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Implementing a standardized mental health screening protocol in a primary care setting

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Abstract
Aim: Facilitate early detection and prompt treatment of anxiety and depression through mental health screening, leading to participant self-awareness and mitigation of potential sequelae (e.g., alcohol abuse, substance abuse, and suicidal ideations).
Background: Lack of awareness of ongoing depression or anxiety is a key contributor to not obtaining the medical care needed by patients in a primary care setting. Both providers and patients are unaware of these significant mental health issues, and may benefit from evidence-based initiatives supported by the Substance Abuse and Mental Health Services Administration where the RE-AIM framework was implemented for further guidance.
Methods: A mental health screening protocol was implemented in a primary care setting, leading to treatment by the primary care provider or referral to a mental health specialist. Mental health screening protocol included generalized anxiety disorder 7 (GAD7) for detecting anxiety, and patient health questionnaire 8 (PHQ8) for detecting depression.
Findings: 24 out of 50 patients screened positive for anxiety or depression and were referred. Of those, 21 adhered to the treatment or referral, with an 87.5% adherence rate, higher than the institutional goal of 40%. 3 remaining patients that did not adhere barely met the cutoff for screening positive, and discussed follow-up visits with their primary care provider. Pearson's correlational analyses demonstrated an *r* value of 0.85 between the GAD7 and PHQ8, an *r* value of 0.84 between the GAD7 and referral adherence, and an *r* value of 0.91 between the PHQ8 and referral adherence. Statistical significance was noted as *p* values were <0.001 for all analyses.
Conclusions: Improved patient outcomes for patients suffering from anxiety and/or depression are noted in the outpatient primary care setting through mental health screening and provider referrals, and can be applied to virtually any healthcare setting as indicated by the Substance Abuse and Mental Health Services Administration. Implementation of these evidence-based interventions address Healthy People 2030 Social Determinants of Health and mitigation of potential sequelae.

Keywords: Generalized anxiety disorder (GAD), depression screening, anxiety screening

Introduction

The prevalence of health issues such as anxiety or depression in the United States cannot be understated. Diagnostic interview data obtained from the National Comorbidity Study Replication (NCS-R) provides an estimate of 19.1% of adults in the United States having experienced any anxiety disorder in the past year or 31.1% of adults in the United States having experienced any anxiety disorder throughout some time in their lives (National Institute of Mental Health Any Anxiety Disorder, 2023) [10-11]. An estimated 21 million adults having suffered at least one major depressive episode in the past year, consisting of 8.3% adults in the United States (National Institute of Mental Health Depression, 2023) [10-11]. Individuals experiencing anxiety or depression may be at increased risk of harm to themselves or others (Substance Abuse and Mental Health Services Administration, 2021) [18]. This impacts the patient's ability to conduct their activities of daily living, the provider's ability to provide care to the patient, and the healthcare system through a financial standpoint.

Substance Abuse and Mental Health Services Administration (2020) [17] reinforces the inter-collaborative and multi-disciplinary approach needed to improve patient outcomes for these conditions. Federal funding sources, including Title III-B and Title III-D aim to address these financial burdens, but early recognition and prompt treatment continue to prevail. Patient populations that may be at risk for anxiety depression may include students (Nahar,

et al., 2019; Wells, *et al*., 2021) [9, 22], healthcare workers (Chotalia, *et al*., 2022) [2], older adults (Substance Abuse and Mental Health Services Administration, 2020) [17], adults with comorbidities (SAMHSA, 2021) [18], Hispanic individuals (Moyce, *et al*., 2022) [8], immigrants, and refugees. Healthcare institutions may benefit from introducing institutional policies aimed towards mitigating these concerns through reinforcement of provider education, and reinforcement of patient education of screening for anxiety and depression.

Background

A lack of awareness or insight regarding ongoing anxiety or depression within the general population is a contributing factor to not seeking treatment (Konstantakopoulos, 2019) [5]. However, improvements in provider referrals have been observed following the implementation of standardized screenings (Reist *et al*., 2022) [14]. Substance Abuse and Mental Health Services Administration (2021) [18] recommends providers adopt comprehensive screening and facilitated referrals to specialists for early recognition and treatment of anxiety and depression.

