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UNIVERSITY OF SAN DIEGO
Hahn School of Nursing and Health Science
DOCTOR OF NURSING PRACTICE

Improved Monitoring of Depression and Suicidal Ideation in Low-Income Adolescents through Evidenced-Based Provider Education

by

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Abstract

Background: Adolescents from low-income status experience more prevalent thoughts of suicide than their financially secure peers. Nearly 15% considered taking their own life. Suicidal ideation among adolescents in California ranges from 4% to 67%. Depression and suicidal thoughts are underdiagnosed among adolescents, with higher disparities among minority and lower socioeconomic backgrounds.

Purpose: This project involved consistent screening of high-risk adolescents for potential depression and suicidal ideation using a patient health questionnaire recommended by the U.S. Preventive Services Task Force screening.

Process: This project involved adolescents 12–18 years old who had visited a federally qualified healthcare center in San Bernardino, California. The project educated staff about depression and suicidal ideation recommendation screening for adolescents. The project involved collecting screening data pre-intervention from October 2020 to December 2020 and post-intervention from July 2021 to September 2021.

Outcome: The pre-intervention screening form utilization was 37.5%, and there were six emergency room visits or hospitalizations in 2020. After implementing the project, screening form utilization increased to 100%, and no suicidal ideation emergency room visits or hospitalizations in 2021.

Conclusion: Early detection of depressive symptoms is vital in providing early treatment and prevention of suicide.

Implications for Clinical Practice: Utilizing a screening form at every patient visit will detect early depressive symptoms and suicidal ideation. It will prevent hospitalization, reduce
malpractice liability, increase referral to the behavioral health department, increase revenue, and improve organization regulatory compliance guidelines.

*Keywords: Adolescents from low-income, depression, suicidal, patient health questionnaire*
Background and Significance

In the absence of a mental health diagnosis, the primary opportunity to detect mental illness and refer adolescents to mental health services is communication with a primary healthcare professional (Zuckerbrot et al., 2018). Unfortunately, only half of the adolescents who suffer from depression are diagnosed and treated before entering adulthood, having significant negative implications for their developmental stages and adaptive strategies (Zuckerbrot et al., 2018). As a result, from 2000–2016, the United States observed a 30% increase in suicides across all age groups, with equally staggering statistics identified in the adolescent population (Miron et al., 2019). Yet, according to Zuckerbrot et al. (2018), assessment tools have been made available for primary healthcare clinics to ensure early detection and referrals to mitigate these outcomes. The underutilization of assessment tools by primary health clinics leaves the question of how such a high percentage of the adolescent population remains undiagnosed in a setting where primary healthcare professionals can intervene.

According to professional observations and scholarly research, the answer is alarming. Specifically, according to Schaeffer and Jolles (2019), these tools are improperly implemented into standard practice, leaving many adolescent patients with unmet mental healthcare needs. Clinics have reported as low as 9.1% screening in diversified settings, indicating that there is cause for concern regarding cultural and racial disparities in the diagnosis and referral for depression among adolescents (Schaeffer & Jolles, 2019). For instance, Kim et al. (2018) explained that there are gender and racial disparities in follow-up assessments for depression and suicidal ideation among adolescents. While gender and racial disparities might be due to a lack of parental consent associated with cultural beliefs relating to mental health diagnoses, the
potential for such beliefs to affect decisions in the clinical setting is cause for additional concerns (Kim et al., 2018).

Within the context of parental attitudes and beliefs about mental health diagnoses and referral, it is further relevant to acknowledge that mental healthcare services may be optional despite being referred by a trusted primary care provider. The study conducted by Kim et al. (2018) focused on school counselors, which may have prevented the parents from not understanding the overall health implications of not following up with the mental health services referral for their child. However, primary care providers may have the opportunity to explore these factors with the parents should a referral be deemed appropriate. This is an essential bridge in mental health services for adolescents who may initiate a call for help but be limited in pursuing help without parental consent. In other words, many adolescents are attempting to exhibit help-seeking behaviors. When the healthcare providers do not respond by conducting the required new patient and follow up assessments, these behaviors go unrecognized, leaving the adolescent with no access to appropriate treatment.

