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Increasing Identification and Follow-Up of Older Adult Depression in Primary Care

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Abstract

Introduction: Depression is a common mental health disorder faced by older adults that can go undetected and untreated. It was determined that the project site was not screening for depression among their older patient population. Aims: The purpose of this quality improvement project was to determine if the implementation of the Geriatric Depression Scale-15 (GDS-15) would impact the identification of risk factors for depression and follow-up among adults 65 and older. **Methods:** Implementation started in June 2021 in a primary care office in Southern California. Data was collected for this project over a total of 8 weeks. This project was a quality improvement project designed to implement routine depression screening among older adult patients using the GDS-15. Depressive symptoms were identified, and follow-up and treatment for depression in primary care was initiated if indicated by GDS-15 scores. Data were obtained from the project site's electronic medical record on a total sample size of 443 patients (n = 252 in the comparison group and n = 191 in the implementation group). **Results:** A chi-square test indicated a clinical and statistically significant improvement in the identification rate of depression, X2 (1, N = 443) = 49.76, $P < .0001$; and follow-up rate X2 (1, N = 70) = 23.94, $P < .0001$. Clinical significance was found with an increase in the identification of depression and follow-up of older adults in primary care. Demographic variables were also compared for the QI intervention group patients according to those who scored <5 (n = 134) and patients who scored 5 or greater on the GDS-15 (n = 57) again using chi-square tests. The results showed significant differences between gender ($P = .016$) and primary diagnosis ($P = .006$). **Conclusions:** Findings of this project suggest all older adults should receive a depression screening routinely in primary care to increase the recognition of depression as well as follow-up and treatment.

Keywords

primary care, geriatrics, depression, behavioral health, quality improvement

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Introduction

Depression is one of the most common mental health disorders worldwide and is highly prevalent in older adults. The World Health Organization (WHO) states that the prevalence of depression in older adults is between 10% and 20% globally.[1] It is the leading cause of disability worldwide.[2] Despite the high prevalence of depression and known consequences in older adults, depression continues to be underdiagnosed and undertreated.[2] Stigma and medical comorbidities often contribute to the delay in depression identification and treatment in the older adult population.[2] In 2016, the United States Preventive Services Task Force (USPSTF) recommended routine depression screening in primary care for all adults over 18, regardless of whether they or their healthcare provider felt they were at risk or had any depressive symptoms.[2] Despite this recommendation, in an analysis conducted by the National Ambulatory Medical Care data from 2012 and 2013, depression screening occurred in only 4.2% of all ambulatory care visits.[3] The theory behind the low percentage rate of depression screenings is that due to time constraints in busy ambulatory care offices and the multiple chronic comorbidities facing older adults that primary care physicians (PCP) must manage and treat, screening for depression is not a priority.[3]

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Problem Description

The WHO estimates the number of older adults globally could reach upwards of 2 billion by 2050.[4] Depression in older adults is associated with decreased physical, social, and cognitive abilities and a greater risk of self-neglect and suicide.[4] According to the National Council on Aging (2021),[5] older adults comprise just 12% of the population; however, they make up approximately 18% of suicides.[4] Krishnamoorthy et al[4] stated this population is particularly vulnerable to depression due to the additional stressors of loss, social isolation, and a decline in functional ability and independence. These conditions affect approximately 7% of the older adult global population.[4] Moreover, the WHO estimated about 6% of total Disability Adjusted Life Years (DALYs) are lost due to mental health disorders among older adults.[4] The projected increase in the older adult population and the rise in DALYs deserve focused attention with implementing interventions that facilitate the diagnosis and effective treatment of depression in this population.[4]

Primary care facilities are the optimal setting to screen for depression in older adults.[6] The literature shows that primary care settings are often the first point of contact for patients entering the health care system.[6] Older adults are less likely to visit a mental health specialist for their depression; however, they readily seek primary care for medical and mental health concerns.[6] The purpose of this quality improvement (QI) project was to determine how the implementation of Yesavage's Geriatric Depression Scale-15 (GDS-15) impacted the identification of depression, treatment, and follow-up in a primary care clinic in adults 65 and older. The results of the QI project were then compared to the rates of depression in adults 65 and older prior to the implementation of the GDS-15.

Specific Aim

This quality improvement (QI) project aimed to determine the impact of implementing the GDS-15 on the identification of depression and treatment in adults 65 and older in a primary care office. The primary care office did not have a systematic depression screening process or depression screening instrument in place. Before this QI project, this project site relied on the patient or family's self-disclosure of depression. The clinical question for this QI project was: does implementing a depression screen in adults 65 and older in a primary care office improve the identification of depression and treatment?

