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Analysis of a Universal Depression Screening Workflow at an Integrated Healthcare Center

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Introduction

Major depression has been a long standing and complex disorder to identify and treat for as long as mental health services have been around. Advances in the field have generated more effective pharmaceutical medications, psychotherapeutic modalities and methods for early identification and treatment. One such method for early identification is a universal screening protocol administered through a collaborative care model. Such protocols at integrated healthcare centers are essential when attempting to meet the needs of underserved populations.

This facility is a federally qualified healthcare center (FQHC) which provides adult, adolescent, behavioral, pediatric, substance use, and women's' health services to an underserved population. Low socioeconomic status, being underinsured, chronic homelessness, and polysubstance abuse are all prevalent in this community. Such a community presents with unique, but common and complex conditions that require a collaborative effort when attempting to provide accurate and effective treatment. Evidence of such complex presentations are demonstrated in the 2014 UCLA Health Interview Survey which found that 8.8% of Southern California residents reported severe psychological stress and 17.4% needed help for mental health problems (UCLA Center for Health Policy Research, 2016). This demonstrates the need for an effective protocol considering that the rates for the rest of California were 8.1% and 16.3% respectively (UCLA Center for Health Policy Research, 2016).

Major depression remains a public health concern across the United States, and while rates of major depression remained stable from 2005 to 2016, there were still 16.2 million adults (6.7% of adults ≥ 18 yrs. old) who experienced a major depressive episode (MDE) in 2016 (Ahrnsbrak et al., 2016). 64% of these adults further experienced an MDE with a severe impairment, which is defined as depression with extreme difficulty in managing a home,

performing well at work, maintaining healthy relationships with others, or having a social life (Ahrnsbrak et al., 2016).

The impact that such a condition has on quality adjusted life expectancy (QALE) is alarming. Currently, the mechanisms for why depression has such an impact on life expectancy is poorly understood. Research shows that individuals who struggle with depression can have as much as a 28.9-year loss of QALE starting from the age of 18 (Jia, Zack, Thompson, Crosby, & Gottesman, 2015). This rate is greater than for behavioral risk factors like smoking or physical inactivity, and for chronic conditions like cardiovascular disease, stroke, diabetes mellitus, hypertension, and asthma (Jia et al., 2015).

The purpose of this project is an evaluation of an evidence-based protocol that measures the effectiveness of universal depression screening at an integrated healthcare center in Southern California. At risk patients are those who complete a patient health questionnaire (phq-9) and score ≥ 10 when presenting for a primary care visit. The target population were individuals who were ≥18 yrs. old and seeking to establish care through primary care services. A score of ≥ 10 prompts further evaluation by the primary care provider (PCP) prior to behavioral health care management (BHCM) referral. Nuances of the protocol in place at this FQHC include implementation of an electronically based questionnaire system on 02/01/2019 in an attempt to standardize administration of the PHQ-9. An in-depth analysis of the UDS workflow was conducted between 02/01/2019 to 11/30/2019 in order to evaluate its effectiveness and identify failure points.

Evidence addressing the problem

A thorough literature review was conducted to identify the essential elements of effective evidence based UDS protocols. Databases utilized include CINAHL, PsycArticles, PsycINFO, PubMed, and Cochrane Database of Systematic Reviews. Search terms for the review were "collaborative care", "depression", "electronic health record", "referral", "screening", "follow up", "care manager" and "integrated care". A total 457 articles were identified, abstract review was performed on 53 articles, and these were reduced to 43 relevant studies. In total, 20 studies were included in the literature review. Articles were ranked through Melnyk and Fineout-Overhoult's hierarchy of evidence. The hierarchy of evidence consisted of 8 systematic reviews and/or meta-analyses, 1 randomized control trials, 3 case-control studies, 3 qualitative studies, 2 published reports/task force recommendations and 1 book.

