Journal of Primary Care & Community Health
2017, Vol. 8(4) 233–238

DOI: 10.1177/2150131917714929
journals.sagepub.com/home/jpc
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Personality Disorders in Primary Care: Impact on Depression Outcomes Within Collaborative Care

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Abstract

Background: Individuals with personality disorders (PDs) are high utilizers of primary care and mental health services; however, they struggle to utilize the care effectively and studies have shown a strong association between having a PD and higher impairment in social role functioning. This is especially important because PDs are highly comorbid with a wide range of other mental health disorders. The collaborative care model (CCM) for depression was developed with an emphasis on patient engagement and aimed to reduce health care utilization, while improving treatment outcomes in primary care. We hypothesized that the diagnosis of a personality disorder in primary care patients will negatively affect 6-month depression outcomes after enrollment into a CCM. **Methods:** This retrospective chart review study was conducted on patients enrolled into CCM over a period of 7 years with collection of 6-month follow-up data. A total of 2826 patients were enrolled into CCM with a clinical diagnosis of depression and a baseline Patient Health Questionnaire–9 (PHQ-9) ≥10 were included in the study cohort. Using the depression database, baseline and 6-month follow-up data were obtained. Adjusted odds ratios (AORs) were determined for both remission and persistent depressive symptoms using logistic regression modeling for the 6-month PHQ-9 outcome; while retaining all the study variables. **Results:** Of the 2826 CCM patients with depression in our study, 216 (7.6%) were found to have a PD. Patients with PD were younger (37.7 vs 42.5 years, $P < .001$) and more likely to be unmarried (36.1% vs 55.6%, $P < .001$) than patients without a PD. While age, marital status, clinical diagnosis, and Mood Disorders Questionnaire (MDQ) score were significant predictors of remission; anxiety symptoms, gender, and race were not. The presence of a PD diagnosis was associated with a 60% lower likelihood of remission at 6 months (AOR = 0.39; 95% CI 0.28-0.54). Conversely, patients without a PD were 2.5 times as likely to experience remission at 6-month remission compared to patients with PD (AOR =2.57; 95% CI 1.85-3.56). **Conclusion:** Patients with a personality disorder were more likely to have a recurrent depressive disorder diagnosis, an abnormal MDQ score, increased anxiety symptoms, and higher baseline PHQ-9 score. Patients with PD had worse CCM outcomes at 6 months with only 25.0% able to achieve remission versus 54.3% ($P < .001$) without a PD. The presence of a PD with depression was associated with poor outcomes (reduced remission rates and increased persistent depressive symptoms rates) in comparison to patients without a diagnosis of PD, while treated within CCM.

Keywords

health outcomes, primary care, depression, personality disorders, collaborative care

Introduction

Personality disorders (PDs) are characterized by "enduring patterns of inner experience and behavior that deviates markedly from the expectations of the individual's culture, with onset in early adulthood, leading to pervasive, stable and inflexible behavior over time, and causing distress or impairment."[1] The 12-month prevalence in the United States of an individual having any PD is 9.1%.[2,3] PDs are highly comorbid (41.1%-84.5%) with a wide range of mental disorders; specifically the odds of having comorbid major depression disorder (MDD) was 6.1 (CI 3.7-9.9) with the diagnosis of any personality disorder.[4-6]

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People with PDs are associated with an increased utilization of primary care and mental health services.[7-9] Clinical experience with people with PDs suggests that despite the high health care utilization, these patients struggle to utilize the care effectively and often have worsening clinical outcomes.[10,11] Studies have shown a strong association between having a PD and higher impairment in social role functioning with increased odds of disability.[2,12] This association may affect the ability to follow through with treatment goals.

