced anxiety screening into well-woman exams using the GAD-7, a dependable and accurate screening tool. This initiative has already been implemented in the FQHC's pediatric clinics and has demonstrated encouraging outcomes. By promoting collaboration between women's health and behavioral health professionals, stakeholders at the FQHC aspire to enhance the quality of care provided to all women.

Project Methods

Ethical Considerations, Human Subjects Protection, and IRB Approval

The ethical principles of autonomy, justice, beneficence, and non-maleficence will guide the project. Autonomy acknowledges that participants have the right to make decisions about

their physical and mental health and their decision to complete the anxiety screening involved in this project (Melnyk & Fineout-Overholt, 2023). In line with the principle of autonomy, patients will be advised that completing the screening is voluntary and completing either none or only one of the questionnaires will not impact the level of care they receive.

The project prioritizes beneficence, emphasizing the importance of doing good for patients (Melnyk & Fineout-Overholt, 2023). This principle will be upheld by advocating for the inclusion of mental health care during annual exams, underscoring the significance of mental health in overall wellness. This correlates with non-maleficence, defined as the importance of not harming patients (Melnyk & Fineout-Overholt, 2023). Excluding mental health screenings during an annual exam may harm patients and does not reflect comprehensive healthcare. This project aims to expand the scope of a yearly wellness exam to address mental health concerns and provide necessary behavioral health services for patients. Finally, the principle of justice ensures that resources are distributed equitably among individuals without bias (Melnyk & Fineout-Overholt, 2023). Adhering to this principle, the project will offer anxiety screenings to all women coming in for their annual exams, providing them in languages other than English if necessary. Furthermore, behavioral health services will remain accessible to all patients.

The Arizona State University institutional review board (IRB) evaluated the project methodology to ensure adherence to ethical principles and the protection of participants' human rights. ASU IRB approval was obtained on 10/28/2024. Patient consent is not mandatory for the mental health screening at the FQHC, and patients can decline to complete the screening forms. Each chart will receive a unique subject ID to uphold patient confidentiality.

Setting and Stakeholders

Located in the Southwestern US, this FQHC is dedicated to serving a diverse population. This non-profit organization collaborates with local communities to provide affordable, high-quality care for adults, children, pregnant women, and uninsured individuals. This organization aims to create a patient-centered medical home by offering various medical specialties in one cohesive setting. The facility covers 30,000 square feet, with exam rooms specifically dedicated to women's health, and is staffed by women's health nurse providers and MAs.

At this FQHC, women undergo routine depression screening during their annual wellness visit. The MAs verbally conduct the PHQ-2 depression screening as part of their intake process during yearly wellness visits and document the patient's results in the EHR. Depending on the initial findings, additional screening may be warranted. The EHR now includes a GAD-7 "smart form" to facilitate organized data review. If necessary, the healthcare provider collaborates with a behavioral health specialist who reviews screening results, provides mental health care to referred patients, and facilitates access to essential services such as counseling. Stakeholder involvement is crucial for implementing anxiety screening during annual wellness exams for adult females at this FQHC.

Participants and Recruitment

Within this healthcare system, the routine assessment of anxiety utilizing the GAD-7 is not conducted for women who are not pregnant or postpartum unless it is clinically indicated based on PHQ-2 results or deemed necessary by the healthcare provider. Other departments within this organization, such as family practice and pediatrics, adhere to distinct mental health screening protocols. Consequently, this piloted screening process excluded women under 18 and those receiving care outside the women's health department at the site. Perinatal patients who undergo depression and anxiety screening during their initial prenatal visit, each trimester, and

postpartum, and women seeking treatment for purposes other than an annual wellness examination were also excluded. The MAs identify eligible women and administer the PHQ-2 and GAD-7 during their intake assessment.

Planning and Intervention

The project design began with a review of current mental health screening guidelines for women. The goal is to support the introduction of anxiety screening at the selected project site. The published guidelines from ACOG (2023) stress the importance of using a valid and reliable screening tool to assess anxiety during annual well-woman visits. Before starting anxiety screening using the GAD-7 during annual well-woman exams, the project was verbally presented to the facility staff. The specific objectives and measurable outcomes of implementing systematic anxiety screening were clearly delineated. Additionally, the roles of the healthcare providers, mental health specialists, the MAs, and patients were precisely defined. Any questions about the process were also addressed. This project strictly adhered to a budget to ensure the cost-effectiveness of the intervention (see Appendix D, Figure D1).

Beginning on July 15, 2024, any adult female who is neither pregnant nor postpartum and presents at the clinic's women's health department for an annual wellness exam was given a paper copy of the GAD-7 anxiety screening and the PHQ-2 depression assessment in their preferred language, English or Spanish, upon being admitted to their exam room by the MA. The patients were reminded that completing the screening is voluntary, and their answers would not affect the standard of their care. Following facility protocol, the MAs input the patient's results into the EHR and administered a PHQ-9 to patients with positive PHQ-2 scores. The healthcare provider will then document the referral to behavioral health in the patient's chart notes, after which the behavioral health specialist will be notified to conduct an assessment. The behavioral

health specialist will assess the patient, document the visit, and coordinate any additional referrals. The screening results and clinical notes were documented in the EHR. A retrospective chart audit tool created by the investigator was approved for use by the Arizona State University Institutional Review Board (ASU IRB). It was utilized for data collection following IRB approval of the project.

Project Timeline

In the spring of 2024, a literature search on mental health screening for adult women was conducted utilizing PsycINFO, PubMed, and CINAHL databases. After evaluating the current literature and reviewing evidence-based practices regarding screening and mental health conditions in women, the following PICOT question was proposed: “In women of reproductive age, how does screening for mental health conditions, compared to no screening, affect the rates of completed screenings and care collaboration with behavioral health specialists?”

In light of the evidence-based national guidelines for mental health screening in women, an FQHC located in the Southwestern US agreed to pilot anxiety and depression screening during annual well-woman exams to assess for the completion anxiety and depression screening, and in the case of positive screening results, a referral to behavioral health services, and a documented evaluation of the patient completed by the project site’s behavioral health specialists. In October 2024, the project was submitted to the ASU IRB for approval prior to the start of data collection.

The charts of all women who presented to the project site between July 15, 2024, and January 15, 2025, were evaluated using a chart audit tool to assess the completion of anxiety and depression screenings, referrals to behavioral health services, and follow-up evaluations by the project site’s behavioral health specialists in the event of a positive screening. Following data

collection, the data was statistically analyzed using Intellectus™ software, and the results were disseminated to the project site's stakeholders and ASU.

Data Collection, Instruments, and Outcome Measurement

Data collection was conducted via a retrospective chart review. A representative from the project site's informatics department provided a list of individuals meeting the inclusion criteria for the chart audit. The provided data contains the account number and name of every participant who qualified for well-woman visits between 07/15/2024 and 01/15/2025. The data collected in the chart review was stored on a locked, secure laptop only available for the co-investigator's review, which was permanently deleted following data analysis. Each chart was assigned a unique subject identifier key to ensure privacy and confidentiality. Subsequently, each chart underwent a thorough assessment using an approved chart audit form designed by the co-investigators that was granted face validity.

The co-investigators were granted permission from the project site to access its EHR for data collection. The chart audit occurred on-site, ensuring that no identifiable information left the project location. The de-identified data collected through the chart audit form included age, race, ethnicity, insurance status, completion of the initial screening of PHQ-2 and GAD-7, results of these initial screenings (including score and positive/negative status), completion and score of the PHQ-9 if further depression screening was needed, details of any behavioral health referrals, and whether a behavioral health evaluation was conducted within four weeks of the medical visit referral (see Appendix F, Figure F1).

Instruments

The Generalized Anxiety Disorder Scale (GAD-7)

Spitzer et al. (2006) conducted a study aimed at developing a concise clinical tool for identifying generalized anxiety disorder (GAD). The study was conducted in 15 primary care clinics across the US from November 2004 to June 2005. A total of 2740 adult patients completed a questionnaire, and 965 of them underwent a phone interview with a mental health professional within a week of completion. To validate the tool, Spitzer et al. (2006) compared the GAD self-report scale diagnoses with those made by mental health professionals, functional status measures, disability days, and health care utilization.

Spitzer et al. (2006) found that the 7-item anxiety scale is a reliable and valid tool for identifying potential cases of GAD (see Appendix B, Figure B1). The items for the GAD scale were selected based on their correlation with the total 13-item scale score for individuals who did not have an interview with a mental health provider. To evaluate construct validity, an analysis of covariance was conducted to examine the relationship between the severity of anxiety, as measured by the final GAD scale, functional status scales, self-reported disability days, and physician visits. To establish the criterion validity of the tool, Spitzer et al. (2006) used various cutoff scores of the finalized GAD-7 to calculate sensitivity, specificity, predictive values, and likelihood ratios compared to the diagnosis provided by the mental health provider. The study also demonstrated excellent internal consistency of the GAD-7 (Cronbach's $\alpha = 0.92$) and good test-retest reliability.

The Patient Health Questionnaire (PHQ-9 and PHQ-2)

The PHQ-9 was developed by Kroenke et al. (2001) based on the PRIME-MD diagnostic instrument for common mental disorders (see Appendix B, Figure B2). Kroenke et al. (2001) conducted two studies between May 1997 and March 1999, the PHQ Primary Care Study and the PHQ Obstetrics and Gynecology (OB-GYN) Study. In each study, 3,000 adult patients

completed the PHQ and the Medical Outcomes Study Short-Form General Health Survey (SF-20) to assess functional health status across six domains before their medical appointments.

Patients were also asked to report the number of physical visits and disability days they experienced in the previous three months. The diagnostic accuracy of the PHQ was assessed by a mental health provider, blinded to the patients' PHQ results, who conducted telephone interviews with each subject 48 hours after completion. The test-retest reliability of the PHQ was also examined by grading the 9 PRIME-MD questions to assess DSM-IV symptoms using the same scoring options as the PHQ (Kroenke et al., 2001).

Kroenke et al. (2001) found that the PHQ-9 demonstrated excellent internal and test-retest reliability in both studies. A strong correlation (0.84) was noted between the PHQ-9 completed by the patient in the clinic and that administered via telephone interview by the mental health professional 48 hours later. Despite its success in diagnosing and assessing depressive disorders, Kroenke et al. (2001) emphasized the need for brevity in busy clinical environments. The research team examined two items from the PHQ-9, depressed mood and anhedonia, and created a valid and reliable tool for concisely evaluating depression, the PHQ-2 (Kroenke et al., 2003) (see Appendix B, Figure B3). Nevertheless, the PHQ-9 is preferred for the definitive diagnosis of depression and for evaluating treatment response (Kroenke et al., 2003).

Chart Audit Form

Chart reviews are essential for gathering data regarding quality management and patient satisfaction. This information reveals specific trends that can be submitted to regulatory agencies for evaluation and quality assurance (Melnyk & Fineout-Overholt, 2023). The project used a retrospective chart review conducted with an audit tool created by the co-investigators that received face validity (see Appendix F, Figure F1). This tool evaluated the charts of all women

who visited the project site for an annual well-woman exam from July 15, 2024, to January 15, 2025. It examined the completion rates of anxiety and depression screenings, the administration and completion of a PHQ-9 screening after a positive PHQ-2 result, and the presence of a documented referral from the medical provider to behavioral health services following a positive screening result.

To assess the impact of a positive screening result and patient referral on a completed behavioral health services assessment, the chart was reviewed for a visit note from the behavioral health specialist to verify whether a behavioral health specialist evaluated the patient. The tool accounts for various situations that may impact the behavioral health evaluation process, including cases where the patient is evaluated on the same day as their medical appointment, postponed appointments within four weeks of their medical visit, missed appointments, and no-shows. The data gathered from this retrospective chart review attested to the routine performance of anxiety and depression screenings during well-woman exams and the implications of a positive screen on access to behavioral health evaluations.