Methods

Context

The QI project occurred in a primary care office in Southern California over 8 weeks. Before project implementation, 4 weeks of control data were collected, and then 4 weeks of intervention data were collected post-intervention. This primary care office serves a diverse community population in an underserved area of a large metropolitan city. About 250 patients are seen a month, or 3000 patients a year. About 80% of the patient population at this site is over the age of 65.

With approval from the healthcare providers and owners of the primary care clinic, the primary investigator initiated this QI project. The health care providers involved in this project included the front desk staff, licensed vocational nurses (LVNs), and primary care providers (PCPs). Once IRB approval and the site authorization letter were received, the PCPs, LVNs, and front desk staff attended an implementation meeting of the QI project. The team was introduced to the QI project, the rationale for implementing the GDS-15, and the process for collecting data. Convenience sampling was used. The inclusion criteria were adults 65 or older, able to read and understand English. Participation in this project was voluntary.

Intervention

The intervention in this QI project was to screen for depression in patients 65 years and older in a primary care office using the GDS-15. All older adults 65 and older who presented to the primary care office were assessed for eligibility by the front desk. Once eligibility was determined, the front desk staff notified the LVN, who administered a paper copy of the GDS-15 to the patient. In some instances, the GDS-15 was read to the patient as the patient answered the questions, and in other cases, the patient chose to read the GDS-15 to themselves with the guidance of the LVN present. Once completed, the GDS-15 form was given to the PCP, who reviewed the answers with the patient and explained the results. The GDS-15 was then filed in the patient's secured office chart. All adult patients over 65 who met inclusion criteria were offered the GDS-15. All who met the eligibility criteria agreed to participate.

Older adults who scored 5 or above on the GDS-15 discussed 2 treatment options with their PCP. The first option was to continue follow-up with their PCP for their depressive symptoms, including pharmacological and non-pharmacological treatments. The second option was to receive a referral to a mental health specialist for further treatment and follow-up. These choices were dependent on the GDS-15 assessment and patient preference. If a referral to a mental health specialist was chosen, the patient was given the number to a Medicare provider for mental health in their area by the front desk staff, and their PCP documented this.

Study of the Intervention

The QI project determined whether the number of adults 65 and older identified as depressed or at risk for depression would increase due to a new practice routine of assessing

for depression during a primary care appointment. Data were collected using the primary care office electronic medical record (MR), Practice Fusion. A retrospective chart review was completed for patients 65 and older who were seen at the primary care office 4 weeks prior to the start of the QI project. Patients with a progress note indicating a depression diagnosis or symptoms indicating depression were collected from the EMR. These data provided comparative information on adults 65 and older who were not routinely screened for depression but had a note of self-disclosing depression documented in their medical records.

The QI project data included (1) the number of patients screened using the GDS-15 over 4 weeks of the project; (2) the number of patients with a score of 5 or greater; (3) the number of patients who received follow-up for depression with the primary care provider; (4) number of patients referred to a mental health specialist; and (5) number of patients started on medication for depression.

Measures

The Geriatric Depression Screen (GDS) was used to screen for depression at the primary care office. It was developed by Yesavage et al,[7] specifically for the older adult population, and is one of the most utilized instruments for detecting depression in older adults.[4] The GDS-15, a revised version of the original GDS-30, was used. The GDS-15 was ultimately chosen for this QI project over other widely used tools like the PHQ-9 because it was specifically developed for the older adult population with only simplified yes/no questions and questions specific to their population. The GDS-15 has been utilized in acute and community settings and applied to medically healthy, medically ill, and even cognitively impaired individuals.[4] The GDS-15 is also a self-report measure of depression[8] and is easy to administer (5-10 min).[9] Additionally, the GDS-15 has demonstrated high reliability and validity in older adults,[9,10] with Cronbach alpha coefficients ranging between .83 to .92[9,11] and 95% confidence intervals.[12] A sensitivity of over 90% and a specificity of 89% were found when the GDS-15 was evaluated against diagnostic DSM-5 criteria.[13] Scores of 0 to 4 are considered normal, depending on age, education, and complaints; 5 to 8 indicate mild depression; 9 to 11 indicate moderate depression; and 12 to 15 indicate severe depression.[9] A score of 5 or greater was used in this QI project to indicate depression or depressive symptoms.