Development of collaborative care models (CCM) were found to be essential when examining the burden that mental health derived symptoms would place on primary care visits. It has been found for example that psychological symptoms account for as much as 70% of primary care visits with depression being the third most common reason for seeking help (Hunter, 2009; Gilbody, 2006). Time constraints are another obstacle for primary care providers which consequently reduces accurate diagnosis of depression to as little as 25% of the time (Simon, 2002). In addition to inaccurate diagnosis, adequate pharmacologic interventions for depression were often inadequate in primary care visits (Simon, 2002). These issues highlight the need for standardized UDS protocols implemented through a CCM. The Community Preventive Services Task Force champions CCMs for their ability to detect depression, establish evidence-based guidelines, increase knowledge base/support of depression and reduce burden across the

interdisciplinary team (Community Preventive Services Task Force [CPSTF], 2012). Additionally, a 2012 systematic review involving 24,308 participants demonstrated benefits and included statistically significant improvements in short, medium- and long-term outcomes when treating depression through a CCM (Archer et al., 2012). Identified factors for these outcomes included higher patient satisfaction, increased adherence to treatment plans, and a high degree of guidance/support through the entirety of the treatment process (Archer et al., 2012).

      The essence of CCMs is patient centered care, in combination with an inter-disciplinary team made up of behavioral health practitioners (therapist/psychologist), care managers, licensed social workers, a psychiatric practitioner, the primary care provider and the patient (https://aims.uw.edu/collaborative-care/team-structure). The benefits of such a framework go on to include those previously mentioned from Archer et al., 2012, plus measurement-based care, treatment to target, and stepped care to adjust treatments as needed (Unutzer & Park, 2012). The net effect of these elements is an improvement of 50% or greater in patients' depressive symptoms over a 12-month period (Unutzer & Park, 2012). Goodrich et al., 2013 finds that in addition to increased medication adherence, quality of life, remission of symptoms and patient satisfaction, patients treated through CCMs also have lower medical costs, cardiovascular events and chronic pain (Goodrich, Kilbourne, Nord, & Bauer, 2013). CCMs have also shown transcultural efficacy, which is of critical importance considering Southern California has a largely Hispanic and Spanish speaking population. One retrospective study measuring the effectiveness of a CCM in treating a diverse Spanish speaking population found that 77% of participants experienced a 50% reduction in depressive symptoms, followed by 51% of English-speaking Hispanics (Sanchez & Watt, 2012).

A validated screening tool is instrumental to an effective UDS protocol, and the patient health questionnaire (PHQ-9) has been found to meet screening standards for the ambulatory care setting (Arroll et al., 2010). The PHQ-9 has also been researched and validated as an effective tool to utilize for men, women and individuals prescribed pharmacological treatments (Lowe, Schenkel, Carney-Doebbeling, & Gobel, 2006). In consideration of a high percentage of primarily Spanish speakers in this population, the PHQ-9 has also been validated as an appropriate instrument to use when screening for major depression (Munoz-Navarro et al., 2017). The scale is scored from 0-27 and is subdivided into rankings defining severity of depressive symptoms as 0-4 equaling no risk, 5-9 mild, 10-14 moderate, 15-19 moderately severe, and 20-27 severe risk (Munoz-Navarro et al., 2017). Multiple studies have explored the PHQ-9s sensitivity and specificity with various populations and symptomatic presentation showing mixed results, but in combination with the Diagnostic Statistical Manuals diagnostic algorithm the PHQ-9s sensitivity was found to be 88% with a specificity of 80% with scores of ≥10 (Munoz-Navarro et al., 2017).