Outcome Measurement

Following the project's implementation, the effectiveness of the screening process was evaluated by considering the following questions: Did the completion of the GAD-7 and PHQ-2 occur for all women presenting for annual wellness care? If the patient's PHQ-2 screening yielded a positive result, was a PHQ-9 also completed? Was a documented referral to behavioral health initiated for positive screenings, and did the behavioral health specialist subsequently evaluate the patient? A logic model was crafted to illustrate the project's potential inputs, outputs, outcomes, and impacts (see Appendix E, Figure E1). The model emphasizes the interaction between the outcomes necessary to implement the screening practice change,

following the Ottawa Model of Research Use (Graham & Logan, 2004). Performing mental health screenings during annual well-woman exams can offer significant emotional support to patients, thereby fostering trust in the healthcare provider, aligning directly with the principles of the health promotion model (Pender, 1982). Referring a patient to behavioral health services demonstrates how healthcare professionals are integral to the patient's intrapersonal environment and can positively impact their lives (Pender, 1982).

Data Analysis Plan and Project Funding

The data collected underwent a statistical evaluation to determine the number of completed mental health screenings, referrals to behavioral health, and documented patient encounters with the behavioral health team. Intellectus™ statistical software was used to facilitate data storage and analysis of the results. Data analysis commenced in the spring of 2025 to determine the success of the piloted screening practice change, looking specifically at the number of screening tools completed, referrals to behavioral health, and completed patient encounters with a behavioral health specialist. Following data analysis, project dissemination shared the project's findings, assessed the evaluation questions, and proposed implementing this screening practice change across all women's health departments at the various FQHC locations.

This project did not receive any monetary funding. The main expenses arose from the time clinic staff and healthcare providers spent conducting patient screenings, documenting results in the EHR, interpreting the findings, and offering extra care to unscheduled patients for non-routine issues. The GAD-7 screening form is freely accessible online for use, copying, and distribution. However, there are costs associated with printing supplies for the forms, lamination materials, and whiteboard markers for patient use. Using laminated screenings can lead to savings compared to providing paper copies for each patient. The estimated direct and indirect

costs for implementing this project are further described via a project budget plan (see Appendix D, Figure D1).

Results

Descriptive Data

Six months after implementing the updated mental health screening process, a retrospective chart review identified 173 eligible individuals aged 18 and older from the project site who had annual well-woman exams between July 15, 2024, and January 15, 2025. The charts were analyzed using an audit tool developed by the co-investigators, examining demographics, completion rates of anxiety and depression screenings, appropriate referrals to behavioral health services, and evaluations by specialists (see Appendix F, Figure F1). Intellectus™ statistical software facilitated data storage and analysis results.

Patient Demographics

The demographic values analyzed included race, ethnicity, and insurance type (see Appendix G, Figure G1). The predominant race was White ($n = 96$, 55.49%), and the ethnic group was Hispanic/Latino ($n = 133$, 76.88%). Medicaid was the most frequently observed insurance category ($n = 72$, 41.62%). The ages of the women ranged from 20 to 63 years, with an average age of 36.

Screening Completion Rates

A review of the 173 eligible charts found that 80.3% of participants ($n = 139$) received at least one mental health screening. Over half of the participants received anxiety screening, with a documented GAD-7 score noted in the chart ($n = 99$, 57.23%). Additionally, 137 participants underwent depression screening using either the PHQ-2 ($n = 70$, 40.46%) or the PHQ-9 ($n = 11$, 6.366%). Among those screened for depression, 32.37% ($n = 56$) completed both screening tools.

Notably, more than half of all eligible participants received both anxiety and depression screening ($n = 97, 56.07\%$) (see Appendix G, Figure G2).

Positive Screening Results

A total of 139 participants underwent at least one mental health screening. Of these, 89 participants had no positive screenings (64.03%). In contrast, 42 participants had a positive anxiety screening (30.21%), and 16 participants had at least one positive depression screening (11.51%). A total of 8 participants had both a positive anxiety screening and a positive depression screening (5.76%) (see Appendix G, Figure G3). In total, 50 participants had positive screenings, necessitating a referral to behavioral health services.

Behavioral Health Referrals

Based on positive mental health screenings, 50 participants qualified for behavioral health referrals. A retrospective chart audit identified 54 participants eligible for these referrals, suggesting that four were evaluated for a referral despite not having positive screening results. Most eligible participants received a completed referral to behavioral health ($n = 21, 38.89\%$); however, 27.78% ($n = 15$) of eligible participants were offered a referral to a behavioral health specialist but declined. The remaining 33.33% ($n = 18$) of eligible participants did not have a documented referral noted in their chart, indicating no referral was given (see Appendix G, Figure G4).

Behavioral Health Evaluations

The women's health department initiated 36 referrals to behavioral health services, and 21 participants accepted an evaluation with an on-site behavioral health specialist. Notably, most of these evaluations were conducted on the same day as the participant's well-woman exam ($n = 15, 71.43\%$). Out of the remaining six visits, four participants (19.05%) scheduled an evaluation

but did not attend their appointment, one participant (4.76%) completed her evaluation within four weeks of her well-woman visit, and one participant (4.76%) neither scheduled nor attended a behavioral health evaluation (see Appendix G, Figure G5).

Clinical Significance and Sustainability

The outcomes of this project hold both clinical and statistical significance. Numerous clinical guidelines advocate for all women to be screened for anxiety and depression during their annual wellness exams with a valid and reliable screening tool (ACOG, 2023; USPSTF, 2023a; USPSTF, 2023b; WPSI, 2023). After introducing both anxiety and depression screenings in well-woman exams at the project site, data analysis showed that among the 21 participants who received behavioral health evaluations, 16 (76.19%) were referred solely based on positive anxiety screening results. For the other participants evaluated by a behavioral health specialist, two (9.52%) had positive screenings for both depression and anxiety, and one (4.46%) was assessed only for a positive depression screening. The last two participants (9.52%) were not evaluated for unspecified reasons.

The findings of this project reveal that the majority of women evaluated by a behavioral health specialist were identified based on a positive anxiety screening result. The results indicate that excluding anxiety screenings from well-woman exams at the project site would have left more than 75% of women with anxiety symptoms unrecognized and, consequently, without an evaluation by a behavioral health specialist during the chart audit time period. Notably, most patients seen by a behavioral health specialist were assessed on the same day as their well-woman appointment, highlighting interprofessional care collaboration and the project site's commitment to addressing mental health concerns (see Appendix G, Figure G6).

Focusing on internal evidence underscores the effectiveness of timely, integrated care collaboration among departments at the project site. The successful mental health screening protocol, current referral methods, onsite specialists, and GAD-7 form integration into the EHR make this practice change sustainable. These findings support the ongoing inclusion of both anxiety and depression screening during well-woman exams at the project site and throughout all clinic locations.

Discussion

Summary of Findings

The results of this project highlight the necessity of screening for anxiety and depression during annual well-woman exams. Furthermore, these findings emphasize the effectiveness of the FQHC's referral process and commitment to establishing a patient-centered medical home. In conclusion, screening for anxiety and depression enables women suffering from these conditions to receive clinical recognition and be referred to a behavioral health specialist. This ensures they receive further evaluation and personalized care tailored to their needs.

Strengths, Weaknesses, and Future Research Opportunities

Strengths

This project demonstrated several strengths and highlighted the importance of anxiety and depression screening during annual well-woman exams, as recommended by numerous clinical practice guidelines (ACOG, 2023; USPSTF, 2023a; USPSTF, 2023b; WPSI, 2023). The mental health screening tools, namely the GAD-7, PHQ-2, and PHQ-9, are valid and reliable instruments appropriate for screening anxiety and depression (Spitzer et al., 2006; Kroenke et al., 2001). Data collection via a retrospective chart audit and descriptive statistical analysis were appropriate, resulting in outcomes suitable for evaluation and quality assurance (Melnik &

Fineout-Overholt, 2023). The implementation of anxiety and depression screening showed high screening tool completion rates ($n = 139$, 80.34%), with 71.43% of behavioral health evaluations taking place on the same day as the participant's medical visit. This shows the project site's successful referral process and commitment to delivering prompt, comprehensive healthcare.

Weaknesses

The limitations of this project include high staff turnover rates, particularly among MAs responsible for administering the mental health screening tools. Additionally, the mental health screening protocol was explained only once and only to the staff present that day. The failure to reiterate the screening protocol throughout the project's duration and new MAs unfamiliarity with it could have significantly hindered its continued success. Furthermore, the participants' charts were analyzed only for the completion of anxiety and depression screenings on the day of their well-woman exam, which occurred during the six-month period in which the project took place. Additional visit notes were not reviewed; therefore, it was unknown if the participant had previously received mental health screenings that year. This oversight fails to recognize individuals who may not be due for annual anxiety and depression screening, as well as those who may have been screened in a different department, for instance, by a family practice provider.

Opportunities for Improvement and Future Research

Data analysis revealed that 20% of participants presenting for their well-woman exam at the project site between July 15, 2024, and January 15, 2025, received no mental health screening. This may be due to several factors, including insufficient communication of the newly implemented mental health screening process to the staff responsible for the screening. Regularly reiterating the mental health screening process to clinic staff monthly and specifically addressing

newly hired MAs might have improved screening completion rates. Furthermore, 20% of women who were not screened during their well-woman exams may have had previously documented anxiety and depression screenings within the year noted in their charts, which would still comply with nationally recommended mental health screening guidelines for women.

To ensure that the 20% accurately reflects the number of women lacking mental health screenings within the year, charts should be reviewed for screenings conducted during previous clinic visits in the year (ACOG, 2023; USPSTF, 2023a; USPSTF, 2023b; WPSI, 2023). To improve the screening process, the clinic could implement pop-up alerts for patients who require annual mental health screenings or ask patients to complete the screening forms during virtual check-ins. Mobile technology could enable patients to fill out self-reported screening tools before their visit or during check-in without disrupting the clinical workflow during their well-woman visit (Palakshappa et al., 2021). Automated pop-up alerts for overdue mental health screenings remove barriers associated with staff responsibilities for administering screenings and could also integrate directly with the EHR. This would reduce the risk of human error related to manually entering the patient's screening results into the chart, which may not accurately reflect the outcomes noted on the screening tool filled out by the patient (Palakshappa et al., 2021).

Future research should expand this mental health screening protocol to women's health departments in various clinics. Studies may integrate additional mental health screenings into well-woman exams, especially after initial anxiety and depression screenings and before treatment for suspected conditions. ACOG (2023) states that women are usually diagnosed with bipolar disorder between the ages of 18 and 30, aligning with many attending annual well-woman exams. ACOG (2023) advises that patients be screened for bipolar disorder before starting pharmacological treatments for anxiety and depression, using a reliable screening tool if

not done previously. This is crucial, as inappropriate medication could worsen mania in bipolar patients (ACOG, 2023). Further screenings for anxiety-related disorders such as OCD and post-traumatic stress disorder, along with evaluations for anxiety-inducing behaviors, including intimate partner violence (IPV) and adverse childhood experiences (ACE), may also be considered for future research opportunities (ACOG, 2023).

Conclusion

In summary, the findings from this project emphasize the need to screen women for anxiety and depression to identify mental health concerns and connect them to additional resources. Aligning with various clinical practice guidelines, integrating anxiety and depression screenings in wellness exams offers patients a valuable chance to receive holistic care that addresses both their physical health and mental well-being. The GAD-7 and PHQ-2/PHQ-9 are recognized as valid and reliable instruments for assessing anxiety and depression, accessible at no cost, and available in multiple languages. Ultimately, by incorporating anxiety and depression screenings into the well-woman exam, healthcare providers can ensure they deliver comprehensive, evidence-based care, allowing patients to benefit from high-quality medical services focused on both their physical and mental health.