Analysis

The results of the GDS-15 were de-identified through the primary care office's EMR by the office manager. Basic demographic data were collected for the group who completed the GDS-15 (age, gender, ethnicity, marital status, and primary diagnosis). Similar demographic information was not collected for the comparison group. All data were placed into a Microsoft Excel spreadsheet. IBM's Statistical Package for the Social Sciences (SPSS) version 27 software was utilized to analyze the data. The clinical question for this QI project was: Does implementing a depression screen in a primary care office increase the identification and follow-up of depression in adults 65 and older when compared to adults 65 and older who were not screened for depression? Pearson's chi-square tests were conducted. Significance was determined a priori at .05.

Ethical Considerations

Institutional Review Board approval was sought from the primary investigator's university. It was determined this was a quality improvement project and did not meet the federal definition of human subject research.

Results

Demographics

The sample included 443 adults 65 and older: 252 in the comparison group (no depression screening in place) and 191 in the implementation group (completed GDS-15 depression screen). Summary statistics were collected for the implementation group for gender, age, ethnicity, marital status, and diagnoses. The majority of those who participated in the GDS-15 screening were female (50.8%), 65 to 84 years old (70.7%), African American (41.4%), and married or partnered (26.2%). The most common comorbidities were heart disease (24.1%), followed by pain (15.2%), diabetes (14.7%), and hypertension (11.5%). Missing data were reported as unknown.

Of the 191 in the QI intervention group, 57 (29.8%) scored 5 or greater on the GDS-15, with the majority (n = 42) scoring in the mild range (73.6%). Whereas 6 scored in the moderate range (10.5%) and 9 in the severe range (15.7%). The majority who scored 5 or greater were female (66.7%), 75 to 84 years (45.6%), and African American (35.1%) with a diagnosis of heart disease (22.8%). Demographic variables were compared for the QI intervention group patients according to those who scored <5 (n = 134) and patients who scored 5 or greater on the GDS-15 (n = 57) using chi-square tests. The results showed significant differences between gender ($P = .016$) and primary diagnosis ($P = .006$). Table 1 displays the findings.

Rates of depression identification between comparison and QI intervention groups. The chi-square test results comparing identification rates are presented in Figure 1. Based on the retrospective chart review of the 252 patients seen 4 weeks prior to the QI implementation, 13 (5.2%) were noted to have a diagnosis of depression or depressive symptoms

Table 1. Comparison Between QI Intervention Group (N = 191) of Those Who Scored <5 and Those Who Scored 5 or Greater on the GDS-15.

	Screened with a score of 5 or above (n = 57)		Screened with a score <5 (n = 134)		
Variable	n	%	n	%	*P*
Gender					.016
Male	14	24.56	57	42.54	
Female	38	66.67	59	44.03	
No data	5	8.77	18	13.43	
Age					.406
65-74	16	28.07	47	35.07	
75-84	26	45.61	46	34.33	
85 or older	5	8.77	19	14.18	
No data	10	17.54	22	16.42	
Ethnicity					.647
Caucasian	15	26.32	31	23.13	
Hispanic/Latino	8	14.04	14	10.45	
Black/African American	20	35.09	59	44.03	
Native American/Native Indian	0	0.00	1	0.75	
Asian/Pacific Islander	5	8.77	12	8.96	
Other	1	1.75	0	0.00	
No data	8	14.04	17	12.69	
Marital status					.305
Single/never married	10	17.54	21	15.67	
Married or domestic partnership	10	17.54	40	29.85	
Widowed	15	26.32	36	26.87	
Divorced	9	15.79	19	14.18	
Separated	1	1.75	4	2.99	
No data	12	21.05	14	10.45	
Primary diagnosis					.006
Hyperlipidemia	1	1.75	2	1.49	
Diabetes	5	8.77	23	17.16	
Hypertension	8	14.04	14	10.45	
Heart disease	13	22.81	33	24.63	
Pulmonary disease	1	1.75	14	10.45	
Chronic pain	9	15.79	20	14.93	
End Stage Renal	4	7.02	1	0.75	
Cancer	4	7.02	11	8.21	
Cerebral Vascular Disease	4	7.02	2	1.49	
Thyroid disease	2	3.51	0	0.00	
Other	1	1.75	10	7.46	
No data	5	8.77	4	2.99	

documented in their medical records. This was with no depression screening tool or process in place and simply relying on the patient self-disclosure of depression. This result contrasts with 57 of the 191 (29.8%) in the intervention group who scored 5 or greater after implementing the GDS-15 during the 4-week QI project. This difference is statistically significant (X^2 (1, N = 443) = 49.76, $P < .0001$).