Narrowing the discussion to the present study, Farrell et al. (2019) explained that adolescents from low-income status homes experienced more prevalent thoughts of suicide than their financially secure peers. Farrell et al. (2019) noted that nearly 15% of low-income adolescents considered taking their own life by suicide. Furthermore, research has indicated that suicidal ideation reporting among adolescents in California has ranged from 4% to 67% (Benbenishty et al., 2018). Inconsistent statistical reporting illustrates a lack of understanding of the factors contributing to the broad range of statistical numbers and the attitudes regarding reporting depression and suicidal ideation. The broad range of statistical numbers may be further magnified by the limitation of opportunity to present suicide ideation in a secure setting such as a
primary healthcare environment. In brief, the statistics available support the assertion that depression and suicidal thoughts are underdiagnosed among the adolescent population, with higher disparities being identified among minority and lower socioeconomic backgrounds. The diagnosis disparities among minority and low-income adolescents justify the investigation of the gap in assessments in the primary healthcare environment.

This project explored screening of depression and suicidal thoughts in minority and low-income adolescents in a clinic in San Bernardino, CA, as this clinic provides services to the target population. The city and the surrounding cities are densely populated with minority groups. According to the 2020 United States census bureau, the city has a population of 222,101. 66.2% are Hispanic or Latino, 14.1% are white (not Hispanic or Latino), 13.2% are black or African American, 4.1% are Asian, and 28.7% are under 18 years (U.S. Census Bureau, n.d.). Additionally, there is a notable income gap, with a significant portion of the population living below poverty. In 2020, the median household income was $49,287, and 23.7% live below the poverty (U.S. Census Bureau, n.d.). As such, the adolescents are dependent on the clinic to provide holistic care, addressing mental health concerns that are more prevalent within their demographic backgrounds.

The current practice at the San Bernardino clinic involves relatively consistent use of the patient health questionnaire (PHQ) screenings for new patients at their initial visit. PHQ is a screening tool for major depression disorder (MDD) recommended by the United States Preventive Services Task Force (USPSTF). The USPSTF recommends screening for MDD in adolescents aged 12 to 18 years. Screening should be implemented with adequate systems in place to ensure accurate diagnosis, effective treatment, and appropriate follow-up (USPSTF, 2016). These gold-standard interviews provide the essential information to open communication
lines and make necessary recommendations for adolescents who would otherwise fall into the statistics of 50% without a diagnosis or treatment. However, the PHQ screening form used during follow-ups at the clinic was far less prevalent, at approximately 37.5%. Yet, according to Zuckerbrot et al. (2018), the PHQ-2 and the PHQ-9 can be utilized without creating any significant hindrances to healthcare practice flow. The first two questions of PHQ-9 are PHQ-2. PHQ-2 contains two-item questions in assessing anhedonia and depressed mood over the past two weeks, scoring from 0 ("not at all") to 3 ("nearly every day"). The total score of the PHQ-2 ranges from 0 to 6 (Romppel et al., 2013). The PHQ-9 is a specific screening tool for depression in which participants respond to nine items on depressive symptoms during the last two weeks through a scoring from 0 ("not at all") to 3 ("nearly every day"). The total score of the PHQ-9 ranges from 0 to 27 (Gálvez-Lara et al., 2019). Thus, the San Bernardino clinic had the opportunity to improve services for low-income and minority populations, but this could only occur with the implementation of evidence-based practices and the enforcement of clinic-based policies. This study aimed to explore why these assessment tools were not being appropriately utilized and to determine the best strategies to improve this practice within the identified clinic. The project’s findings will increase the use of PHQ assessments to reduce the number of undiagnosed adolescents with depression and mitigate suicide rates for low-income and minority adolescents.

**Literature Review**

Although the current study focused on one clinic in San Bernardino, California, the literature review focused more specifically on the challenges of implementing PHQ utilization strategies and methods to overcome the barriers for the patients. Using Copley Library, Cumulative Index to Nursing and Allied Health Literature (CINAHL), and PubMed with the
parameters of articles published between 2016 and 2020, search terms included barriers to mental health assessments, adolescent mental health assessments, and primary care PHQ. Five abstracts were reviewed from each search group. After assessing the abstracts using the Fineout-Overholt and Melynk Hierarchy of Evidence (Fineout-Overholt 2019), six articles were identified. One is a systemic review (Richards et al., 2019), three are randomized controlled trials (O'Brien et al., 2016; Reith, 2018; Sisler et al., 2020), and two are controlled cohort studies (AlRuthia et al., 2020; Arrieta et al., 2017).