Screening conducted by the participants primary care provider provides further integration of the provider in their capacity to provide competent patient care and is highly recommended by numerous national organizations including the United States Preventative Services Task Force (USPSTF Anxiety in Adults: Screening Draft Recommendation Statement, 2022; USPSTF Depression and Suicide Risk in Adults: Screening, 2022) [19-20], Healthy People 2030 (Health.gov, 2023) [3], and the American Academy of Family Physicians (American Academy of Family Physicians Clinical Preventive Services Recommendations, 2023) [1].

Methods

This evidence-based practice initiative evaluated the effectiveness of implementing standardized screening for anxiety and depression, and subsequent referral to a primary care provider or specialist. This screening protocol included the GAD7 for anxiety screening and the PHQ8 for depression screening (PHQ8 & GAD7 Link, 2023), and was incorporated into the primary care provider's standard of practice. The study consisted of obtaining data pertinent to early detection rates of anxiety and depression. The participants were explained the purpose of the study by their primary care provider where participation was voluntary. If the participant decided to not participate, their visit with their primary care provider would resume as scheduled. These questionnaires can be administered by the participant independently from the primary care provider online through provided links, thereby avoiding undue pressure to the participant if they decide to not participate in the evidence-based initiative. Opting to conduct screening would help facilitate early detection and prompt treatment in the provider's practice.

The RE-AIM framework recommended by the Substance Abuse and Mental Health Services Administration (2021) [18] was used as a guiding framework where each element (i.e., R - Reach, E - Effectiveness, A - Adoption, I - Implementation, M - Maintenance) helped provide a viable long-term solution to the problem identified at the practice site. Ethical implications were taken into consideration with University of Phoenix's Institutional Review Board prior to conducting this evidence-based practice initiative.

Participants: Participants were a single group of individuals obtained from a primary care practice in the southeastern United States throughout a ten-week period. Prospective outcome measurements were patient adherence to primary care provider and/or specialist referrals for patients who screened positive for anxiety and/or depression. The majority of patients were of Hispanic ethnicity with overlapping demographics of previously identified vulnerable patient population (e.g., students, older adults, healthcare workers, and adults with comorbidities). Participants eligible for participation included individuals who were at least 18 years of age, who spoke English or Spanish, and did not have a prior diagnosis of anxiety or depression. All individuals who met the eligibility criteria received the screening, as this implementation was included in the standard of practice provided to patients at the primary care setting.

Instruments and Tools: Data collection occurred in May, June, and July of 2024. The GAD7 and PHQ8 was administered to 50 participants. Overall scores for both questionnaires in conjunction with referral adherence rates were collected for each participant.

The generalized anxiety disorder 7 (GAD7) is a self-administered questionnaire consisting of 7 questions. Each question is graded from 0 to 3 points depending on the severity, in which the cutoff for this evidence-based practice initiative is a score of $\geq$ 5 points. The GAD7 has been validated in 2,740 primary-care patients with a sensitivity of 89% and a specificity of 82% in diagnosing generalized anxiety disorders (Psychiatric Times - Generalized Anxiety Disorder 7, 2023; Spitzer, *et al*., 2006) [13, 16]. The patient health questionnaire 8 (PHQ8) is a self-administered questionnaire consisting of 8 questions. Each question is graded from 0 to 3 points depending on the severity, in which the cutoff for this evidence-based practice initiative is a score of $\geq$ 10 points.

Data provided by the U.S. National Chronic Disease Self-Management Study corroborates the patient health questionnaire 8 (PHQ8) having an internal consistency reliability of 0.86 in diagnosing major depression (Self-Management Resource Center Patient Health Questionnaire 8 Interpretation (2023) [15]. Successful implementations of the PHQ8 have been noted as seen in the 198,678 participants of the 2006 Behavioral Risk Factor Surveillance Survey (BRFSS) (Kroenke, *et al*., 2008), and is used in the clinical setting (Wells, *et al*., 2013) [21]. Both questionnaires were developed by Robert Spitzer, M.D. - can be obtained online to use without permission in a multitude of languages (PHQ8 & GAD7 Link, 2023), and have been used during moments of national emergencies such as the covid pandemic (Khubchandani, *et al*., 2021) [4] to detect each respective disorder.