Provider follow-up between comparison and QI intervention group. The chi-square analysis of provider follow-up indicated a statistically significant difference between the comparison group (n = 6; 46.2%) and the implementation group (n = 55, 96.5%), X^2 (1, n = 70) = 23.94, $P < .0001$) with the implementation group receiving more provider follow-up related to depression.

Pharmacological treatment between comparison and QI intervention group. The chi-square analysis indicated no statistically significant difference between pharmacological treatment in the comparison (n = 3, 23.1%) compared to the QI intervention group (n = 13, 22.8%), X^2 (1, N = 70) = 0.001, $P = .983$.

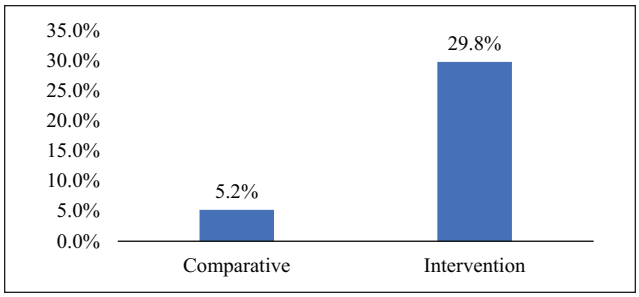

Figure 1. Rates of depression identification between comparison and QI intervention groups.

Referral to mental health specialist between comparison and QI intervention group. The chi-square analysis indicated no statistically significant difference between referral to a mental health specialist in the comparison (n = 2, 15.4%) compared to the QI intervention group (n = 2, 3.5%), X^2 (1, N = 70) = 2.77, P = .096.

Summary

This QI project supports the importance of routinely screening for depression in adults 65 years and older. Based on the 4-week intervention, 29.8% (n = 57/191) of those who completed the GDS-15 scored 5 or greater, indicating mild to severe depression. This result contrasts with only 5.9% of those in the comparison group (n = 13/252) who had documentation of a depression diagnosis or depressive symptoms in their medical record when there was no depression screening tool or process in place. Those at risk for scoring 5 or greater on the GDS-15 in this QI project were: African American females, 74 to 85 years old widowed, and diagnosed with heart disease. These findings are consistent with Gillespie et al[14] who reported a strong link between depression and cardiovascular disease in African American females.

This QI project also highlights the importance of identifying depression and offering treatment. Of the 57 who scored 5 or greater on the GDS-15, 13 were prescribed an antidepressant, and the other 44 agreed to non-pharmacological interventions: reiki, mindfulness, aromatherapy, massage, increased activity, or exercise, as well as group and individual psychotherapy. This finding suggests that adults 65 years and older are willing to engage in treatment once depression has been assessed and identified.

Discussion

The results of this QI project are three-fold. First, adults 65 and older were receptive and willing to be screened for depression in a primary care office. All who met the inclusion criteria agreed to participate, and none chose to terminate participation during the screening process. Second, screening for depression resulted in more adults being identified as depressed or at risk for depression compared to not being screened and depending on self-report of depression to the provider. This difference was statistical significance. Third, those in the QI intervention group who scored 5 or greater on the GDS-15 were receptive to treatment and follow-up. These findings suggest that the answer to the clinical question was affirmative: screening for depression in adults 65 and older does result in the increased identification of depression or those at risk for depression in a primary care office.

The results of this QI project support published literature and recommendations on the benefits of routinely screening for depression in the older adult population in primary care.[1,15-19] Moreover, the results also support the recommendation by the USPSTF, which is to complete a routine depression screening on all adults, with the noted benefits of screening outweighing the risks.[20] From a financial perspective, the Centers for Medicare and Medicaid Service[21] reimburses annual depression screening for up to 15 min on Medicare part B recipients as well as follow-up visits for depression in primary care. Many primary care offices participate in a merit-based incentive program (MIPS) developed by Medicare. With the implementation of a depression screening, they will fulfill a program outcome measure: Preventative Care: Screening for Depression, and Follow-up Care.[21] (QPP, n.d.). If Medicare providers meet all set benchmarks under MIPS, they can receive up to 10% more reimbursement for each patient they see.[22] Implementing a depression screening in primary care will help with Medicare reimbursement revenue and sustain care.