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Appendix A

Evaluation and Synthesis Tables

Table A1
Evaluation Table for Quantitative Studies

Citation	Theoretical/Conceptual Framework	Design/Purpose	Sample/Setting	Variables	Measurement/Instrumentation	Data Analysis	Results/ Findings	Level of Evidence & Application to Practice
<p>Haightigan et al., (2021). Beyond biometrics: Including mental health screenings in annual wellness programs</p> <p>Country: United States</p> <p>Funding: The authors did not receive funding for the research, implementation of the project, or publication of the article</p> <p>Bias: None recognized</p>	<p><i>None stated; inferred the following:</i></p> <p>Health Promotion Model</p> <p>General Systems Theory</p> <p>W. Edwards Deming’s Plan-Do-Study-Act (PDSA) Cycle Framework</p>	<p>Design:</p> <p>Descriptive Correlational Study</p> <p>Purpose:</p> <p>Examine the association of mental and physical health risks collected during an annual worker physical wellness program</p>	<p>N= 236</p> <p>Sample Demographics:</p> <ul style="list-style-type: none"> • Mean Age: 38.5 years • Sex: Female (19%), Male (81%) • Marital Status: 57% married • Race: 73% White • Primary Job Role: 68.8% worked in production • Work Shift: 74.6% worked day shift • Education: 36.9% completed high school/General Educational Development test <p>Sampling: Self-selected convenience sampling</p> <p>Setting:</p> <p>Outpatient annual health fair</p> <p>Exclusion:</p> <ul style="list-style-type: none"> • Age <18 years • Inability to read/ understand English 	<p>IV1: Age Group IV2: Sex IV3: Race IV4: Martial Status IV5: Education IV6: Work Shift IV7: Smoking Status IV8: GHP IV9: Will this health fair improve your health? IV10: BMI IV11: Systolic BP IV12: Diastolic BP IV13: Total Cholesterol IV14: Fasting Glucose</p> <p>DV1: Anxiety (GAD-7 score) DV2: Depression (PHQ-2 score)</p> <p>Definitions:</p> <p>Age Group: Young adult (18-44 years) or older adult (>45 years)</p> <p>GHP: Excellent/very good, good, or fair Work Shift: Day or night shift</p>	<p>Tools:</p> <ul style="list-style-type: none"> • Research Developed Questionnaire • GAD-7 • PHQ-2 	<p>Statistical Tests Used:</p> <p>Descriptive statistics computed for all variables</p> <p>Data analyzed using frequencies, percentages, means, Pearson’s correlation coefficients and chi-square tests</p> <p>Analyses were conducted using two-tailed tests; $\alpha \leq 0.05$ was considered significant</p>	<p>DV1: Results:</p> <ul style="list-style-type: none"> • GAD-7 Sensitivity: 89%; • GAD-7 Specificity: 82%; • Cronbach’s alpha 0.79-0.91 (significant) • GAD-7 Score and BMI ($r = 0.222, p = 0.001$) • GAD-7 Score and Age ($r = 0.185, p = 0.005$) <p>Findings:</p> <ul style="list-style-type: none"> • Younger workers and those with BMI have increased GAD-7 scores • No significant relationship between biometrics (Systolic BP diastolic BP, total cholesterol, or fasting glucose), GHP ($p = 0.077$), work shift ($p = 0.754$), sex ($p = 0.976$) and GAD-7 scores <p>DV2: Results:</p> <ul style="list-style-type: none"> • PHQ-2 Sensitivity: 86% • PHQ-2 Specificity: 78% • Correlation coefficient: 0.92 • PHQ-2 Score and BMI ($r = 0.146, p = 0.034$) • PHQ-2 Score and Age ($r = -0.137, p = 0.37$) 	<p>LOE: IV</p> <p>Strengths:</p> <ul style="list-style-type: none"> • Identification of mental health concerns in the younger workforce • Worker disability, absenteeism and presenteeism can be positively impacted through early diagnosis and treatment • Use of GAD-7 and PHQ-2 <p>Limitations:</p> <ul style="list-style-type: none"> • Gender Bias: Most of the participants were male (80.9%) skewing sex relationship between GAD-7 and PHQ-2 • Convivence Sample/Population: Population was participating in a health centered event • Self-reported Data: Medical conditions, medications, and biometric screening results <p>Feasibility/Generalizability:</p> <ul style="list-style-type: none"> • Easily reproducible, generalizable to wide variety of patient populations <p>Application to Practice</p> <ul style="list-style-type: none"> • Screening leads to early diagnosis of mental health disorders, interventions,

Key: AHRQ Agency for Healthcare Research and Quality, ATDS-E Attitudes Towards Depression Screening-Employee, AUC Area Under the Curve, BH Behavioral Health, BMI Body Mass Index, BP Blood Pressure, DSM Diagnostic and Statistical Manual of Mental Disorders, DV Dependent Variable, EHR Electronic Health Record, EPDS Edinburg Perinatal Depression Scale, FQHC Federally Qualified Health Center, GAD-7 Generalized Anxiety Disorder 7-item scale, GAD-2 Generalized Anxiety Disorder 2-item scale, GAD-Q-IV Generalized Anxiety Disorder Questionnaire for DSM IV, GHP General Health Perception, IV Independent Variable, LOE Level of Evidence, OB/GYN Obstetrics and Gynecology, PHQ-2 Patient Health Questionnaire 2, PHQ-9 Patient Health Questionnaire 9, PDSA Plan-Do-Study-Act, QUADAS-2 Quality Assessment of Diagnostic Accuracy Studies 2, SR Systematic Review, USPSTF United States Preventative Services Task Force

			Attrition Rate: 31.4%				<p>Findings:</p> <ul style="list-style-type: none"> Younger workers and those with BMI have increased PHQ-2 scores No significant relationship between biometrics (Systolic BP diastolic BP, total cholesterol, or fasting glucose), GHP ($p = 0.654$), work shift ($p = 0.312$) sex ($p = 0.405$) and PHQ-2 scores 	possibly preventing long term mental health and biometric disorders <ul style="list-style-type: none"> In adults >18, females are more likely than males to have anxiety and depression
<p>Poleshuck et al., (2023). Predictors of referrals and depression outcomes among obstetrics and gynecology patients with positive depression screens</p> <p>Country: United States</p> <p>Funding: The authors did not receive funding for the research, implementation of the project, or publication of the article</p> <p>Bias: Researcher’s university affiliation with academic hospital setting</p>	<p><i>None stated; inferred the following:</i></p> <p>General Systems Theory</p> <p>Social Cognitive Theory</p>	<p>Design:</p> <p>Retrospective Cohort Study</p> <p>Purpose:</p> <p>Analyze how OB/GYN providers respond to, treat, and refer women with a positive depression screening Compare depression outcomes in response to the documented care plan at the time of the positive depression screen</p>	<p>N= 445</p> <p>Sample Demographics:</p> <ul style="list-style-type: none"> Mean Age: 35.5 years Sex: Female (100%) Race: White (46.5%), Black/other (40.2), Insurance: Government-subsidized plan (Medicare/Medicaid: 77%) or other Provider Type: Nurse practitioner/nurse (69.4%), physician (30.6%) <p>Setting:</p> <p>Urban, large, OB/GYN practice with a mental health team</p> <p>Exclusion:</p> <ul style="list-style-type: none"> Patients aged <18; PHQ-9 score <10; Visit to selected practice outside 1/1/2018-12/31/2019 <p>Attrition Rate: 0%</p>	<p>IV1: Age Group (18-40+)</p> <p>IV2: Race</p> <p>IV3: Payer Type</p> <p>IV4: Provider Type</p> <p>DV1: (Binary) Treatment change (1 if there were any of the following changes: antidepressant only, psychotherapy only, or antidepressant and psychotherapy) OR no treatment change (0)</p> <p>DV2: (Binary) Provider documented depression care plan (1 if the patient had experienced 50% or more reduction in PHQ 9 score within the 180-day period) OR otherwise (0)</p> <p>Definitions: Psychotherapy Referral: Documented referral to psychiatry Antidepressant Initiation: Prescription</p>	<p>Tool:</p> <ul style="list-style-type: none"> PHQ-9 	<p>Statistical Test Used:</p> <p>Multivariate Logistic Regression Models</p>	<p>DV1:</p> <ul style="list-style-type: none"> Patients with treatment change were ~4.5 years younger than those with no treatment change Treatment change patients were more likely to be seen by nurse practitioner/nurse than a physician at the index visit <p>DV2:</p> <ul style="list-style-type: none"> Documented depression care plan less likely in patients 40+ (8.1% compared to 17.3% in patients 18-29) Patients seen by nurse practitioner/nurse were more likely to have a documented depression care plan (18.1%) than patients seen by physicians (5.9%) <p>Findings:</p> <ul style="list-style-type: none"> All DV yielded statistically significant results except DV4 (evaluation by BH) Systematic depression screening resulted in higher rates of depression screening 	<p>LOE: IV</p> <p>Strengths:</p> <ul style="list-style-type: none"> Increased representation of Black patients (44%) <p>Limitations:</p> <ul style="list-style-type: none"> Unknown if prescription was filled/initiated Unknown if patient had previous treatment change or outside care Substantial variability in PHQ-9 follow-up timing Lack of pregnant patients DC during COVID-19 Limited generalizability <p>Feasibility/Generalizability:</p> <ul style="list-style-type: none"> Incorporating depression care into OB/GYN settings is feasible, effective and acceptable <p>Application to Practice:</p> <ul style="list-style-type: none"> Utilization of an EHR workflow to better facilitate a documented depression care plan immediately following the screening Utilizing support staff to coordinate/ additional training for documented depression care plan Easier access to resources to formulate a depression care plan for providers

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				for antidepressant sent to pharmacy			<ul style="list-style-type: none"> • Detection of depression increased after implementation 	<ul style="list-style-type: none"> • Purpose of many OB/GYN practice is to serve perinatal patients, neglects the relevance of mental health concerns/importance of screening those who are not pregnant or of reproductive age
<p>Pfoh et al., (2020). The impact of systematic depression screening in primary care on depression identification and treatment in a large health care system: A cohort study</p> <p>Country: United States</p> <p>Funding: The authors did not receive funding for the research, implementation of the project, or publication of the article</p> <p>Bias: None recognized</p>	<p><i>None stated; inferred the following:</i></p> <p>Health Promotion Model</p> <p>General Systems Theory</p> <p>W. Edwards Deming's Plan-Do-Study-Act (PDSA) Cycle Framework</p> <p>Social Cognitive Theory</p>	<p>Design:</p> <p>Retrospective Pre-Post Study</p> <p>Purpose:</p> <p>Assess the impact of integrating systematic depression screening with clinical decision support on identifying and treating patients with depression</p>	<p>N= 259,411</p> <p>Sample Demographics:</p> <ul style="list-style-type: none"> • Mean Age: 55.1 years • Sex: Female (56.4%), Male (43.6) • Race: White (83.7%), Black/other (16.3), • Marital Status: Married (59.9%) • Insurance: Privately insured (62.0%) <p>Setting:</p> <p>37 internal/family medicine clinics in a large health system in Northeast Ohio</p> <p>Exclusion:</p> <p>Adults diagnosed with depression in 2015 or prior to their initial visit in 2016</p> <p>Attrition Rate: N/A</p>	<p>IV: Mandatory PHQ screening (Implemented or not)</p> <p>DV1: At least one treatment</p> <p>DV2: Antidepressant medication</p> <p>DV3: Referral to BH</p> <p>DV4: Evaluation by BH</p> <p>DV5: More than one treatment</p> <p>Definitions:</p> <p>Treatment: Receipt of an antidepressant medication prescription, referral to BH or evaluation by a BH specialist within 90 days</p> <p>BH: Psychologist, psychiatrist or BH social worker</p>	<p>Tools:</p> <ul style="list-style-type: none"> • PHQ (PHQ-2 and PHQ-9) • The Knowledge Program (Clinical Decision Support): Enables systematic collection of patient-entered data 	<p>Statistical Tests Used:</p> <p>Multilevel Logistic Regression</p>	<p>DV1: 4.4% increase in participants receiving at least one treatment (p value <0.001)</p> <p>DV2: 3.2% increase in participants receiving antidepressant medication (p value <0.001)</p> <p>DV3: 4% increase in participants being referred to BH (p value <0.001)</p> <p>DV4: No significant difference in participants being evaluated by BH (p value = 0.237)</p> <p>DV5: 3% increase in participants receiving more than one treatment (p value <0.001)</p> <p>Findings:</p> <ul style="list-style-type: none"> • All DV yielded statistically significant results except DV4 (evaluation by BH) • Systematic depression screening resulted in higher rates of depression screening • The rate of depression diagnosis increased by 1.2% immediately after systematic screening • Patients with diagnosed depression who received treatment within 90 days increased from 64% to 69% 	<p>LOE: IV</p> <p>Strengths:</p> <ul style="list-style-type: none"> • Extremely large sample size • Use of a valid and reliable screening tool (PHQ) • Consistent measure of treatment before and after implementation of systematic screening <p>Limitations:</p> <ul style="list-style-type: none"> • Variability in administration of PHQ • Percentage of visits with a PHQ screen may have been underestimated, only primary care screening data was collected, although screening did occur during specialty visits • Possible misdiagnosis of depression, underestimating treatment only included treatment that occurred within 90 days of a visit <p>Feasibility/Generalizability: Limited</p> <ul style="list-style-type: none"> • Only identified BH visits within single health system, excluding outside visits • Conducted across multiple healthcare centers with a large sample size, may not be feasible in individual, small practices <p>Application to Practice:</p> <ul style="list-style-type: none"> • Implementing systematic screening for mental health conditions within a healthcare system will lead to increased rates of screenings