A larger proportion of patients who receive treatment for mental health disorders do so from primary care providers (19%) than psychiatrists (14.3%) or other mental health professionals (17.3%).[2] Within primary care, the collaborative care model (CCM) for depression was developed with an emphasis on patient engagement and aimed to reduce health care utilization, while improving treatment outcomes among patients with medical disorders and comorbid psychiatric conditions.[13-15] At studies at our institution, we have found CCM to generally be more effective than usual primary care.[16-19] Within CCM cohorts, we have found the diagnosis of recurrent depression (vs first episode), depression severity, comorbid anxiety symptoms and an abnormal screening for bipolar disorder negatively affect 6-month outcomes.[20,21] Also, other comorbid psychiatric conditions, like posttraumatic stress disorder, also have been demonstrated to lead to worsening outcomes in CCM.[22]

We hypothesized that the diagnosis of a personality disorder in primary care patients will negatively affect 6-month depression outcomes after enrollment into a CCM.

Methods

A CCM for primary care treatment of depression was implemented at our institution in 2008.[20,23] Our CCM integrated registered nurse care managers into the primary care practices with weekly psychiatry oversight, a depression registry, and relapse prevention. Over the next 2 years, all 5 clinical sites within our practice added CCM. The adult (age 18 years or older) patients were cared for by the providers of the Department of Family Medicine, Division of Primary Care Internal Medicine and Division of Community Pediatrics and Adolescent Medicine at Mayo Clinic in Rochester, Minnesota. The patient population for these clinicians was approximately 50% community based patients and 50% clinic employees and dependents.

This retrospective chart review study was conducted on patients enrolled into CCM from March 1, 2008 through June 30, 2015 with collection of 6-month follow-up data through December 31, 2015. During that time frame, 5715 patients were enrolled into CCM with a clinical diagnosis of depression and a baseline Patient Health Questionnaire–9 (PHQ-9[24]) ≥10. Exclusionary criteria were the following: age <18 years, clinical diagnosis of bipolar disorder, or lack of authorization for research of the patient's electronic medical record (EMR). Of these, 775 patients did not have 6-month follow-up data completed and were excluded from analysis. Another 2114 did not have complete data sets and were also excluded from the analysis (incomplete anxiety or bipolar screening results). Thus, the study cohort was 2826 primary care patients with depression enrolled in CCM. Using the depression database, baseline and 6-month follow-up data were obtained. For this cohort, the diagnosis of PD was determined (yes/no) via an automated query program by reviewing for the presence of a clinical diagnosis of using the ICD-9 (International Classification of Diseases, Ninth Revision) code 301.X prior to or during the study period.

Table 1. Frequency of Personality Disorder Diagnoses in the Collaborative Care Model Cohort.

	Personality Disorder (PD) Diagnosis Cohort (n = 216), % (n)	Total Cohort (N = 2826), %
Borderline PD	53.7 (116)	4.1
Dependent PD	9.7 (21)	0.7
Obsessive compulsive PD	6.0 (13)	0.5
Unspecified PD	30.5 (66)	2.3

The demographic variables recorded were the following: age, gender, marital status (married or not), and race (White or not). The clinical variables collected were the following: clinical diagnosis (first episode or recurrent major depressive disorder or dysthymia); initial PHQ-9 score, Generalized Anxiety Disorder–7 (GAD-7[25] score) and the results of the Mood Disorders Questionnaire (MDQ[26]). The results of the MDQ screen was scored as negative (total score was less than 7 for question 1 and both questions 2 and 3 had a negative response) or as abnormal (any combination, including all, of positive criteria were coded). The predictor variable was the presence or absence of a PD with the outcome variable with the 6-month follow-up PHQ-9 score. Depression remission at 6 months was defined by a follow-up PHQ-9 score of <5 and persistent depressive symptoms (PDS) was defined as a PHQ-9 score of ≥10.[27]

P values <.05 were considered significant and all statistical tests were 2-tailed. Statistical analysis was performed using MedCalc Software (www.medcalc.org, version 14.4.3). This study was reviewed and approved by our institutional review board. Categorical variables between groups were evaluated with chi-square testing, and the Mann-Whitney test was applied for continuous variable comparison between groups due to lack of normality of the distributions. Multiple logistic regression modeling was utilized to examine the association between predictor variables and outcomes, while controlling for and including all other variables.