Methods

Framework

Avedis Donabedian designed a quality of care framework in the 1960's that has shaped the evolution of conceptual frameworks and their impacts on care coordination. Due to its impact on quality of care services and its simplicity, it was chosen as the model through which this evidence-based project was structured. The Donabedian model is composed of three intimately linked concepts that compose the elements of medical health service. The first are the *structures* of health care, which are the organizational and physical pieces of care settings (Donabedian, 2005). Specifically, these consist of facilities, personnel, equipment, organizational processes,

etc. (Donabedian, 2005). The second component of the model is dedicated to the *processes* of

patient care, as these are dependent on the mechanisms and resources of the "*structures*" in order

for staff to provide necessary patient care activities (Donabedian, 2005). The third component

consists of the *outcomes* of the executed *processes*, which results in recovery, patient

satisfaction, functional restoration, etc. (Donabedian, 2005). This model provided a natural and

fluid approach to navigating the interlinked components of the project and allowed for utilization

of quantitative and qualitative research.

Project Approval

The Institution Review Board at the University of San Diego granted this project exempt

status. The defined criteria by the federal government for research or clinical investigation was

not met. Approval from administration at the community health center was obtained and no

written or verbal consent was required beyond their blessing in order to conduct the analysis as it

was retrospective in nature.

Description of the Protocol/Project

The purpose of this EBP project was to retrospectively analyze a universal depression

screening protocol at an integrated community healthcare center in Southern California. The

protocol in place was structured through the collaborative care model, as previously described,

and consisted of primary care providers (PCPs), in house behavioral health (BH) providers, CMs

and psychiatric providers. As previously mentioned, dates for evaluation ranged from

02/01/2018 to 11/30/2018 as a result of the electronic administration of the PHQ-9. Upon

completion, the computer tablet would transmit the PHQ-9 results to the electronic health record

(EHR) requiring the medical assistant to accept the forms into the EHR, which are then to be

reviewed by the PCP and addressed with the patient. Scores of ≥10 were flagged for further

assessment, and referral to behavioral health care management (BHCM), if the patient expressed

interest post-score review with the PCP. If the patient agrees to further assessment, a warm hand-

off would be performed from the PCP to the CM. The CM at this point would conduct a mental

health brief and determine the extent of necessary intervention. If an indication of immediate

crisis is identified, the CM would establish an action plan with the patient to include

psychoeducation, instruction for the crisis hotline, inclusion of social services, etc. A

determination for appropriate BH services would be established at this time and the CM would

schedule patients for psychiatric and/or BH services prior to ending the mental health brief.

Patients were allowed to follow up at a later date to set appointments if they were unable to do so

at this time.

   In order to simplify the analysis process, and mitigate the moving target of aging, it was

established that the review would be performed on new patients to the clinic that were ≥18 yrs.

old starting 02/01/2018. These patients were presenting for primary care services as new patients

in the clinic. The workflow process of the UDS was to be evaluated through the BHCM

referral/evaluation for these patients with a PHQ-9 score of ≥10 as well to determine what

percentage made an appointment for BH services at the time of their mental health brief with the

CM. An assessment of the show/no show rate was conducted, and finally an investigation into

the percentage of patients who followed up ≥ 2 times and completed ≥ 2 PHQ-9.

   Project processes included individually meeting with all members of the collaborative

care team in order to assess each team members' understanding of role specific responsibilities.

This student then shadowed a new patient presenting to establish primary care services in order

to observe the workflow process. Collection of the necessary data was coordinated with the IT

department of the clinic. The IT department was able to provide the necessary data with limited

information, protecting sensitive patient data. Dates of birth and linked identification numbers were utilized to account for appointments, questionnaire scores, follow ups and other components necessary for the analysis. A data analyst was recruited and approved by the FQHC administrative staff. The analysis was able to be conducted utilizing Microsoft excel and utilized a quantitative approach. No ethical concerns or dilemmas were identified for this project as all patient data was limited and protected.