**Reasons for Inconsistent Utilization**

According to O'Brien et al. (2016), governments began to focus on primary care providers as gatekeepers for mental healthcare. Primary care providers continue to be undertrained in providing support specific to their patient's mental health needs. However, O'Brien et al. (2016) noted additional challenges which included delays between referral and the onset of access to mental healthcare services. In other words, many primary care providers have lost faith in the system, asserting that their use of diagnostic tools served only as a precursor to limitations of access to appropriate care. The evidence (O'Brien et al., 2016) implied that primary care providers identified their role in the mental health assessments requires further research and definition. While O'Brien et al. (2016) stated that the assessments may appear to have little impact, Reith (2018) added that the assessments require extensive paperwork, minimizing the amount of time that the primary care providers had to focus on practices known to promote the health of their patients. At this point, the research indicated that practitioners view the assessments as both ineffective and inefficient.

However, Sisler et al. (2020) explained that, when properly implemented, such screenings can reduce the stigma of mental health and promote adherence to recommendations.
associated with mental healthcare services. However, the emphasis must be on patient-centered care with an established relationship and an understanding that the patient and their caregivers are active partners in promoting their health. Sisler et al. (2020) explained that primary care providers have a unique insight into adolescents' family history, meaning that they can establish a communicative relationship based on known truths that will allow the sharing of knowledge about experiences, thoughts, and beliefs. Nevertheless, information will not be provided unless the healthcare provider initiates the conversation. Patient-centered care places this responsibility on both the patient and the healthcare provider. However, the solution is a shared concept.

**Strategies to Increase Utilization**

According to Arrieta et al. (2017), the PHQ-2 and PHQ-9 have been repeatedly validated through empirical research and clinical application. It is illogical to assert that primary care providers are unaware of these assessment tools' effectiveness. According to Sisler et al. (2020), these assessments are used less frequently than recommended. So therefore, it is possible to argue that the expectation of utilizing these tools continually may raise questions by primary care providers as to the effectiveness of the results at each assessment. It may be beneficial to reiterate that the USPSTF recommends screening for MDD in adolescents aged 12 to 18 years to promote a more consistent utilization of the assessments in the primary care setting. The optimal interval for screening for MDD is not known. However, USPSTF recommends opportunistic screening may be appropriate for adolescents who may have infrequent health care visits (USPSTF, 2016).

AlRuthia et al. (2020) explained that one of the most significant barriers to referrals in the primary healthcare setting for mental healthcare services is the absence of trust from adolescent patients. This indicates that it is difficult for providers to establish a trust relationship with the
adolescent patient, preventing open communication about personal thoughts and behaviors. Therefore, AlRuthia et al. (2020) asserted there would be improved use of mental healthcare diagnostics when the primary healthcare provider had the tools and skills necessary to establish a trust relationship with the patient. Yet, Richards et al. (2019) explained that many primary healthcare providers are met with resistance when assessing adolescent patients for depression and suicidal thoughts. After some time, the primary care providers lose faith that the assessment will yield no significant results, and the assessments get pushed to the side. Therefore, improving health literacy among the adolescent population may improve the relationship and communication that will achieve the desired outcomes.

Methods

The implementation of the EBP project required a framework that is known to be reliable and proven. The Stetler model emphasizes practitioner-oriented and organizational change (Indra, 2018). The model has five stages premised upon critical thinking and evaluation of the evidence. The first stage involves identifying the purpose of the change and initiating the search for evidence (Indra, 2018). During the following two stages, the evidence is validated and critiqued for application to the decision-making process, respectively (Indra, 2018). Refinements are integrated into the implementation process leading to the final evaluation stage (Indra, 2018). Identifying the problem has led to the finding and validation of evidence to support both the need for the project and the identification of the root causes. The refinements will be used to implement an education program, and an evaluation will be conducted to analyze the program's outcomes and its implementation.
Project Approval

The Institutional Review Board at the University of San Diego granted this project exemption. The federal government categorizes the project as category 4, which is secondary research for which consent was not required.