Results

Of the 2826 CCM patients with depression in our study, 216 (7.6%) were found to have a PD listed among their diagnoses in the EMR (PD group). Table 1 lists the frequency of

Table 2. Comparison of Adult Patients in the Collaborative Care Model, With or Without a Diagnosis of Personality Disorder, by Variable.

	Personality Disorder Diagnosis (n = 216)	No Personality Disorder Diagnosis (n = 2610)	*P*
Age, years, median (range)	37.7 (18.7-92.3)	42.5 (18.0-93.2)	<.001
Gender, female, % (n)	79.6 (172)	74.3 (1939)	.083
Race, white, % (n)	90.7 (196)	94.3 (2460)	.037
Married, yes, % (n)	36.1 (78)	55.6 (1452)	<.001
Diagnosis, % (n)			<.001
First episode	31.9 (69)	51.0 (1,330)	
Recurrent episode	58.8 (127)	41.3 (1079)	
Dysthymia	9.3 (20)	7.7 (201)	
Initial PHQ-9 score, mean (range 10-27)	17.5	15.0	<.001
GAD-7 score, % (n)			<.001
0-4	12.0 (26)	25.7 (671)	
5-9	8.8 (19)	12.4 (323)	
10-14	31.0 (67)	31.0 (809)	
≥15	48.1 (104)	30.9 (807)	
MDQ score, % (n)			<.001
Normal	63.0 (136)	82.5 (2154)	
Abnormal	37.0 (80)	17.5 (475)	
Six-month PHQ-9 score, % (n)			
<5	25.0 (54)	54.3 (1418)	<.001
≥10	53.7 (116)	21.5 (560)	<.001

Abbreviations: PHQ-9, Patient Health Questionnaire–9; GAD-7, Generalized Anxiety Disorder–7; MDQ, Mood Disorders Questionnaire.

PD diagnoses with the diagnosis of borderline personality the most common PD (4.1% of the study cohort) specifically diagnosed.

As shown in Table 2, PD patients were younger (37.7 vs 42.5 years, $P < .001$) and more likely unmarried (36.1% vs 55.6%, $P < .001$) than patients with no PD (NPD group). At index, PD patients were more likely to have a recurrent depressive disorder diagnosis, an abnormal MDQ score, increased anxiety symptoms, and higher baseline PHQ-9 score. Depressed patients with PD had worse CCM outcomes at 6 months with only 25.0% able to achieve remission versus 54.3% in the NPD group ($P < .001$). PDS were noted in 53.7% of the PD group compared with 21.5% in the NPD group ($P < .001$).

Adjusted odds ratios (AORs) were determined for both remission and PDS using logistic regression modeling for the 6-month PHQ-9 outcome; while retaining all of the study variables. Table 3 demonstrates the results for remission (PHQ-9 < 5) at 6 months. While age, marital status, clinical diagnosis, and MDQ score were significant predictors of remission; anxiety symptoms, gender, and race were not. The presence of a PD diagnosis was associated with a 60% lower likelihood of remission at 6 months (AOR = 0.39; 95% CI 0.28-0.54). Conversely, NPD patients were 2.5 times as likely to experience remission at 6-month remission compared to patients with PD (AOR = 2.57; 95% CI 1.85-3.56).

Table 3. Odds Ratios for Remission (PHQ-9 < 5), 6 Months After Enrolling in the Collaborative Care Model for Depression, by Variable (n = 2826 Patients).