Each participant was provided a unique identifier number during the data collection process, in which protected health information or personally identifiable information was not used throughout the project for data analysis. There did not appear to be threats to validity as both questionnaires are self-administered by the participant, and referral adherence is controlled by the participant.

Intervention: The intervention consisted of conducting screening for anxiety utilizing the GAD7 questionnaire and screening for depression utilizing the PHQ8 questionnaire. Participants who screened positive were provided the option to obtain care through their primary care provider, or a

referral to a specialist. The majority of participants who screened positive for anxiety and/or depression opted to obtain care through their primary care provider. Reasons for choosing their primary care provider included convenience (e.g., participants had self-administered the questionnaire at the primary care practice where they primary care provider was located where a quicker turnaround of care to be provided can be established), and due to the rapport these participants had already established with their primary care provider. Participants who opted to follow-through with a specialist were referred to a board-certified psychiatrist. The primary care provider had established a referral network for improved patient outcomes in this regard, in which communication between providers was held several times weekly or as needed. Patients who refused treatment from their primary care provider and/or referral to a specialist barely met the cutoff for screening positive, and held discussions with their primary care provider for follow-up appointments for reassessment at a later date.

Data Analysis

The organizational goal of determining clinical significance for increased patient adherence with referrals made to the patient's primary care provider/specialist was 40%. Descriptive statistics were obtained for both the PHQ8 and GAD7, including the mean, standard deviation, range, and % positive screening for each respective questionnaire. Correlational analyses were obtained between GAD7 and PHQ8 scores, GAD7 and referral adherence scores, and PHQ8 and referral adherence scores.

Findings

Figure 1 demonstrates the adherence rates obtained once the data was analyzed was 87.5%. Percentage rates were obtained by dividing the number of participants who adhered to the treatment plan (i.e., 21 participants) by the number of participants who screened positive (i.e., 24 participants).

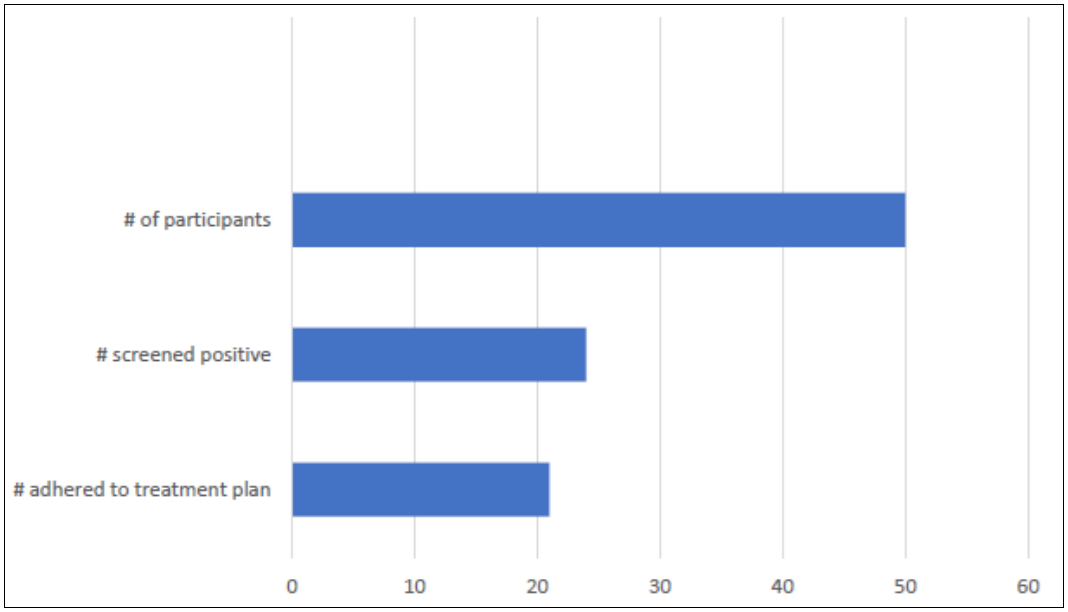

Fig 1: Project finding

The descriptive statistics demonstrated in table 1 for the PHQ8 are a mean score of 5.72 with a standard deviation of 3.90, a range from 1 to 14, and 7 out of 50 participants screened positive. The descriptive statistics demonstrated in table 1 for the GAD7 are a mean score of 6.60 with a standard deviation of 4.01, a range from 2 to 14, and 24 out of 50 participants screened positive.