Description of Project

This EBP investigated the utilization of PHQ forms at an FQHC clinic in San Bernardino, California, to screen adolescent patients for depressive symptoms and suicidal ideation. The project identified problems with utilizing PHQ forms at the clinic, resulting in implementing quality improvement practices to address them. The pre-intervention data was from October to December 2020, and the post-intervention data was from July to September 2021. The data were subjected to statistical analysis, and the results were presented in pie and bar charts (see Figures 1, 2, and 3).

Intervention Implementation

The EBP student screened all adolescent patients between the ages of 12 to 18 who presented to the clinic using the PHQ form. The medical assistants in the front office administered a PHQ-2 form. If the PHQ-2 was positive with a score of 3 or higher, the PHQ-9 would be administered. The medical assistant administered the form using the electronic medical record (EMR) the clinic provides. The EMR already had the form built into it. All clinic staff were previously educated to make a referral to behavioral health for a positive PHQ-9 positive screening of 5 or greater. If a patient had active suicidal ideation, the EBP student would be notified immediately. The EBP student is the author of this project. All clinic staff underwent training on properly completing the PHQ form, the score interpretation, and how to make a
referral to the behavioral health department. If the medical assistant missed or forgot to do the screening form, the provider who saw the patient had to complete the form.

The EBP student was responsible for ensuring the clinic staff's adherence to the EBP plan of screening all adolescent patients aged 12 to 18 years using the PHQ form. The EBP student was also responsible for tracking the total number of adolescent patients who visited the clinic daily, all PHQ scores, referrals to the behavioral health department, and ensuring that the EBP protocol was being implemented. After the project, the clinic organization will continue the implementation of the EBP protocol.

**Stakeholder Identification**

The process stakeholders for this EBP include the clinic family nurse practitioner and the physician interested in seeing the project outcome and how it will improve the monitoring of depression and suicidal ideation in the clinic. The two stakeholders work at the clinic where the project was implemented. The EBP student kept the two stakeholders informed and engaged throughout the project. The EBP faculty advisor was kept informed about the project's progress.

The outcome stakeholders are the clinic organization's chief executive officer, medical director, behavioral health director, and clinic administrator. The EBP student continuously updated the outcome stakeholders through meetings throughout the project.

**Desired Project Outcomes**

The EBP desired project outcome was to have all adolescent patients between the ages of 12 to 18 complete the PHQ form during each visit of their appointment to the clinic. The medical assistants were to ensure all adolescent patients completed the form before leaving the clinic. EBP student was to check all providers' schedules at the end of the day to ensure all adolescents on their schedule completed the PHQ form. Any positive PHQ-9 were to be referred to the
behavioral health department. Any patient with active suicidal ideation must be referred to the behavioral health department as an emergency by calling an EBP student or any social worker or psychologist.

**Outcome Indicators**

All adolescent patients must have a PHQ form completed when they are present to see a provider at the clinic. If the PHQ form is positive, the patient must be referred to the behavioral health department. PHQ form is a valid and reliable screening tool to detect depressive symptoms and suicidal ideation. The outcome indicator was evaluated based on the number of screening rates and the referral rates to the behavioral health department.

**Sustainability**

The clinic organization is committed to the sustainability of the EBP at the clinic. The clinic organization plans to ensure that all primary care providers use the PHQ form on all adolescent patients that come to the clinic. After implementing the project, the family practice nurse practitioners and physicians were committed to ensuring the continuation of the PHQ form screening on all adolescent patients that visit the clinic and that all positive screening is referred to behavioral health accordingly. The primary care providers were essential in the sustainability of the project because they were the ones that were not complete the form on every adolescent patient visit to the clinic before starting this project.

**Dissemination**

The dissemination of this EBP began with the poster presentation on March 2022, at the doctor of nursing practice presentation day. The project was also presented to the clinic organization stakeholders in March 2022. The presentation includes a PowerPoint presentation to
the management of the clinic and the staff. A copy of the PowerPoint was distributed to everyone that attended.

The project poster was accepted and presented at the 29th National Evidence-Based Practice Conference at the University of Iowa Health Care Department of Nursing Services and Patient Care in April 2022.