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							after implementation of systematic screening	completed, diagnoses made, and patients offered treatment <ul style="list-style-type: none"> Implementing mental health screening should improve treatment rates and referrals to BH
<p>Lieb et al., (2020). Adding perinatal anxiety screening to depression screening: Is it worth it?</p> <p>Country: United States</p> <p>Funding: The authors did not receive funding for the research, implementation of the project, or publication of the article</p> <p>Bias: None recognized</p>	<p><i>None stated; inferred the following:</i></p> <p>Health Promotion Model</p> <p>General Systems Theory</p> <p>W. Edwards Deming's Plan-Do-Study-Act (PDSA) Cycle Framework</p>	<p>Design: Cohort Study Purpose: Investigate if adding perinatal anxiety screening to current depression screening improves identification of women in need of mental health services</p>	<p>N= 225 women n= 100 (PHQ-2) n= 125 (PHQ-2 + GAD-2)</p> <p>Sample Demographics:</p> <ul style="list-style-type: none"> Mean Age: ~29 years BMI: ~30.9 kg/m Gestational Age at Visit: ~26.2 weeks Race: Hispanic (43%), Not Hispanic (33%), Unknown (~30%) Insurance: Private (23%), Public (77%) History of Mental Health Disorder: No (~83%), Yes (~18%) High Risk Pregnancy: No (~67%), Yes (~34%) Delivery Type: Vaginal (~58%), Cesarean Section (~43%) Complications in Pregnancy: Hypertension (8%), Diabetes mellitus (~10%), Other (~14%), Hypertension+Diabetes mellitus (4%), Hypertension+Other (~2%), Diabetes mellitus+Other (~4%), Hypertension+Diabetes mellitus+Other (2%), None (~60%) Complications During Delivery: Hypertension (4%), Hemorrhage (~3%), Shoulder dystocia (2%), Other (8%), Hypertension+Other (1%), None (~83%) 	<p>IV: Screening tool(s) utilized (PHQ-2 or PHQ-2+GAD2)</p> <p>DV1: Completed Screening (Completed or not)</p> <p>DV2: Screening Result (Positive or not)</p> <p>DV3: Referral Rate (Referred or not)</p>	<p>Tools:</p> <ul style="list-style-type: none"> PHQ-2 GAD-2 	<p>Statistical Test Used:</p> <p>Multivariate Logistic Regression Models</p>	<p>DV1: Completed depression screening rates were higher in the PHQ-2 only group (51% compared to 32% [PHQ-2+GAD-2 group]; p<0.05)</p> <p>DV2: No significant difference between groups in positive screenings</p> <p>DV3: No significant difference in referral rates between the two groups (PHQ-2 only vs. PHQ-2+GAD-2 group)</p> <p>Findings:</p> <ul style="list-style-type: none"> Higher rate of positive GAD-2 screenings among women with a history of substance abuse Within the PHQ-2+GAD-2 group, more referrals were given to women with a history of mental health disorders and substance use, and with a higher BMI Within the PHQ-2+GAD-2 group, women with higher parity or had an infant in the neonatal intensive care unit (NICU) were less likely to get a referral 	<p>LOE: IV</p> <p>Strengths:</p> <ul style="list-style-type: none"> Both PHQ-2 and GAD-2 screening are valid and reliable screening instruments <p>Limitations:</p> <ul style="list-style-type: none"> Small enrollment size Lower than anticipated screening rate and lack of patients receiving both screenings Reduced staffing in the social work department of the OB/GYN practice Inability to report on demographic and racial disparities due to lack of patient information <p>Feasibility/Generalizability:</p> <ul style="list-style-type: none"> Conducting systematic depression and anxiety screening feasible and effective in identifying mental health conditions in multiple populations outside of OB/GYN <p>Application to Practice:</p> <ul style="list-style-type: none"> Screening for anxiety disorders in addition to depressive disorders may increase referral rates to mental health providers who can diagnose conditions and offer appropriate treatment Screening for anxiety disorders in practice can increase referral rates for those with mental health concerns

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			<ul style="list-style-type: none"> ● Parity: 0 (~43%), >1 (~58%) ● History of Substance Use: No (~96%), Yes (~5%) ● Infant in the neonatal intensive care unit: No (~87%), Yes (~14%) <p>Setting:</p> <p>Large FQHC OB/GYN practice</p> <p>Exclusion:</p> <p>Pregnant women who did not have a visit during the 24w0d- 28w6d</p> <p>Attrition Rate: 38.3%</p>					
<p>Standeven et al., 2023. Reduction of anxiety symptoms among women within a collaborative care model and women’s health settings</p> <p>Country: United States</p> <p>Funding: No specific grant from any funding agency, commercial or not-for-profit sectors</p> <p>Bias: Association with Concert Health, America’s largest behavioral health medical group, and the use of their collaborative care model</p>	<p><i>None stated; inferred the following:</i></p> <p>Health Promotion Model</p> <p>General Systems Theory</p> <p>Social Cognitive Theory</p>	<p>Design: Retrospective Cohort Study</p> <p>Purpose: To evaluate if a collaborative care model would improve GAD-7 scores for women with preexisting mental health disorders</p>	<p>N= 219 women</p> <p>n1= 72 (Phoenix) n2= 113 (Connecticut) n3= 34 (New York)</p> <p>Sample Demographics:</p> <ul style="list-style-type: none"> ● Race: Caucasian New York (91.5%), Connecticut (75.9%), Arizona (72.9%) ● Median Income: New York (\$82,816), Connecticut (\$131,130), Arizona (\$57,459) ● Population Living Below Poverty Level: New York (6%), Connecticut (3.4%), Arizona (18%) <p>Setting:</p> <p>Three women’s behavioral healthcare centers</p>	<p>IV1: Primary diagnosis (Anxiety Disorder, Mood Disorders, Adjustment Disorder/Other Disorders)</p> <p>IV2: Time between GAD-7 screenings (initial screening score and discharge score)</p> <p>IV3: (Binary) Patient taking psychotropic medications (1) or not (0)</p> <p>DV: GAD-7 score</p>	<p>Tools:</p> <ul style="list-style-type: none"> ● GAD-7 	<p>Statistical Test Used:</p> <ul style="list-style-type: none"> ● ANOVA ● Correlational Analyses ● Paired Student’s t-test ● Linear Regression Models 	<p>DV and IV1:</p> <ul style="list-style-type: none"> ● Significant improvement in GAD-7 scores for all groups of preexisting disorders (anxiety, mood, adjustment/other) <p>DV and IV2:</p> <ul style="list-style-type: none"> ● At the beginning of the study, most of the population (n= 150) had a moderate to severe GAD-7 score ● At the end of the study, most of the population (n=147) had minimal to moderate GAD-7 scores ● Majority of anxiety scores reduced within 90 days of collaborative care treatment (p<0.001) <p>DV and IV3:</p> <ul style="list-style-type: none"> ● Positive association between time between scores and patients on 	<p>LOE: IV</p> <p>Strengths:</p> <ul style="list-style-type: none"> ● Per the researchers, no other studies have examined the value of time-limited collaborative care treatment on anxiety symptoms nor among women’s health settings <p>Limitations:</p> <ul style="list-style-type: none"> ● No control group (that did not receive care) (due to ethical standards; inability to withhold treatment for admitted participants) ● Pregnancy status: Not recorded, limited assessment of whether pregnant or postpartum women with anxiety would benefit from collaborative care treatment ● COVID-19 pandemic: Began shortly after initiation of the study; possible spikes in anxiety due to the pandemic, limiting generalizability to post-pandemic populations

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			<p>Exclusion:</p> <p>Women missing data at the predictor level (data required for participation in the study) and outliers</p> <p>Attrition Rate: 38.3%</p>				<p>psychotropic medications (p <0.001)</p> <ul style="list-style-type: none"> • The longer an individuals in the program, the more likely they were to be on psychotropic medications 	<p>Feasibility/Generalizability:</p> <ul style="list-style-type: none"> • Easily reproducible with standard, valid and reliable tools. Limited generalizability applies more to care clinics with behavioral health components/access to care. Study only including women’s health settings, excluded demographics (age, race, educational level or socioeconomic status) <p>Application to Practice:</p> <ul style="list-style-type: none"> • Collaborative care can be useful in women’s health practices to reduce anxiety symptoms and GAD-7 score
<p>Blackstone et al., 2022. Improving depression screening in primary care: A quality improvement initiative</p> <p>Country: United States</p> <p>Funding: The authors did not receive funding for the research, implementation of the project, or publication of the article</p> <p>Bias: None Recognized</p>	<p>W. Edwards Deming’s Plan-Do-Study-Act (PDSA) Cycle Framework</p> <p><i>Inferred the following:</i></p> <p>Theory of Change Model</p>	<p>Design:</p> <p>Quality improvement project with PDSA</p> <p>Purpose:</p> <p>Address the under recognition of adult depressive symptoms in the United States To improve screening rates by with a universal screening tool and screening process, automating EHR workflow, educating providers and developing objective criteria and processes for</p>	<p>N= 23,745</p> <p>Sample Demographics:</p> <ul style="list-style-type: none"> • Sex: Female (64%), Male (36%) • Race: Non-white (32%), White (68%) • Age: 18-44 (40%), 45-64 (34%), 65-84 (24%), 85+ (2.5%) [Mean age not reported] • Telemedicine Visit: 9.8% • Hypertension: No (73%), Yes (27%) • Diabetes: No (78%), Yes (22%) • Cancer: No (99%), Yes (1%) • Depression: No (79%), Yes (21%) • Anxiety: No (80%), Yes (20%) <p>Setting:</p> <p>Family medicine department in Virginia at an academic medical center</p>	<p>IV1: Age Group (18-44, 45-64, 65-84, 85+)</p> <p>IV2: Race (White or not white)</p> <p>IV3: Visit Month (September 2020, October 2020, November/December 2020, February 2021)</p> <p>IV4: Sex (Male or female)</p> <p>DV: Patient’s depression screening status (up to date OR overdue)</p>	<p>Tools:</p> <ul style="list-style-type: none"> • PHQ-2 • PDSA: used to push quality improvement initiatives 	<p>Statistical Test Used:</p> <p>Multivariate Logistic Regression Models</p>	<p>DV and IV1:</p> <ul style="list-style-type: none"> • 65–84-year-old age group had the greatest improvement in up-to-date screening status <p>DV and IV2:</p> <ul style="list-style-type: none"> • No significant difference in up-to-date screening status between white and non-white patients <p>DV and IV3:</p> <ul style="list-style-type: none"> • As PDSA cycles were conducted, the proportion of up-to-date depression screenings increased <p>DV and IV4:</p> <ul style="list-style-type: none"> • No significant difference in up-to-date screening status between males and females throughout the study <p>Findings:</p> <ul style="list-style-type: none"> • Increase in depression screening, with a departmental improvement of 22% • Patients seen via telemedicine were less 	<p>LOE: VI</p> <p>Strengths:</p> <ul style="list-style-type: none"> • Large sample size • No identified conflict of interest • Use of valid and reliable screening and quality improvement tools <p>Limitations:</p> <ul style="list-style-type: none"> • Screening results susceptible to human error and inaccuracies in human in data collection (screenings completed on paper and entered into the EHR by MA/provider) • Exclusion of patients speaking languages other than English or Spanish • No follow-up for those who screen positive for depression to ensure connection to mental health services/treatment received <p>Feasibility/Generalizability:</p> <ul style="list-style-type: none"> • Easily reproducible due to the well documented PDSA cycles. Limited generalization due to exclusion of individuals speaking languages other than English or Spanish