From the primary care office perspective, the healthcare professionals who participated in this QI project were surprised that depression screening using the GDS-15 was a time-efficient and effective way to identify adults 65 and older with depression or those at risk for depression. The depression screening process also opened the space and time during an office visit to focus on the mental health of older adult patients. Moreover, it was discovered that many of the older adults screened with the GDS-15 had never been asked questions about their mental health by their primary healthcare providers prior to the screening. However, when they met with their nurse or primary care provider in private and learned the importance of depression screening, especially during COVID-19, they felt more comfortable and freely answered the GDS-15 items. The QI project suggests that depression in adults 65 and older at this primary care office was more common than anticipated. This QI project also suggests that primary health care providers and their older adult patients needed the cue of action created by the depression screening intervention to engage in help-seeking behaviors critical for improved mental health outcomes. It is also essential to consider that most adults 65 and older in this QI project scored in the mild range on

the GDS-15 (score of 5-8). Identifying depressive symptoms early and suggesting interventions that can have a positive mental health impact has the potential to prevent or minimize mental health decline and worsening of depression.

Limitations

There are 5 significant limitations of this QI project. The most critical limitation is the lack of demographic data on the comparative group. Because of this, it was not possible to compare the 2 groups on demographic characteristics or make comparisons related to depression. What can be reported is that only 5.2% of the 252 adults 65 and older seen during the 4-week period prior to the intervention had medical documentation of a depression diagnosis or depressive symptoms. Based on the results of the QI intervention, this is a significant under-reporting of depression or depressive symptoms when adults are not screened.

The second limitation is social desirability. Many of the patients might have wanted to "please" their healthcare provider by participating in the depression screen and might have underestimated their feelings. Third, the sample was obtained from a single metropolitan primary care clinic. This single site affects the generalizability of the findings. Fourth, finding Medicare mental health specialists for outpatient follow-up proved a significant challenge. Therefore, establishing relationships between primary care providers and mental health specialists before implementation is of utmost importance. Last, retrieving the data from the EMR by a third person (eg, the office manager) did not provide the nuance needed to delve into the data in depth. Although the number of adults who scored in the mild, moderate, and severe range on the GDS-15 was reported, the demographics for these adults were not. Therefore, it was impossible to assess for differences between the groups who scored in those ranges.

Conclusion

Despite the above limitations, the results of this QI project are significant. Increasing the identification, treatment, and follow-up of older adult depression in primary care was achieved and is sustainable. Recommendations for practice and future projects are suggested with this QI project.

Clinical Implications

The first and most crucial recommendation is to build relationships between primary care providers and mental health specialists to ensure follow-up can be provided if warranted for the older adult. Family and geriatric nurse practitioners could bridge this gap in primary care and be at the forefront of implementing and conducting depression screenings in this setting. Then psychiatric/mental health nurse practitioners can be there for the diagnosis, treatment, and follow-up collaboration in primary care. According to the AANP,[23] 88.9% of nurse practitioners are certified in primary care, and 81.0% of all full-time NPs provide care to Medicare patients. The lack of a collaborative relationship between primary care providers and mental health providers was the most challenging aspect of this project. Nurse practitioners could help to close this gap.

Another recommendation is for primary care providers to increase their knowledge and understanding of complementary and alternative medicine (CAM) options available to treat depression. This QI project demonstrated that many older adults would try a CAM therapy option before an antidepressant. The requests for CAM therapies in this QI project included: reiki, mindfulness, aromatherapy, massage, increased activity, or exercise, as well as group and individual psychotherapy. The high request for non-pharmacological treatment options left the primary care providers struggling to educate themselves on the outcomes and benefits of these therapies in treating depression. The use of CAM is particularly relevant for those adults with mild levels of depression.

Finally, adults 65 and older should receive a depression screen using a valid and reliable tool routinely when seen, not just when self-disclosing depressive symptoms or when providers suspect depression. Implementing a depression screening as part of a standardized intake or annual physical assessment would be proactive. Results from this screening can begin an otherwise difficult conversation between the older adult and their provider and allow for a follow-up discussion if warranted by the screening.

Future QI Projects

A longitudinal project that includes a comprehensive assessment of follow-up appointments and treatment options for depression should be attempted. It would be of great interest to see how many older adults continued to follow up with treatment for their depression, as well as to know the number of older adults who decided to go on an antidepressant or switch to a referral to a mental health specialist after their initial depression follow-up visit in primary care. This follow-up over a more extended period to measure patient treatment outcomes, whether in primary care or with a mental health specialist, would be valuable in guiding primary care practice.

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Author Contributions

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