Results

Analysis of acquired data was extensive and underwent multiple revisions. Initially there were critical data components missing that prevented accurate analysis (i.e. visit dates, identification numbers, PHQ-9 scores, etc.). Once these were obtained, initial findings indicated that PHQ-9 screening was occurring approximately 50+% of the time. In order to account for missing data or miscalculation, multiple more data sets were requested from the IT department in order to conduct a comparison of findings across the various data sets. Results were validated and there were 1,577 new patients identified between the time range who met criteria for UDS. A total of 890 of those were screened equaling 56% of those who met criteria. In order to determine why 44% of patients who met criteria for UDS at the time of their initial visits, a sample of 10 charts were pulled for review. Chart audit of this small sample revealed that 50% of this sample had been administered the PHQ-9 questionnaire through the computer tablet system, but the scores hadn't been accepted into the EHR by medical assistants or reviewed by PCPs. Within this 50% all the other elements of an appropriate execution of workflow were identified however (i.e. documentation of warm handoff, CM mental health brief, appointment for psych/BH services, etc.). The other 50% of this sample however had no record of the PHQ-9 having been

administered at the initial primary care visit, and there was no documentation as to the reason why the UDS protocol hadn't been utilized.

The next element of the data analysis was to determine how many patients ≥18 yrs. old that had been screened for depression with the PHQ-9 at their initial visit scored ≥10, which would flag them for further assessment by the PCP. A total of 133 (out of 890) had scored ≥10. A score of 15 on the PHQ-9 was the most commonly resulted score with a total of 16 patients. Of these 133, 102 patients had an order placed for a BHCM referral after the PCP discussed the option for further mental health evaluation. This totaled 77% of patients who had the appropriate referral placed. PCPs do have the option to place behavioral health therapy (BHT) referrals or psychiatry referrals directly, but this has been addressed in weekly lunch meetings and discouraged as doing so can undermine the UDS protocol and creates a tracking challenge when attempting to determine if the appropriate sequence of events occurred when stepping up patient services. As a result of this option for PCPs, 6% of these patients (without a BHCM referral) were found to have a direct referral for BHT or psychiatry placed by the PCP in order to escalate the patient's mental health concerns. The remaining 17% of patients simply had no order placed. A sample of 10 patients were pulled from 23% that had either an alternative referral type or no referral type placed and a chart audit was performed. The chart audit revealed that 2 patients with no referral type were already receiving services at another facility, 4 patients had a warm handoff and CM involvement during their visit (this resulted in 3 BHT referrals and 1 who had no referral placed), 3 patients didn't have a warm handoff (1 of these was referred to the opioid treatment program, 1 had no documentation of addressing the PHQ-9 score and 1 decided to allow the PCP to self-manage), and 1 patient had PCP documentation of denial of symptoms but

no documentation was found stating the reason for not referring or patient refusal of escalation of services.

The next step in data analysis was to examine the number of patients who scheduled an appointment for BH services at the time of their BHCM assessment. Analysis revealed that a total of 52 patients scheduled appointments for BH services. 62% of these patients chose to receive treatment through psychotherapy alone, 12% chose psychiatric services were desirable and 27% sought combination therapy and scheduled both psychiatric and BHT appointments. This led to an examination of the show rates for initial BH visits and 35 patients showed up for their initial evaluation with BH practitioners. Respectively, this turned out to be an 80% show rate for initial psychiatric evaluations and a 70% show rate for initial BHT evaluations.28 of the 35 patients continued to follow for ≥2 visits, generating a 100% follow up rate for psychiatric patients and a 78% follow up rate for BHT patients.

The final part of this retrospective analysis was to determine how many patients that had followed up ≥2 times and also completed ≥2 PHQ-9 questionnaires. What did their scores reflect over time? We found that a total of 9 patients had completed between 4 – 7 PHQ-9 over the course of the 46-week time period of the analysis. Gaps in care were identified with patients demonstrating long breaks and inconsistency with follow up appointments. One patient for example presented with a PHQ-9 score of 24 and was treated over an 11-week period to a score of 0. After a 20-week loss to follow up, he returned to the clinic with a PHQ-9 score of 23. While this wasn't the case with most of the other patients, this reflects the challenges when working with underserved populations and the complexities of mental health. Furthermore, 3 patients in this analysis completed ≥10 PHQ-9, which demonstrated a compelling course of response to

treatment over the 46-week period. 2 of the 3 patients experienced a > 50% reduction in their

PHQ-9 scores while the 3rd demonstrated no lasting or significant change in their PHQ-9 score.