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		referral and data monitoring	<p>Exclusion:</p> <p>Patients speaking a language other than English or Spanish</p> <p>Attrition Rate: N/A</p>				likely to be up-to-date on screening	<p>Application To Practice:</p> <ul style="list-style-type: none"> Applicable to other health care practice settings given the success in a broad family practice setting. Reminders and continued team engagement are critical for quality improvement. Feasible initiatives can be implemented into existing processes in healthcare (online/pre-visit screening)
<p>Pilipenko & Vivar-Ramon. (2023). Depression screening perceptions and practices in a primary care clinic: A mixed-methods study</p> <p>Country: United States</p> <p>Funding: The study was supported by the Primary Care Faculty Development Mini-Grant award, awarded by the Columbia University Irving Medical Center</p> <p>Bias: None Recognized</p>	<p><i>None stated; inferred the following:</i></p> <p>Theory of Change Model</p> <p>Cognitive Workflow Model</p>	<p>Design:</p> <p>Mixed method study (Assumed to be a quasi-experimental research design)</p> <p>Purpose:</p> <p>To expand the understanding of beliefs and practices of depression symptom screening among healthcare providers working in primary care</p>	<p>N= 36</p> <p>Sample Demographics:</p> <ul style="list-style-type: none"> Sex: Male (16.7%), Female (83.3%) Clinical Role: Medical Assistant (13.9%), Resident Physician (30.6%), Attending Physicians/Nurse Practitioners (30.6%), Support Staff/Other (15%) Employee Status: New (30.6%), Long-standing (69.4%) Received PHQ Training? Yes (52.8%), No (47.2%) <p>Sampling:</p> <p>Convience sampling to capture all employees that issue the PHQ-2/PHQ-9 in the clinic (Residents, faculty, nurses, NPs, etc.)</p> <p>Setting:</p> <p>Community health primary care clinic in a medically underserved area</p> <p>Exclusion:</p> <p>Providers with limited involvement in depression screening</p>	<p>IV: ATDS-E score</p> <p>DV1: Competence (of depression screening)</p> <p>DV2: Importance (depression screening)</p> <p>DV3: Barriers (to depression screening)</p>	<p>Tools:</p> <ul style="list-style-type: none"> ATDS-E (<i>Quantitative Tool</i>): Tool created by researchers to assess importance of barriers to, and competence of depression screening Self-Report Survey (<i>Qualitative Tool</i>): Gender-identity, role at the clinic, perceived length of employment 	<p>Statistical Tests Used:</p> <p>Kolmogorov-Smirnov (Assessment of Normality)</p> <p>Pearson Product-Moment Correlation</p> <p>Independent-Samples t-test</p>	<p>Quantitative Results:</p> <p>DV1:</p> <ul style="list-style-type: none"> Participants who entered results into the EHR had significantly greater scores for competence Those who considered depression screening had greater competence scores <p>DV2:</p> <ul style="list-style-type: none"> New employee scored with greater importance compared to long-standing employees <p>DV3:</p> <ul style="list-style-type: none"> Participants actively assisting patients with depression screening had significantly higher scores for barriers <p>DV1 & DV2:</p> <ul style="list-style-type: none"> Strong correlation; those who felt competent in depression screening recognized the importance of the screening <p>DV3 and DV1/DV2:</p> <ul style="list-style-type: none"> No correlation found between identified barriers to screening and competence or importance of screening <p>Qualitative Results:</p>	<p>LOE: III</p> <p>Strengths:</p> <ul style="list-style-type: none"> Innovative research: Limited research on perceptions of depression screening in primary care Highlights the importance of improved understanding of depression screening in primary care <p>Limitations:</p> <ul style="list-style-type: none"> Logistic barriers to self-completion of the screening tools Small sample size dictated by the chosen setting (few primary care employees/providers) Lack of validation for the ATDS-E Sample was heterogeneous in terms of professional training and duties Only examined perceptions and did not directly assess performance or competence ATDS-E is only available in English <p>Feasibility/Generalizability:</p> <ul style="list-style-type: none"> Not easily replicable due to the creation of the custom scoring scale (ATDS-E) used in the study. Small sample size and use of the custom scoring scale reduces generalizability <p>Application to Practice:</p> <ul style="list-style-type: none"> Applicable to other health care practice settings given the success of measuring staff perception of depression screening

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			Attrition Rate: 21.7%				<ul style="list-style-type: none"> • Participants had low rates of training (52.8%) • A high percentage (88.9%) used the screening tools in their routine clinical workflow, but most screened only on a case-by-case basis • Administration and delegation of screening depended on perceived clinical relevance, risk factors, and time constraints • Patients had mixed opinions about the purpose of the Screener, frequency of administration, and the accuracy of the Spanish version of the tool • Participants had concerns about patient cooperation, time constraints, and workflow inefficiencies related to screening 	
<p>Nelson et al., 2020. Screening for anxiety in adolescent and adult women: Systematic review for the Women’s Preventive Services Initiative</p> <p>Country: United States</p> <p>Funding: The authors did not receive funding for the research, implementation of the project, or publication of the article (conflicts of interest/funding may exist within the</p>	<p><i>None stated; inferred the following:</i></p> <p>General Systems Theory</p> <p>Theory of Change Model</p>	<p>Design:</p> <p>SR of studies (diagnostic accuracy studies, randomized control trials, prospective cohort studies, case-control studies and SR) from 1996 to 2019</p> <p>Purpose:</p> <p>To evaluate the effectiveness, benefits, and harms of screening women for</p>	<p>N= 35</p> <p>n1= 0 (articles on effectiveness of screening for anxiety) n2= 35 (articles on accuracy of anxiety screening methods) n3= 0 (articles on the harms of screening for anxiety)</p> <p>Sample Demographics:</p> <ul style="list-style-type: none"> • Sample Population: Women (+pregnant/postpartum women) aged 13+ without current anxiety disorders • Relevance to key questions: Effectiveness of screening for anxiety, accuracy of anxiety screening methods, harms of screening for anxiety 	<p>IV: Anxiety Screening</p> <p>DV1: Effectiveness of screening for anxiety DV2: Accuracy of anxiety screening methods DV3: Harms of screening for anxiety</p> <p>Definitions:</p> <ul style="list-style-type: none"> • Anxiety disorder(s): Several related conditions characterized by excessive, uncontrollable worry 	<p>Data Collection:</p> <ul style="list-style-type: none"> • Studies identified through searches in Ovid MEDLINE, Cochrane Central Register of Controlled Trials, and Cochrane Data Base of Systematic Reviews and secondary referencing • Articles selected based on inclusion criteria pre-specified by PICOT components • Each eligible full text article was independently 	<p>GAD Screening (GAD-7/GAD-2/GAD-Q-IV):</p> <ul style="list-style-type: none"> • Sensitivity: 70-97% • Specificities: 50-89% • AUC: 0.77-0.94 (using cutoff point of 10) <p>Qualitative Synthesis/Article Selection:</p> <ul style="list-style-type: none"> • Predefined criteria was used to assess the quality of the selected studies, rating them as “good,” “fair,” or “poor” • Critical appraisal criteria 	<p>DV1 & DV3:</p> <p>Results:</p> <ul style="list-style-type: none"> • 2239 abstracts and 320 full text articles were reviewed <p>Findings:</p> <ul style="list-style-type: none"> • No studies directly evaluated effectiveness or harms of screening <p>DV2:</p> <p>Results:</p> <ul style="list-style-type: none"> • 33 studies and 2 SR that included 171 studies evaluating 27 clinician or self-administered anxiety screening tools were reviewed <p>Findings:</p> <ul style="list-style-type: none"> • Accuracy varied by screening method/tool; several tools had moderate to good discriminatory 	<p>LOE: I</p> <p>Strengths:</p> <ul style="list-style-type: none"> • Included studies on pregnant/postpartum women • Inclusion of grey literature <p>Limitations:</p> <ul style="list-style-type: none"> • Lack of statistical meta-analysis, • Inclusion of studies >5 years old • Studies included varied in size/reference standards/ populations <p>Feasibility/ Generalizability:</p> <ul style="list-style-type: none"> • Feasible due to varying demographics • Applicable to identifying anxiety disorders presenting for a wellness exam • Generalizable to various practices/populations

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<p>individual articles reviewed)</p> <p>Bias: None reported; Bias may exist within the research articles selected for review</p>		<p>anxiety disorders</p> <p>Assess the accuracy of existing screening tools</p>	<p>Setting:</p> <p>Oregon Health and Science University</p> <p>Exclusion:</p> <p><i>Article Characteristics:</i></p> <ul style="list-style-type: none"> • Case reports, cost effectiveness studies, modeling studies • Articles lacking abstracts • Background information only • Addresses contextual question (not key question) • Ineligible population, intervention, outcome, comparison, study design for key question • Not a research study • Outdated research (<1996) • Studies enrolling <50% women • Participants <13 years old • Specific mental health conditions outside of generalized anxiety disorder or anxiety not defined yet <p>Attrition Rate: 98.4%</p>		<p>reviewed by two investigators based on the pre specified eligibility criteria</p> <ul style="list-style-type: none"> • Selected studies were based on relevancy and strength of the methodology • Disagreements regarding inclusion of studies were resolved by discussion and consensus involving a third reviewer 	<p>for diagnostic accuracy of screening tests: USPSTF methods, similar to QUADAS-2</p> <ul style="list-style-type: none"> • AHRQ Methods Guide (Strength of Evidence) • Applicability (estimated by examining the characteristics of the patient populations, the sample size the studies, clinical settings, and clinical relevance of the screening approach) • No statistical meta-analyses were conducted due to methodological and clinical heterogeneity 	<p>accuracy in identifying anxiety in women</p> <ul style="list-style-type: none"> • Diagnostic accuracy measures were determined by comparing scores against reference standards that included clinical diagnosis using DSM criteria • Brief instruments were as effective in identifying anxiety disorders as longer instruments 	<p>Application to Practice:</p> <ul style="list-style-type: none"> • GAD screening tools are highly sensitive and specific, and appropriate for use in assessing for anxiety in women • No harms are associated with anxiety screening • The GAD-2 is as efficient for identifying anxiety as the GAD-7, and its use may be particularly useful in decreasing time spent screening in busy primary care settings
<p>Johnson et al. (2021). Systematic screening for perinatal mood and anxiety disorders to promote onsite mental health consultations: A quality improvement report.</p> <p>Country: United States</p> <p>Funding:</p>	<p><i>None stated; inferred the following:</i></p> <p>General Systems Theory</p> <p>Theory of Change Model</p> <p>Cognitive Workflow Model</p>	<p>Design:</p> <p>Quality improvement project with pre-post design</p> <p>Purpose:</p> <p>To implement systematic screening during pregnancy and postpartum</p>	<p>N(pre): 821 N(post): 428</p> <p>Attrition Rate (pre-post): 47.8%</p> <p>Sample:</p> <p>All pregnant women through 8 weeks postpartum receiving care at the practice</p> <p>Sample Demographics:</p>	<p>IV: Systematic Mental Health Screening</p> <p>DV1: Overall perinatal mood and anxiety disorder screening completion rates</p> <p>DV2: PHQ screening at intake completion rates</p> <p>DV3: EPDS screening at 28-30 weeks' gestation completion rates</p>	<p>Tools:</p> <ul style="list-style-type: none"> • PHQ-9 • EPDS <p>Data Collection:</p> <ul style="list-style-type: none"> • Practice EHR (to track completed screenings and onsite mental health consultations) • Online survey platform (distribution and collection of 	<p>Statistical Tests Used:</p> <p>Fischer's Exact test with statistical significance set at <i>P</i> less than .05 (percentage change calculation)</p> <p>Comparison of proportions of sample populations with desired results pre and post</p>	<p>DV1:</p> <ul style="list-style-type: none"> • Overall screening rates were significantly increased (<i>p</i> = < 0.001) <p>DV2:</p> <ul style="list-style-type: none"> • 39.1% increase in intake PHQ-9 screening completion post-implementation <p>DV3:</p> <ul style="list-style-type: none"> • 32.7% increase in EPDS screening completion at 28-30 weeks' gestation post-implementation 	<p>LOE: VI</p> <p>Strengths:</p> <ul style="list-style-type: none"> • Relationship with postpartum wellness decreasing costs associated with on-site mental health consultation • burden on perinatal providers; timely access to on-site mental health consultation • Buy-in from medical assistants and front desk staff • Facilitation of screening did not extend the overall length of visits more than 5 minutes <p>Limitations:</p>