	Odds Ratio	95% CI	*P*
Age	1.01	1.00-1.01	.041
Gender (female)	1.01	0.84-1.21	.948
Race (white)	1.17	0.84-1.62	.349
Married	1.19	1.01-1.40	.036
Diagnosis			
First episode	Referent	Referent	
Recurrent episode	0.67	0.57-0.79	<.001
Dysthymia	0.71	0.53-0.96	.025
Initial PHQ-9 score	0.95	0.93-0.97	<.001
GAD-7 score			
0-4	1.23	0.93-1.62	.144
5-9	Referent	Referent	
10-14	0.89	0.73-1.10	.290
≥15	0.85	0.68-1.06	.148
MDQ score			<.001
Normal	1.66	1.35-2.04	
Abnormal	0.60	0.49-0.74	
Personality disorder			<.001
Yes	0.39	0.28-0.54	
Area under the ROC curve	0.649	0.632-0.667	

Abbreviations: PHQ-9, Patient Health Questionnaire–9; GAD-7, Generalized Anxiety Disorder–7; MDQ, Mood Disorders Questionnaire; ROC, receiver operating characteristic.

Table 4. Odds Ratio for Persistent Depressive Symptoms (PHQ-9 ≥10), 6 Months After Enrolling in the Collaborative Care Model for Depression, by Variable (n = 2826 Patients).

	Odds Ratio	95% CI	*P*
Age	1.00	1.00-1.01	.216
Gender (female)	1.05	0.851-1.286	.668
Race (white)	0.63	0.446-0.880	.007
Married	0.87	0.72-1.04	.127
Diagnosis			
First episode	Referent	Referent	
Recurrent episode	1.47	1.22-1.76	<.001
Dysthymia	1.32	0.95-1.83	.102
Initial PHQ-9 score	1.08	1.05-1.10	<.001
GAD-7 score			
0-4	0.77	0.54-1.10	.154
5-9	Referent	Referent	
10-14	1.28	1.00-1.63	.051
≥15	1.37	1.07-1.77	.014
MDQ score			<.001
Normal	0.53	0.43-0.65	
Abnormal	1.90	1.54-2.35	
Personality disorder			<.001
Yes	2.84	2.10-3.84	
Area under the ROC curve	0.69	0.67-0.71	

Abbreviations: PHQ-9, Patient Health Questionnaire–9; GAD-7, Generalized Anxiety Disorder–7; MDQ, Mood Disorders Questionnaire; ROC, receiver operating characteristic.

Table 4 demonstrates the outcome for PDS (PHQ-9 ≥10) at 6 months. Again age, gender, and marital status were not significant predictors of this outcome; while race, clinical diagnosis, anxiety symptoms and MDQ score were significantly associated with PDS at 6 months. While controlling for all the other variables, a diagnosis of PD was associated with a 2.84 times increase in the AOR (95% CI 2.10-3.84) for PDS. Conversely, NPD patients were 65% less likely to have PDS at 6 months (AOR = 0.35, 95% CI 0.26-0.48).

Discussion

The major finding of this study was the finding that presence of a PD with MDD was associated with poor outcomes (reduced remission rates and increased PDS rates) in comparison to patients without a diagnosis of PD, while treated within CCM. This is consistent with our study hypothesis.

The published literature shows multiple studies that document difficulty with engaging with PD patients (who are underdiagnosed and oftentimes, unable to be supported with usual clinical care) there are very few models of care available to offer consistent engagement with this group of patients.[2,10-12] CCM offers a unique approach of engaging this group of patients. With comorbid PD, consideration for therapeutic treatment of PD (referral for psychotherapy) could be considered in these individuals with depression.