Table 1: Summary of Participants' Depression and Anxiety Scores (n = 50)

Measurement	M (SD)	Range	% Positive Screening
PHQ8 (Total Score: 0 to 24 points)	5.72 (3.90)	1 - 14	14% (7 participants)
GAD7 (Total Score: 0 to 21 points)	6.60 (4.01)	2 - 14	48% (24 participants)

Notes: GAD-7 = Generalized Anxiety Disorder 7 PHQ-8 = Patient Health Questionnaire 8 *** p<.001

Pearson's correlational analyses of GAD7 and PHQ8 demonstrate an r value of 0.85. Pearson's correlational analyses of GAD7 and referral adherence demonstrate an r value of 0.84. Pearson's correlational analyses of PHQ8 and referral adherence demonstrate an r value of 0.91. These values can be seen in table 2, where p values for each Pearson's correlational analyses are <.001.

Table 2: Relationship between Symptoms of Depression, Anxiety and Referral Compliance

Variable		1	2	3
1.	GAD-7	--		
2.	PHQ-8	.85***	--	
3.	Referral Adherence	.84***	.91***	--

Note: GAD-7 = Generalized Anxiety Disorder 7; PHQ-8 = Patient Health Questionnaire 8; *** p<, 001

Discussion

The detection of anxiety and depression is made possible through an overlap of symptoms in both questionnaires (Substance Abuse and Mental Health Services Administration, 2021) [18]. Both the GAD7 and PHQ8 was developed by Robert Spitzer, M.D - which aimed towards facilitating the detection of these comorbidities. Clinical significance of the evidence-based practice initiative was noted as the adherence rate of 87.5% exceeded the organizational goal of 40% adherence rate. Nearly half (i.e., 48%) of the participants screened positive for anxiety, some of which screened positive for depression. 14% of participants screened positive for depression. Statistical significance was noted as *p* values were less than alpha (*p* value of 0.05), and *r* values greater than 0.8 indicate a strong correlation. Parameters utilized in the sample size calculation include tail(s): two, alpha error probability of 0.05, power of 0.80, and medium Cohen's d effect size. The total sample size that was calculated for a correlational analysis was 29 participants. The implementation of the RE-AIM framework as recommended by the Substance Abuse and Mental Health Services Administration (2021) [18] helped maintain stakeholder engagement throughout the project implementation, and viability of long-term implementation. The results obtained from the evidence-based initiative are consistent with the supporting literature with improved detection and treatment through appropriate screening and referral.

Limitations

Three out of the twenty-four participants with a positive screening did not adhere to treatment by their primary care provider or referral to a specialist. These participants barely met the cutoff for screening positive. Although these participants agreed with their primary care provider for a follow-up visit, the results of that follow-up visit are unknown at the conclusion of this evidence-based practice initiative.

Conclusion

Improved patient outcomes were noted in this evidence-based practice initiative for individuals suffering from unrecognized anxiety and/or depression. Results obtained from correlational analyses indicated higher anxiety scores were associated with higher depression scores, and higher referral adherence was associated with higher symptoms of anxiety and depression. These evidence-based interventions suggested by the Substance Abuse and Mental Health Services Administration (2021) [18] are "… designed for practitioners, administrators, community leaders, health profession educators, and others considering an intervention for their organization or community". The implications for the discipline of nursing and the healthcare system are limitless as these evidence-based interventions can be implemented in virtually any healthcare setting, facilitating detection of previously unidentified anxiety and/or depression, including individuals holding a high political office such as the president of the United States (Memorandum from the White House Physician, 2025)

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