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<p>The authors did not receive funding for the research, implementation of the project, or publication of the article</p> <p>Bias: OBGYN practice's desire to maintain a relationship with a strong postpartum wellness center, resulting in increased referrals</p>		<p>To identify at-risk women who would benefit from an on-site mental health consultation</p> <p>Provide maternal mental health care options</p> <p>Improve provider satisfaction with screening and reduce burden on perinatal care providers</p>	<p>Site serves predominately white, privately insured patients</p> <p>Setting:</p> <p>Perinatal and gynecologic care center in Colorado with a partnership with a local postpartum wellness center</p> <p>Exclusion:</p> <p>Women >8 weeks postpartum and those who are not pregnant</p>	<p>DV4: EPDS postpartum screening completion rate</p> <p>DV5: On-site mental health consultation attendance rates</p> <p>DV6: Healthcare provider satisfaction (feedback surveys)</p> <p>Definitions:</p> <p><i>Mental health screening tools:</i> PHQ-9 and EPDS</p> <p><i>Perinatal care providers:</i> Certified Nurse Midwife, Nurse Practitioner and OB/GYN Physician</p>	<p>pre/post provider surveys</p>	<p>implementation for each outcome</p>	<p>DV4:</p> <ul style="list-style-type: none"> • No change EPDS postpartum completion screening rate post-implementation <p>DV5:</p> <ul style="list-style-type: none"> • 8% increase in onsite mental health consultation attendance post-implementation ($p = < 0.001$) <p>DV6:</p> <ul style="list-style-type: none"> • 100% satisfied with screening post-implementation • 100% indicated systematic screening added 5 minutes or less to office visits 	<ul style="list-style-type: none"> • Sample size decrease in post-implementation phase due to the loss of a provider and movement to a new facility • Assistant staff turnover as a barrier to implementing systematic screening <p>Feasibility/ Generalizability:</p> <ul style="list-style-type: none"> • Ease of facilitating on-site mental health consultation in practices with on-site BH • Limited generalizability due to pre-existing connection with postpartum/mental health wellness centers (difficult in practices without on-site BH services) <p>Application to Practice:</p> <ul style="list-style-type: none"> • Applicable to various OBGYN practices, reproducible to ensure evidenced based practice
<p>Salinas et al. (2023). Implementing the evidence: Routine screening for depression and anxiety in primary care</p> <p>Country: United States</p> <p>Funding: The authors did not receive funding for the research, implementation of the project, or publication of the article</p> <p>Bias: None Listed</p>	<p><i>None stated; inferred the following:</i></p> <p>Theory of Change Model</p> <p>Cognitive Workflow Model</p> <p>Health Promotion Model</p> <p>General Systems Theory</p>	<p>Design: Evidenced based practice implementation and evaluation</p> <p>Purpose: Identification of patients requiring education, counseling and medical evaluation/medication therapy for positive depression and/or anxiety screenings</p> <p>To implement evidence-based guidelines for screening and management of college-aged</p>	<p>N= 366</p> <p>Sample Demographics:</p> <ul style="list-style-type: none"> • Age: 17-50 years • Sex: Male (24.31%), Female (75.68) <p>Setting/Time Period: Two student health centers at a university in South Texas; study occurred over 3 months</p> <p>Exclusion: Patients who completed only one of the two screening tools were ineligible for participation</p> <p>Attrition: 62.1%</p>	<p>IV1: GAD-7 Score</p> <p>IV2: PHQ-9 Score</p> <p>DV1: Education</p> <p>DV2: Counseling</p> <p>DV3: Medical Evaluation/Medication Therapy</p> <p>Definitions:</p> <ul style="list-style-type: none"> • Education: Educational information and resources on anxiety and depression disorders • Counseling: Referral to counselling center • Medical evaluation/ Medication therapy: Treatment based on an algorithm; 	<p>Tools:</p> <ul style="list-style-type: none"> • GAD-7 • PHQ-9 • <i>Researcher developed scoring system</i> <p>GAD-7 Scoring System:</p> <ul style="list-style-type: none"> • If GAD-7 >3 and <5: Education • If GAD-7 >5 and <7: Counseling • If GAD >10: Medical evaluation/ Medication therapy <p>PHQ-9 Scoring System:</p> <ul style="list-style-type: none"> • If PHQ-9 >3 and <10: Education 	<p>No specific statistical tests were mentioned</p> <p>Data Analysis:</p> <p>Proportional Analysis: Population that met the criteria for education, counseling and medical evaluation/medication therapy based on GAD-7 and PHQ-9 scores</p>	<p>DV1 and IV1:</p> <ul style="list-style-type: none"> • 76% of patients met criteria to receive education based on GAD-7 score • 99.7% of eligible patients actually received education <p>DV1 and IV2:</p> <ul style="list-style-type: none"> • 76% of patients met criteria to receive education based on PHQ-9 score • 99.7% received education <p>DV2 and IV 1:</p> <ul style="list-style-type: none"> • 179 patients out of the total population (n=366, 49%) met criteria to receive counselling based on GAD-7 score • 121 patients out of the 179 eligible patients (68%) were referred to counselling • 10 patients out of the total population (n=366, 3%) received counseling 	<p>LOE: VI</p> <p>Strengths:</p> <ul style="list-style-type: none"> • Use of valid and reliable screening tools • Appropriate sample size (n= 366) <p>Limitations:</p> <ul style="list-style-type: none"> • Short data collection time (3 months) • Use of 2 healthcare sites • Poor EHR: some patients were accounted for twice • Incorrect referrals based on researcher developed criteria <p>Feasibility/Generalizability:</p> <ul style="list-style-type: none"> • Two commonly used tools (GAD-7 and PHQ-9) • Scoring system easily reproducible on other healthcare settings • Study required no extra funding

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		<p>patients with anxiety and/or depression To develop an algorithm that describes evidence-based management to guide providers serving college students</p>		<p>selective serotonin reuptake inhibitors (SSRIs) were first line</p>	<ul style="list-style-type: none"> • If PHQ-9 >10 and <20: Counseling • If PHQ-9 >: Medical evaluation/ Medication therapy 		<p>referrals when they did not meet screening criteria</p> <p>DV2 and IV2:</p> <ul style="list-style-type: none"> • 89 patients out of the total population (n=366, 24%) were eligible for counseling based on PHQ-9 score • 87 patients out of the eligible 89 patients (98%) were referred to counseling • 44 patients out of the total population (n= 366, 12%) received counseling referrals when they did not meet screening criteria <p>DV3 and IV 1</p> <ul style="list-style-type: none"> • 77 patients out of the total population (n=366 21%) met criteria to receive medical evaluation/medication treatment • 25 patients out of the eligible 77 patients (32%) received medical evaluation/treatment • 5 patients out of the total population (n=366, ~1%) received medical evaluation/medication treatment when they did not meet screening criteria <p>DV3 and IV2:</p> <ul style="list-style-type: none"> • 8 patients out of the total population (n=366, 2%) met criteria to receive medical evaluation/medication treatment • 8 patients out of the eligible 8 patients (100%) actually received medical evaluation/medication treatment • 22 patients population (n=366, 5%) received 	<p>Application to Practice:</p> <ul style="list-style-type: none"> • Use of mental health screening tools can ensure evidenced based practice recommendations. These tools can be used to identify, diagnose, manage and treat patients with anxiety and depression in multiple settings, including primary care and OB/GYN practices
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							evaluation/medication treatment when they did not meet screening criteria <i>Findings:</i> Standardized anxiety and depression screening leads to increased identification, diagnosis and treatment among college aged individuals	
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Key: **AHRQ** Agency for Healthcare Research and Quality, **ATDS-E** Attitudes Towards Depression Screening-Employee, **AUC** Area Under the Curve, **BH** Behavioral Health, **BMI** Body Mass Index, **BP** Blood Pressure, **DSM** Diagnostic and Statistical Manual of Mental Disorders, **DV** Dependent Variable, **EHR** Electronic Health Record, **EPDS** Edinburg Perinatal Depression Scale, **FQHC** Federally Qualified Health Center, **GAD-7** Generalized Anxiety Disorder 7-item scale, **GAD-2** Generalized Anxiety Disorder 2-item scale, **GAD-Q-IV** Generalized Anxiety Disorder Questionnaire for DSM IV, **GHP** General Health Perception, **IV** Independent Variable, **LOE** Level of Evidence, **OB/GYN** Obstetrics and Gynecology, **PHQ-2** Patient Health Questionnaire 2, **PHQ-9** Patient Health Questionnaire 9, **PDSA** Plan-Do-Study-Act, **QUADAS-2** Quality Assessment of Diagnostic Accuracy Studies 2, **SR** Systematic Review, **USPSTF** United States Preventative Services Task Force

Table A2
Synthesis Table

Study	Author/Year	Houghtigan et al. (2021)	Poleshuck et al. (2023)	Pfoh et al. (2020)	Lieb et al. (2020)	Standeven et al. (2023)	Blackstone et al. (2022)	Pilipenko & Vivar-Ramon (2023)	Nelson et al. (2020)	Johnson et al. (2021)	Salinas et al. (2023)
	Design/LOE	Descriptive Correlational Study (LOE: IV)	Retrospective Cohort Study (LOE: IV)	Retrospective Pre-Post Study (LOE: IV)	Cohort Study (LOE: IV)	Retrospective Cohort Study (LOE: IV)	QI Project (LOE: VI)	Mixed Method (Quasi-Experimental) (LOE: III)	Systematic Review (LOE: I)	QI Project (Pre-Post Design) (LOE: VI)	EBP Project (LOE: VI)
Demographics	Mean Age	38.5	35.5	55.1	29.3	N/A	N/A	N/A	N/A (13+)	N/A	N/A (17-50)
	% Female	19.00%	100.00%	56.40%	100.00%	100%	64.00%	83.30%	100.00%	100.00%	75.70%
	Sample Size (N)	236	445	259,411	225	219	23,745	36	2239	Pre-Intervention: 821 Post Intervention: 428	366
	Attrition	31.40%	0%	41.00%	38.30%	64.50%	N/A	21.70%	98.40%	47.80%	62.11%
Setting	Outpatient	✓	✓	✓	✓	✓	✓	✓		✓	✓
	OB/GYN		✓		✓					✓	
	Family Practice			✓			✓	✓			✓
	Community Health	✓			✓			✓			
	Behavioral Health		✓			✓				✓	
	Multiple Practice Sites			✓		✓	✓		✓		✓
Screening Tools	GAD-2 / GAD-7	✓			✓	✓			✓		✓
	PHQ-2 / PHQ-9	✓	✓	✓	✓		✓		✓	✓	✓
	Custom Tool / Other	Research Developed Questionnaire					PDSA	Self-Report Survey, (ATDS-E)	Multiple Other Tools	EPDS	
Interventions	Provider Perception / Satisfaction							↑		↑	
	Recognition of MH Disorders / Symptoms	↑	↑	↑	↑	↑	↑		↑	↑	↑
	MH Treatment		↑	↑							↑
	MH Screening	↑	↑	↑	↑	↑	↑	↑	↑	↑	↑
	Specialist Referrals		↑	↑	↑	↑	↑			↑	↑
Major Findings	Screenings Completed	↑	↑	↑	↑		↑	↑	↑	↑	↑
	Recognition of MH Issues/Diagnoses	↑	↑	↑	↑	↑	↑		↑	↑	↑
	Treatment Change		✓	✓							✓
	Anxiety / Depression Symptoms					↓					
	Care Collaboration		↑	↑	↑	↑	↑	↑		↑	↑

Key: **FQHC** Federally Qualified Health Center, **GAD-7** Generalized Anxiety Disorder 7-item scale, **GAD-2** Generalized Anxiety Disorder 2-item scale, **MH** Mental Health **PDSA** Plan-Do-Study-Act, **PHQ-9** Patient Health Questionnaire 9-item scale, **PHQ-2** Patient Health Questionnaire 2-item scale, **OB/GYN** Obstetrics and Gynecology

Appendix B

Anxiety Screening Tool

Figure B1

The Generalized Anxiety Disorder 7-Item (GAD-7) Screening Tool

GAD-7

Over the <u>last 2 weeks</u> , how often have you been bothered by the following problems?	Not at all	Several days	More than half the days	Nearly every day
1. Feeling nervous, anxious or on edge	0	1	2	3
2. Not being able to stop or control worrying	0	1	2	3
3. Worrying too much about different things	0	1	2	3
4. Trouble relaxing	0	1	2	3
5. Being so restless that it is hard to sit still	0	1	2	3
6. Becoming easily annoyed or irritable	0	1	2	3
7. Feeling afraid as if something awful might happen	0	1	2	3

Total Score _____ = Add Columns _____ + _____ + _____

If you checked off any problems, how difficult have these problems made it for you to do your work, take care of things at home, or get along with other people?