Individual characteristics of the different PDs bring forth challenging situations for primary care clinicians.[28] While some patients with PD may present dramatically and in crisis (borderline or histrionic), a different group may present repeatedly due to anxiety or dependent characteristics (anxious, obsessive-compulsive, dependent PD). Some patients in the cluster A (schizoid, paranoid, schizotypal) or C spectrum (avoidant) may avoid health care contact and follow-up leading to medical complications and subsequent high health care utilization, while others (narcissistic or antisocial) demonstrate difficulties in following instructions or treatment recommendations provided to them by authority figures such as health care professionals. The dependent, aggressive, demanding and/or manipulative behaviors of these patients often leave physicians feeling helpless, frustrated, irritated or angry, therefore primary care physicians should be armed with concrete problem-focused tools that are designed to avoid being drawn into the patient's personality traits.[28]

In our cohort, borderline personality was the most commonly diagnosed PD. The other categories are significantly less represented. There are were a relatively high number of many patients labeled as unspecified PD indicating either mixed personality traits or lack of clarity on the part of the diagnosing clinician. This finding may be a function of diagnostic familiarity with borderline PD and/or lack of familiarity with the other PDs. Primary care clinicians may not be aware of the several DSM-5 PD diagnoses or criteria, making diagnosis challenging. Increased awareness through various modes, including occasional reviews of the most up-to-date diagnostic criteria and continuing medical education on PDs may lead to more accurate diagnosis. Improving early diagnosis will contribute to initiation of treatment in a timely manner or referral, if deemed necessary.

One of the greatest areas of impairment in the PD group is social functioning. It may be that despite being part of CCM, it was more difficult for these patients to engage in the program or form trusting relationships with the nurse coordinators. It is clear based on our study that these patients failed to reach depression remission to the same extent as patients without PD. However, it is interesting that this patient group continued to engage with the nurse coordinators for the 6-month period of the study. It is possible that with maintenance of this therapeutic relationship they will reach remission, albeit somewhat slower. Future studies with longer follow-up periods will reveal if this is indeed the case.

It can be difficult for primary care clinicians to accurately diagnose a PD. Future studies could evaluate the self-reported comfort level of PCP in diagnosing and initiating treatment for PDs as failure to make such a diagnosis during early encounters can potentially leads to serious long-term consequences, including undertreatment. Although our study

focuses on adults with PD, previous studies have shown a negative outcome and an increase incidence of self-harm in patients as early as adolescence.[29] These patients are often seen by for routine preventive care and this can be a good opportunity to screen for mental disorders. Though these office visits are usually time constrained, early screening and careful history taking may be beneficial in alerting providers to potential mental health concerns that should be further explored. This will hopefully lead to earlier diagnosis which may be beneficial for treatment. Based on our data, the benefits of CCM to patients with comorbid mental disorders are fully characterized and need further studies.

This current study has several limitations. The prevalence of PD in our sample (7.6%) is less than the prevalence estimated in the national comorbidity survey (9.1%).[2] The national survey used an initial structured interview conducted by professional field staff and a follow-up interview conducted by an experienced psychiatrist. In contrast, this study relied on clinician diagnosis recorded in an administrative database via ICD-9 codes.[30] Relying on clinician diagnosis may underestimate the prevalence of a disease. Once identified with a PD, specific therapies for management would need to be developed for this comorbid population. Additionally, relying on structured ICD-9 data in administrative databases typically underestimates the prevalence of disease.[31-33] It is likely that there are false-negative PD patients in the NPD group thus making the odds ratios found in this study an underestimate of the true effect. Future studies comparing CCM and primary care as usual would be intriguing, as well as a specific focus on borderline PD, as those were the most common PD in our cohort. Treatment studies of comorbid PD and depression could be engaged, such as more aggressive management of depression (medication and/or psychotherapy) as well as concurrent therapy for PD.

Conclusions

The presence of a clinical diagnosis of personality disorder in primary care patients was associated with negative outcomes (remission and persistent depressive symptoms) 6 months after diagnosis within a collaborative care model for depression. Alterations in clinical management could be indicated for a depressed patient with a personality disorder, and future studies as suggested would help clarify these.

Declaration of Conflicting Interests

The author(s) declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

Funding

The author(s) received no financial support for the research, authorship, and/or publication of this article.

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