Cost-benefit analysis

This retrospective analysis didn't require any funding or incur any expenses by the

facility as the protocol was already in place and all the necessary structures and processes were

functional. Effective depression screening in integrated clinical settings is paramount when

taking into consideration that the economic burden of a disorder like major depression in the

United States equaled $210.5 billion in 2010 (Greenberg, Fournier, Sisitsky, Pike, & Kessler,

2015). Systematic reviews have been performed on the cost-benefit of establishing a CCM. Costs

included as part of the calculation consist primarily of staff (i.e. care manager, PCP, psychiatric

provider, psychotropic medications, and behavioral health providers) and providing the service

components of the CCM, which over a 24-month period average out to approximately $597 per

patient (Grochtdreis et al., 2015). Additionally, this model can prevent daily costs losses to the

clinic. When calculating with depression free days (DFD), the approximate calculation of one

DFD for a patient experiencing an MDE prevents a loss of $56.59 per day (Grochtdreis et al.,

2015). This results from the prevention in direct and indirect medical costs in combination with

the prevention of work-related lost productivity (Grochtdreis et al., 2015). These numbers add up

over a 24-month period, and as a patient in an MDE who receives collaborative care can have an

average of 115 DFDs over a 24-month period, this would equate to a loss prevention of

$6,507.85 per patient (Grochtdreis et al., 2015). Theoretically, a DNP student caseload consisting

of 14 patients over a 24-month period would cost $8,358 (14 patients x $597 per patient cost).

The UDS protocol would theoretically generate 1,610 DFDs (14 patients x 115 DFDs). This

creates a potential prevention of $91,109.90 in losses over a 24-month period. The net gain on

maintaining this investment would total $82,751.90 ($91,109.90 - $8,358). The return on

investment in this scenario equals 990% ([$82,751.90/$8358] x 100).

Discussion

Overall findings of the UDS protocol reveal an effective framework with more strengths

than limitations identified. Strengths identified in the workflow include the effectiveness of

medical assistants to set patients up to complete the electronic PHQ-9 questionnaire, well

executed collaboration and communication between the interdisciplinary staff, a clear

understanding of role responsibilities, a willingness to engage in the process with patients and

effective follow up/intervention by involved providers. While the initial inquiry revealed poor

execution of the protocol (56% of patients completing questionnaire) further investigation

implies that the actual number is closer to > 80%. Possible explanations for why this number

isn't closer to 100% include (but aren't limited to) a number of factors. One barrier encountered

was a small number of illiterate patients within this population. One such patient was identified

only after trust had been established with providers, as the patient stated he was too embarrassed

to reveal that he was illiterate and would simply refuse to complete the questionnaire. Other

identified possibilities that would prevent 100% compliance include refusal to complete the

questionnaires, issues with questionnaires uploading, staffing limitations, late arrival of the

patient and acute crisis situations (patient suicidal requiring immediate intervention, activation of

911 in medical emergency, etc.). Recommendations to address the concern with linking 2

separate electronic systems however include the automation of the PHQ-9 acceptance into the

EHR. The process currently involves 4 process by 2 different people. While automating the

review process isn't recommended, a program that prepares the score for the PCP to more

efficiently review the PHQ-9 score would improve electronic tracking. Automating this process can reduce the risk of human error.

Recommendations were also made for documentation by the PCP that scores were reviewed with patients and escalated or denied as a result of their concordance. This would provide clarity at future points of protocol analysis. Additionally, CMs receive weekly reports of patients that require closer monitoring pending BH service initial visits, and for patients who score anything other than a 0 on PHQ-9 question number 9 (assessment of suicidal ideation). It was advised that the IT department track weekly visits that don't have accepted and reviewed PHQ-9 scores and add these to the CMs weekly report if the process is unable to be automated. The CM is intimately involved in determining appropriate BH services making this an ideal role to intervene at this step in improving the efficiency of the protocol.