Not difficult at all <input type="checkbox"/>	Somewhat difficult <input type="checkbox"/>	Very difficult <input type="checkbox"/>	Extremely difficult <input type="checkbox"/>
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(Spitzer et al., 2006)

Appendix B

Depression Screening Tools

Figure B2

The Patient Health Questionnaire 9 (PHQ-9)

Over the last 2 weeks, how often have you been bothered by any of the following problems? (use “✓” to indicate your answer)

	Not at all	Several days	More than half the days	Nearly every day
1. Little interest or pleasure in doing things	0	1	2	3
2. Feeling down, depressed, or hopeless	0	1	2	3
3. Trouble falling or staying asleep, or sleeping too much	0	1	2	3
4. Feeling tired or having little energy	0	1	2	3
5. Poor appetite or overeating	0	1	2	3
6. Feeling bad about yourself—or that you are a failure or have let yourself or your family down	0	1	2	3
7. Trouble concentrating on things, such as reading the newspaper or watching television	0	1	2	3
8. Moving or speaking so slowly that other people could have noticed? Or the opposite—being so fidgety or restless that you have been moving around a lot more than usual	0	1	2	3
9. Thoughts that you would be better off dead or of hurting yourself in some way	0	1	2	3
FOR OFFICE CODING <u> 0 </u> + <u> </u> + <u> </u> + <u> </u>				
=Total score: <u> </u>				

If you checked off any problems, how difficult have these problems made it for you to do your work, take care of things at home, or get along with other people?

Not difficult at all	Somewhat difficult	Very difficult	Extremely difficult
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Source. Developed by Drs. Robert L. Spitzer, Janet B.W. Williams, Kurt Kroenke, and colleagues, with an educational grant from Pfizer Inc. No

(Kroenke et al., 2001)

Figure B3

The Patient Health Questionnaire 2 (PHQ-2)

	Not at all	Several days	More than half the days	Nearly every day
Lost interest or had little pleasure in doing things	0	1	2	3
Felt down, depressed, or hopeless	0	1	2	3

Total score = sum of two items.

PHQ-2 score ≥ 3 is suggestive of elevated symptoms of depression.

*The PHQ-2 was developed by Drs. Robert L. Spitzer, Janet B.W. Williams, Kurt Kroenke, and colleagues, with an educational grant from Pfizer Inc. *PHQ2 Copyright © Pfizer Inc. All rights are reserved.*

(Kroenke et al., 2001)

Appendix D

Project Budget and Funding

Figure D1

Project Budget Plan

Phase	Activities	Indirect Cost	Direct Cost	Total
Preparation	<p>Meetings with Key Stakeholders and Clinical Leadership: Director of Integrated Behavioral Health Services, healthcare providers, Clinical Leadership, behavioral health specialists and MAs</p> <p>\$15-70/hour depending on job title x 5 hours</p>	<p>Estimated average cost: \$265</p> <p><i>Time for meetings volunteered and paid for via hourly wage/company salary</i></p>		
	<p>eClinicalWorks EHR Software</p> <p>Estimated \$500/month x 6 months</p>	<p>\$3,000</p> <p><i>Already paid for and in use by the facility</i></p>		
	<p>GAD-7 Smart Form Creation and IT Staff EHR/Technical Support</p> <p>Estimated \$40 x 4 hrs time</p>	<p>\$160</p> <p><i>Part of IT job description, no additional funding</i></p>		
	<p>Workflow Change Educational Flyer Creation and Distribution</p> <p>Flyer Creation: \$30/hr x 1 hour</p> <p>Printer Copies: \$2/paper x 10 copies</p>	<p>\$30</p> <p><i>Time volunteered by student to create flyer</i></p> <p>\$20</p> <p><i>Flyers printed and copied in black and white ink at courtesy of the facility</i></p>		
	<p>Printed and Laminated Copies of Mental Health Screening Tools</p> <p>\$4 per copy x 10 copies each of the GAD-7 and PHQ-9</p>	<p>\$80</p> <p><i>Flyers printed, copied and laminated courtesy of the facility</i></p> <p><i>Note: The PHQ-2 questions are asked by the MA during intake and its cost is included as part of the MA's job description/hourly wage</i></p>		
Delivery	<p>Whiteboard Markers</p> <p>Expo Marker 12 pack: \$10 x 2 pack</p> <p><i>(For patient use on laminated sheets to answer screening questions)</i></p>	<p>\$20</p> <p><i>Markers purchased courtesy of the facility</i></p>		

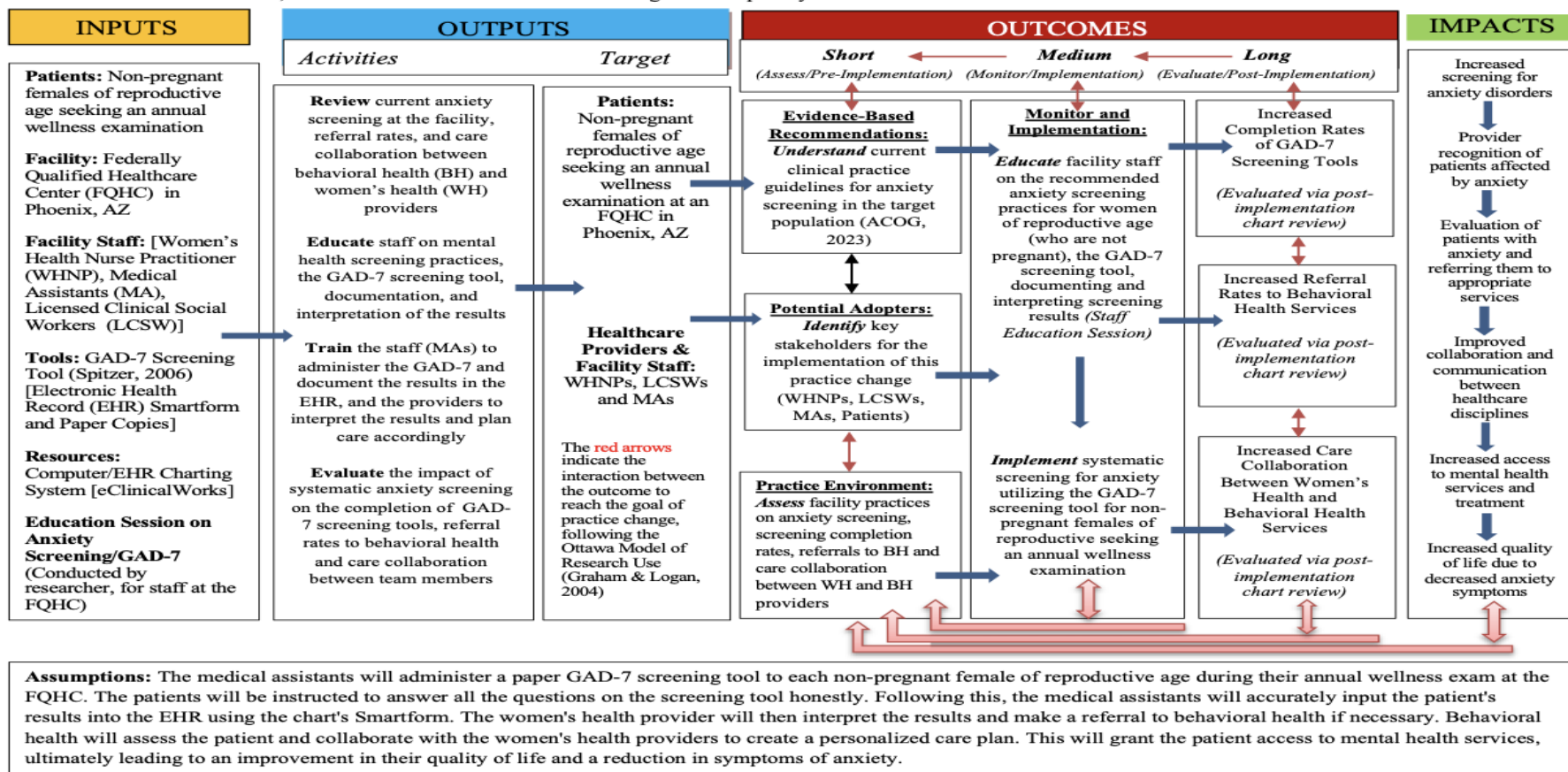
	<p>Screening and Entering Results into the EHR by MA Estimated MA hourly wage \$15/hr 5 additional minutes needed per patient Maximum of 5 annual well woman visits per day</p> <p>\$15 x (5 min x (1 hour / 60 min)) x 5 visits per day</p> <p>\$6.25 per MA per day</p>	<p>\$6.25 per day per MA x (5 days/week x 26 weeks) for 2 MAs</p> <p>\$1,625.00</p> <p><i>Added in the MA job description, no additional funding</i></p>		
	<p>Initial Review of Screening Results and Issuing a Referral to Behavioral Health by Healthcare Provider</p> <p>Estimated healthcare provider hourly wage \$53/hr</p> <p>Estimated additional 3 minutes per chart review x 5 well woman patients per day</p> <p>Estimated additional 5 minutes per referral to behavioral health (maximum 5 referrals per day)</p> <p>\$53 x (8 min x (1 hour / 60 min)) x 5 visits per day</p> <p>\$35.33 per healthcare provider per day</p>	<p>\$35.33 per healthcare provider per day x (5 days/week x 26 weeks) for 1 healthcare provider</p> <p>\$4,592.90</p> <p><i>Added into the healthcare provider job description, no additional finding required</i></p>		
	<p>Behavioral Health (behavioral health specialists) Chart Review, Patient Encounter and Documentation</p> <p>Estimated behavioral health specialist hourly wage \$35/hr</p> <p>Estimated additional 30 minutes per additional women's health patient per day (maximum 5 additional patients)</p> <p>\$35 x (30 min x (1 hour / 60 min)) x 5 visits per day</p> <p>\$87.50 per behavioral health specialist per day</p>	<p>\$87.50 per behavioral health specialist per day x (5 days/week x 26 weeks) for 1 behavioral health specialist</p> <p>\$11,375.00</p> <p><i>Added into the behavioral health specialist job description, overtime hours compensated by facility</i></p>		
Evaluation	<p>Data Collection/Initial Chart Audit by Healthcare Provider</p> <p>\$53/hr x 2 hours</p>	<p>\$106</p> <p><i>Time volunteered by healthcare provider DNP project site champion included in salary, no additional funding required</i></p>		
	<p>Chart Audit and Data Analysis</p> <p>\$30/hr x 15 hours</p>	<p>\$450</p> <p><i>Time volunteered by student</i></p>		
				~\$21,723

Appendix E

Measurement Outcomes and Impacts

Figure E1
Logic Model

Goals: The objective of this evidence-based pilot project is to conduct anxiety screening using the GAD-7 screening tool for women visiting a federally qualified healthcare center for an annual wellness exam who are of reproductive age and not pregnant. The project aims to increase the completion of screening tools and referrals to behavioral health services within the health center, as well as to enhance collaboration among interdisciplinary team members.