The Journal of the American Psychiatric Nurses Association (JAPNA) is the target journal for submitting the project abstract and publication.

Data Analysis and Results

Patient data were collected from the organization's EMR during a specific period to determine the pre-intervention and post-intervention number of adolescent patients screened using PHQ forms.

The pre-intervention data were the total number of adolescent patients, those with and without PHQ form completion, who have visited and were seen at the clinic between October and December 2020 by the primary care providers before implementing the EBP intervention. There were 349 adolescent patients who visited the clinic and were seen by the primary care provider. Among the 349 patients, only 131 completed the PHQ form at 37.5% (see Figure 1).

The post-intervention data were collected between July and September 2021 after implementing the EBP project intervention to identify the total number of adolescent patients with completed PHQ forms and those without who visited and were seen at the clinic by the primary care providers. There were 320 adolescent patients seen. All 320 patients had the PHQ form completed at 100% (see Figure 1). The total number of patients with positive PHQ forms and those who visited the (ER) and were hospitalized due to suicidal ideation pre-intervention and post-intervention were also counted. There were 15 patients with positive PHQ pre-
intervention and 50 patients post-intervention (see Figure 2). The more PHQ forms completed, the more patients positive PHQ. 6 patients visited the (ER) room and were hospitalized pre-intervention, and 0 patients post-intervention (see Figure 3).

**Figure 1**

*Number of Patients with PHQ-2 Completion Pre-Intervention and Post-Intervention*

![Pie chart showing Pre-Intervention (Oct - Dec 2020) and Post-Intervention (Jul - Sept 2021) completion rates. Pre-Intervention: 131, 29%. Post-Intervention: 320, 71%.*

**Figure 2**

*Number of Positive PHQ-2 Pre-Intervention and Post-Intervention*

![Bar chart showing Pre-Intervention (Oct - Dec 2020) and Post-Intervention (Jul - Sept 2021) positive PHQ-2 counts. Pre-Intervention: 15. Post-Intervention: 50, 15.6% of total.*
Cost Benefit Analysis

There was no additional cost required to implement this project. All cost required to implement the project was already in place at the clinic. For the cost analysis, however, the expense to avoid is an ER visit or hospitalization. The average cost of one-week hospitalization for a suicidal ideation patient is $11,210 (Kuehn, 2020). There were six ER visits and hospitalization before the implementation of the project. There was a 15-minute training for staff about the project and its goals. The staff were trained on implementing the project, which included training on using the PHQ screening form for all adolescent patients that come into the clinic for a medical appointment.

There is a cost-benefit to the regional health care system and the clinic organization. There will be $67,260 cost avoidance to the regional health care system by implementing this project ($11,210 X 6 = $67,260). The cost-benefit to the clinic organization includes increasing referrals to the behavioral health department, increasing revenue, and decreasing providers’ malpractice and negligence.

Figure 3

Number of Patients with ER/Hospitalization due to Suicidal Ideation
Implications for Research and Practice

Implementing this EBP increases the utilization of the PHQ screening form and detects more depressive symptoms and suicidal ideation early among low-income adolescent patients. The project prevents ER or hospital admission, reduces malpractice liability on the provider, and improves the organization's PHQ usage compliance and compliance guidelines. The project will provide prompt access and treatment to behavioral health services.

Barriers and Lessons Learned

One of the challenges encountered during this project was the resistance from the clinic organization management to support an EBP. The project was initially planned to cover all the 14 clinics of the organization. But because of the organization's bureaucracy, the plan was changed to only one clinic. There was also resistance from the primary care providers to support the project. Some staff did not see the need to do PHQ screening on patients each time they came to the clinic for a medical appointment. Implementing this project at one small clinic made data collection and working with a small group of staff more convenient.

Conclusion

Depression and suicidal ideation are critical mental health diagnoses, and the primary care provider must take them seriously. Adolescents with low income are more at risk of depressive symptoms. The USPSTF recommends a PHQ form to screen for depression and suicidal ideation. Early detection of depressive symptoms is vital in providing treatment and prevention of suicide. The collaborative care approach has shown to be the best evidence-based practice in treating depression and suicidal ideation. The primary care provider must constantly screen adolescents at higher risk of the illness to detect, refer and treat promptly.
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