The most challenging recommendation comes when confronting habit. PCPs have concerns for potentially litigious situations and prefer the freedom to order and document as they find necessary. Redundancy in duplicate orders and compulsive ordering was discovered when analyzing the data that revealed a number of situations where the workflow and appropriate services were ordered and took place, but the incorrect referral type was ordered. This complicated tracking when determining the effectiveness of the workflow. Standardizing the BHCM referral for all PHQ-9 scores of ≥10 would remedy this situation and simplify tracking. This has been attempted multiple times in the past and continues to be a point of revision. Limitations of the study include a limited IT staff, small size of the outpatient clinical setting, small sample size and no advanced statistical methods were utilized in the analysis process.

Overall the findings were robust with accurate analysis of the data sets. Initial findings were worrisome for necessary PHQ-9 screening, but in-depth analysis reveals that the current

protocol is rather effective and would most likely benefit from automation of sequences and standardization of procedures. The protocol eases burden across the interdisciplinary team creating the necessary situation for a sustainable procedure that stands to improve patient outcomes, reduce patient care costs and reduce burden on the interdisciplinary team.

References

Ahrnsbrak, R., Bose, J., Hedden, S. L., Lipari, R. N., Park-Lee, E., & Tice, P. (2016). *Key Substance Use and Mental Health Indicators in the United States: Results from the 2016 National Survey on Drug Use and Health* (HHS Publication No. SMA 17-5044, NSDUH Series H-52). Retrieved from https://www.samhsa.gov/data/

Archer, J., Bower, P., Gilbody, S., Lovell, K., Richards, D., Gask, L., ... Coventry, P. (2012, October 10). Collaborative Care for Depression and Anxiety Problems. *The Cochrane Database of Systematic Reviews*. https://doi.org/10.1002/14651858.CD006525.pub2

Arroll, B., Goodyear-Smith, F., Crengle, S., Gunn, J., Kerse, N., & Fishman, T. (2010). Validation of PHQ-2 and PHQ-9 to Screen for Major Depression in the Primary Care Population. *The Annals of Family Medicine*, *8*(4), 348-353. https://doi.org/http://doi.org/10.1370/afm.1139

Ayanian, J. Z., & Markel, H. (2016, July 21). Donabedian's Lasting Framework for Health Care Quality. *New England Journal of Medicine*, *375*(3), 205-207. https://doi.org/10.1056/NEJMp1605101

Bao, Y., Druss, B. G., Jung, H., Chan, Y., & Unutzer, J. (2016). Unpacking Collaborative Care for Depression: Examining Two Essential Tasks for Implementation. *Psychiatric Services*, *67*(4), 418-424. https://doi.org/http://doi.org/10.1176/appi.ps.201400577

Community Preventive Services Task Force. (2012). Recommendations from the Community Preventive Services Task Force for Use of Collaborative Care for the Management of Depressive Disorders. *American Journal of Preventive Medicine*, *42*(5), 521-524. https://doi.org/http://doi.org/10.1016/j.amepre.2012.01.010

Coventry, P. A., Hudson, J. L., Kontopantelis, E., Archer, J., Richards, D. A., & Gilbody, S. (2014). Characteristics of Effective Collaborative Care for Treatment of Depression: A Systematic Review and Meta-Regression of 74 Randomized Controlled Trials. *PLoS ONE*, *9*(9). https://doi.org/http://doi.org/10.1371/journal.pone.0108114

Donabedian, A. (2005, December). Evaluating the Quality of Medical Care. *The Milbank Quarterly*, *83*(4), 691-729. https://doi.org/10.1111/j.1468-0009.2005.00397.x

Gilbody, S. (2006). Collaborative Care for Depression. *Archives of Internal Medicine*, *166*(21). https://doi.org/http://doi.org/10.1001/archinte.166.21.2314