Appendix F

Retrospective Chart Audit

Figure F1
Chart Audit Form

Subject ID	Demographics	Insurance	Initial Screenings		Screening Results	Add'l Screening	Behavioral Health	
	Age: Race: Ethnicity:	<input type="checkbox"/> Private <input type="checkbox"/> Medicaid <input type="checkbox"/> No Insurance	Anxiety (GAD-7) <input type="checkbox"/> Completed Score: <input type="checkbox"/> Not Completed <input type="checkbox"/> Patient Declined	Depression (PHQ-2) <input type="checkbox"/> Completed Score: <input type="checkbox"/> Not Completed <input type="checkbox"/> Patient Declined	<input type="checkbox"/> Both Negative <input type="checkbox"/> Positive GAD-7 <input type="checkbox"/> Positive PHQ-2 <input type="checkbox"/> Both Positive	Depression (PHQ-9) <input type="checkbox"/> Completed Score: <input type="checkbox"/> Not Completed <input type="checkbox"/> Patient Declined	BH Referral <input type="checkbox"/> Completed <input type="checkbox"/> Not Completed <input type="checkbox"/> Pt Declined	BH Evaluation <input type="checkbox"/> Completed Day of MV <input type="checkbox"/> Completed within 4 weeks of MV <input type="checkbox"/> Scheduled but Patient No-Show <input type="checkbox"/> Not Complete
	Age: Race: Ethnicity:	<input type="checkbox"/> Private <input type="checkbox"/> Medicaid <input type="checkbox"/> No Insurance	Anxiety (GAD-7) <input type="checkbox"/> Completed Score: <input type="checkbox"/> Not Completed <input type="checkbox"/> Patient Declined	Depression (PHQ-2) <input type="checkbox"/> Completed Score: <input type="checkbox"/> Not Completed <input type="checkbox"/> Patient Declined	<input type="checkbox"/> Both Negative <input type="checkbox"/> Positive GAD-7 <input type="checkbox"/> Positive PHQ-2 <input type="checkbox"/> Both Positive	Depression (PHQ-9) <input type="checkbox"/> Completed Score: <input type="checkbox"/> Not Completed <input type="checkbox"/> Patient Declined	BH Referral <input type="checkbox"/> Completed <input type="checkbox"/> Not Completed <input type="checkbox"/> Pt Declined	BH Evaluation <input type="checkbox"/> Completed Day of MV <input type="checkbox"/> Completed within 4 weeks of MV <input type="checkbox"/> Scheduled but Patient No-Show <input type="checkbox"/> Not Complete
	Age: Race: Ethnicity:	<input type="checkbox"/> Private <input type="checkbox"/> Medicaid <input type="checkbox"/> No Insurance	Anxiety (GAD-7) <input type="checkbox"/> Completed Score: <input type="checkbox"/> Not Completed <input type="checkbox"/> Patient Declined	Depression (PHQ-2) <input type="checkbox"/> Completed Score: <input type="checkbox"/> Not Completed <input type="checkbox"/> Patient Declined	<input type="checkbox"/> Both Negative <input type="checkbox"/> Positive GAD-7 <input type="checkbox"/> Positive PHQ-2 <input type="checkbox"/> Both Positive	Depression (PHQ-9) <input type="checkbox"/> Completed Score: <input type="checkbox"/> Not Completed <input type="checkbox"/> Patient Declined	BH Referral <input type="checkbox"/> Completed <input type="checkbox"/> Not Completed <input type="checkbox"/> Pt Declined	BH Evaluation <input type="checkbox"/> Completed Day of MV <input type="checkbox"/> Completed within 4 weeks of MV <input type="checkbox"/> Scheduled but Patient No-Show <input type="checkbox"/> Not Complete
	Age: Race: Ethnicity:	<input type="checkbox"/> Private <input type="checkbox"/> Medicaid <input type="checkbox"/> No Insurance	Anxiety (GAD-7) <input type="checkbox"/> Completed Score: <input type="checkbox"/> Not Completed <input type="checkbox"/> Patient Declined	Depression (PHQ-2) <input type="checkbox"/> Completed Score: <input type="checkbox"/> Not Completed <input type="checkbox"/> Patient Declined	<input type="checkbox"/> Both Negative <input type="checkbox"/> Positive GAD-7 <input type="checkbox"/> Positive PHQ-2 <input type="checkbox"/> Both Positive	Depression (PHQ-9) <input type="checkbox"/> Completed Score: <input type="checkbox"/> Not Completed <input type="checkbox"/> Patient Declined	BH Referral <input type="checkbox"/> Completed <input type="checkbox"/> Not Completed <input type="checkbox"/> Pt Declined	BH Evaluation <input type="checkbox"/> Completed Day of MV <input type="checkbox"/> Completed within 4 weeks of MV <input type="checkbox"/> Scheduled but Patient No-Show <input type="checkbox"/> Not Complete
	Age: Race: Ethnicity:	<input type="checkbox"/> Private <input type="checkbox"/> Medicaid <input type="checkbox"/> No Insurance	Anxiety (GAD-7) <input type="checkbox"/> Completed Score: <input type="checkbox"/> Not Completed <input type="checkbox"/> Patient Declined	Depression (PHQ-2) <input type="checkbox"/> Completed Score: <input type="checkbox"/> Not Completed <input type="checkbox"/> Patient Declined	<input type="checkbox"/> Both Negative <input type="checkbox"/> Positive GAD-7 <input type="checkbox"/> Positive PHQ-2 <input type="checkbox"/> Both Positive	Depression (PHQ-9) <input type="checkbox"/> Completed Score: <input type="checkbox"/> Not Completed <input type="checkbox"/> Patient Declined	BH Referral <input type="checkbox"/> Completed <input type="checkbox"/> Not Completed <input type="checkbox"/> Pt Declined	BH Evaluation <input type="checkbox"/> Completed Day of MV <input type="checkbox"/> Completed within 4 weeks of MV <input type="checkbox"/> Scheduled but Patient No-Show <input type="checkbox"/> Not Complete
	Age: Race: Ethnicity:	<input type="checkbox"/> Private <input type="checkbox"/> Medicaid <input type="checkbox"/> No Insurance	Anxiety (GAD-7) <input type="checkbox"/> Completed Score: <input type="checkbox"/> Not Completed <input type="checkbox"/> Patient Declined	Depression (PHQ-2) <input type="checkbox"/> Completed Score: <input type="checkbox"/> Not Completed <input type="checkbox"/> Patient Declined	<input type="checkbox"/> Both Negative <input type="checkbox"/> Positive GAD-7 <input type="checkbox"/> Positive PHQ-2 <input type="checkbox"/> Both Positive	Depression (PHQ-9) <input type="checkbox"/> Completed Score: <input type="checkbox"/> Not Completed <input type="checkbox"/> Patient Declined	BH Referral <input type="checkbox"/> Completed <input type="checkbox"/> Not Completed <input type="checkbox"/> Pt Declined	BH Evaluation <input type="checkbox"/> Completed Day of Medical Visit MV <input type="checkbox"/> Completed within 4 weeks of MV <input type="checkbox"/> Scheduled but Patient No-Show <input type="checkbox"/> Not Complete
	Age: Race: Ethnicity:	<input type="checkbox"/> Private <input type="checkbox"/> Medicaid <input type="checkbox"/> No Insurance	Anxiety (GAD-7) <input type="checkbox"/> Completed Score: <input type="checkbox"/> Not Completed <input type="checkbox"/> Patient Declined	Depression (PHQ-2) <input type="checkbox"/> Completed Score: <input type="checkbox"/> Not Completed <input type="checkbox"/> Patient Declined	<input type="checkbox"/> Both Negative <input type="checkbox"/> Positive GAD-7 <input type="checkbox"/> Positive PHQ-2 <input type="checkbox"/> Both Positive	Depression (PHQ-9) <input type="checkbox"/> Completed Score: <input type="checkbox"/> Not Completed <input type="checkbox"/> Patient Declined	BH Referral <input type="checkbox"/> Completed <input type="checkbox"/> Not Completed <input type="checkbox"/> Pt Declined	BH Evaluation <input type="checkbox"/> Completed Day of MV <input type="checkbox"/> Completed within 4 weeks of MV <input type="checkbox"/> Scheduled but Patient No-Show <input type="checkbox"/> Not Complete
	Age: Race: Ethnicity:	<input type="checkbox"/> Private <input type="checkbox"/> Medicaid <input type="checkbox"/> No Insurance	Anxiety (GAD-7) <input type="checkbox"/> Completed Score: <input type="checkbox"/> Not Completed <input type="checkbox"/> Patient Declined	Depression (PHQ-2) <input type="checkbox"/> Completed Score: <input type="checkbox"/> Not Completed <input type="checkbox"/> Patient Declined	<input type="checkbox"/> Both Negative <input type="checkbox"/> Positive GAD-7 <input type="checkbox"/> Positive PHQ-2 <input type="checkbox"/> Both Positive	Depression (PHQ-9) <input type="checkbox"/> Completed Score: <input type="checkbox"/> Not Completed <input type="checkbox"/> Patient Declined	BH Referral <input type="checkbox"/> Completed <input type="checkbox"/> Not Completed <input type="checkbox"/> Pt Declined	BH Evaluation <input type="checkbox"/> Completed Day of MV <input type="checkbox"/> Completed within 4 weeks of MV <input type="checkbox"/> Scheduled but Patient No-Show <input type="checkbox"/> Not Complete
	Age: Race: Ethnicity:	<input type="checkbox"/> Private <input type="checkbox"/> Medicaid <input type="checkbox"/> No Insurance	Anxiety (GAD-7) <input type="checkbox"/> Completed Score: <input type="checkbox"/> Not Completed <input type="checkbox"/> Patient Declined	Depression (PHQ-2) <input type="checkbox"/> Completed Score: <input type="checkbox"/> Not Completed <input type="checkbox"/> Patient Declined	<input type="checkbox"/> Both Negative <input type="checkbox"/> Positive GAD-7 <input type="checkbox"/> Positive PHQ-2 <input type="checkbox"/> Both Positive	Depression (PHQ-9) <input type="checkbox"/> Completed Score: <input type="checkbox"/> Not Completed <input type="checkbox"/> Patient Declined	BH Referral <input type="checkbox"/> Completed <input type="checkbox"/> Not Completed <input type="checkbox"/> Pt Declined	BH Evaluation <input type="checkbox"/> Completed Day of MV <input type="checkbox"/> Completed within 4 weeks of MV <input type="checkbox"/> Scheduled but Patient No-Show <input type="checkbox"/> Not Complete

Key: GAD-7 = Generalized Anxiety Disorder 7-Item Scale, MV = Medical Visit, PHQ-2 = Patient Health Questionnaire 2, PHQ-9 = Patient Health Questionnaire 9 AI = American Indian, A = Asian, B = Black/African American, H = Hispanic/Latino, M = Mixed races NH = Non-Hispanic/Latino, PI = Pacific Islander/ Native Hawaiian, O = Other, W = White

Date Entry: _____ Data Validation: _____ Data Analysis: _____

Appendix G

Descriptive Statistics

Figure G1
Patient Demographics

<i>Demographics</i>	<i>n</i>	<i>%</i>
Race		
White	96	55.49
Other	53	30.64
Black/African American	17	9.83
Hispanic/Latino	5	2.89
Asian	2	1.16
Ethnicity		
Non-Hispanic/Latino	34	19.65
Hispanic/Latino	133	76.88
Other	6	3.47
Insurance		
Medicaid	72	41.62
No Insurance	53	30.64
Private	48	27.75

Note. Due to rounding errors, percentages may not equal 100%.

Figure G2
Screening Completion Rates

<i>Completed Screenings</i>	<i>n</i>	<i>%</i>
Anxiety (GAD-7) and Depression (PHQ-2/PHQ-9)	97	56.07
Depression (PHQ-2/PHQ-9) ONLY	40	23.12
Anxiety (GAD-7) ONLY	2	1.16
No Screening	34	19.65

Note. Due to rounding errors, percentages may not equal 100%.

Figure G3
Positive Mental Health Screenings

<i>Positive Screening</i>	<i>n</i>	<i>%</i>
Anxiety (GAD-7) and Depression (PHQ-2/PHQ-9)	8	5.76
Depression (PHQ-2/PHQ-9) ONLY	8	5.76
Anxiety (GAD-7) ONLY	34	24.46
None	89	64.03

Note. Due to rounding errors, percentages may not equal 100%.

Figure G4
Behavioral Health Referrals

<i>Behavioral Health Referrals</i>	<i>n</i>	<i>%</i>
Completed	21	38.89
Patient Declined	15	27.78
No Referral Given	18	33.33

Note. Due to rounding errors, percentages may not equal 100%.

Figure G5

Completion of Behavioral Health Evaluation

<i>Behavioral Health Evaluation</i>	<i>n</i>	<i>%</i>
Completed Day of MV	15	71.43
Scheduled but Patient No-Show	4	19.05
Not Scheduled	1	4.76
Completed Within 4 Weeks of MV	1	4.76

Note. Due to rounding errors, percentages may not equal 100%.

MV= Medical Visit (Well-Woman Exam)

Figure G6

Referrals Based on Positive Screenings

<i>Referrals Based on Positive Screenings</i>	<i>n</i>	<i>%</i>
Anxiety (GAD-7) and Depression (PHQ-2/PHQ-9)	2	9.52
Depression (PHQ-2/PHQ-9) ONLY	1	4.76
Anxiety (GAD-7) ONLY	16	76.19
None	2	9.52

Note. Due to rounding errors, percentages may not equal 100%.