Goodrich, D. E., Kilbourne, A. M., Nord, K. M., & Bauer, M. S. (2013, August). Mental Health Collaborative Care and its Role in Primary Care Settings. *Current Psychiatry Reports*, *15*(8), 383. https://doi.org/10.1007/s11920-013-0383-2

Greenberg, P. E., Fournier, A., Sisitsky, T., Pike, C. T., & Kessler, R. C. (2015, February 2015). The Economic Burden of Adults with Major Depressive Disorder in the United States (2005 and 2010). *Clinical Journal of Psychiatry*, *76*, 152-162. https://doi.org/http://0-dx.doi.org.sally.sandiego.edu/10.4088/JCP.14m09298

Grochtdreis, T., Brettschneider, C., Wegener, A., Watzke, B., Riedel-Heller, S., Harter, M., & Konig, H. (2015). Cost-Effectiveness of Collaborative Care for the Treatment of Depressive Disorders in Primary Care: A Systematic Review. *PLoS ONE*, *10*. https://doi.org/http://doi.org/10.1371/journal.pone.0123078

Hunter, C. L. (2009). *Integrated Behavioral Health in Primary Care: Step-by-step Guidance for Assessment and Intervention*. Retrieved from https://www.apa.org/pubs/books/4317177

Jacob, V., Chattopadhyay, S. K., Sipe, T. A., Thota, A. B., Byard, G. J., & Chapman, D. P. (2012). Economics of Collaborative Care for Management of Depressive Disorders: A

Community Guide Systematic Review. *American Journal of Preventive Medicine*, *42*(5), 539-549. https://doi.org/http://doi.org/10.1016/j.amepre.2012.01.011

Jia, H., Zack, M. M., Thompson, W. W., Crosby, A. E., & Gottesman, I. I. (2015, February 7). Impact of Depression on Quality-Adjusted Life Expectancy (QALE) Directly as Well as Indirectly Through Suicide. *Social Psychiatry and Psychiatric Epidemiology: The International Journal for Research in Social and Genetic Epidemiology and Mental Health Services*, *50*(6), 939-949.

https://doi.org/http://dx.doi.org.sandiego.idm.oclc.org/10.1007/s00127-015-1019-0

Lowe, B., Schenkel, I., Carney-Doebbeling, C., & Gobel, C. (2006, January-February). Responsiveness of the PHQ-9 to Psychopharmacological Depression Treatment. *Psychosomatics*, *47*(1), 62-67. https://doi.org/https://doi.org/10.1176/appi.psy.47.1.62

Munoz-Navarro, R., Cano-Vindel, A., Medrano, L. A., Schmitz, F., Ruiz-Rodriguez, P., Abellan-Maeso, C., ... Hermosilla-Pasamar, A. (2017, August 9). Utility of the PHQ-9 to Identity Major Depressive Disorder in Adult Patients in Spanish Primary Care Centers. *BMC Psychiatry*, *17*(291). https://doi.org/10.1186/s12888-017-1450-8

Sanchez, K., & Watt, T. T. (2012, December 6). Collaborative Care for the Treatment of Depression in Primary Care with a Low-Income, Spanish-Speaking Population: Outcomes from a community-based program evaluation. *The Primary Care Companion for CNS Disorders*, *14*(6). https://doi.org/10.4088/PCC.12m01385

Simon, G. E. (2002). Evidence Review: Efficacy and Effectiveness of Antidepressant Treatment in Primary Care. *General Hospital Psychiatry*, *24*(4), 213-224. https://doi.org/https://doi.org/10.1016/S0163-8343(02)00198-6

Unutzer, J., & Park, M. (2012, June). Strategies to Improve the Management of Depression in

Primary Care. *Primary Care: Clinics in Office Practice*, *39*(2), 415-431.

https://doi.org/https://doi.org/10.1016/j.pop.2012.03.010