Use of Psychotherapy by Rural and Urban Veterans

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Abstract

Purpose: To examine whether differences exist between rural and urban veterans in terms of initiation of psychotherapy, delay in time from diagnosis to treatment, and dose of psychotherapy sessions.

Methods: Using a longitudinal cohort of veterans obtained from national Veterans Affairs databases (October 2003 through September 2004), we extracted veterans with a new diagnosis of depression, anxiety, or posttraumatic stress disorder (PTSD) (n = 410,923). Veterans were classified as rural (categories 6-9; n = 65,044) or urban (category 1; n = 149,747), using the US Department of Agriculture Rural-Urban Continuum Codes. Psychotherapy encounters were identified using Current Procedural Terminology codes for the 12 months following patients' initial diagnosis.

Findings: Newly diagnosed rural veterans were significantly less likely ($P < .0001$) to receive psychotherapy (both individual and group). Urban veterans were roughly twice as likely as rural veterans to receive 4 or more (9.46% vs 5.08%) and 8 or more (5.59% vs 2.35%) psychotherapy sessions ($P < .001$).

Conclusions: Rural veterans are significantly less likely to receive psychotherapy services, and the dose of the psychotherapy services provided for rural veterans is limited relative to their urban counterparts. Focused efforts are needed to increase access to psychotherapy services provided to rural veterans with depression, anxiety, and PTSD.

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Use of Psychotherapy by Rural and Urban Veterans

The Department of Veterans Affairs (VA) provides some of the most comprehensive mental health care in the United States. In recent years, the VA has pursued the challenging goal of providing a full spectrum of mental health services for rural veterans.[1] The VA has sought to improve mental health services ranging from screening, assessment, and triage to the provision of high-quality psychotropic medication-management services and evidence-based psychotherapy. Yet little research has addressed the mental health needs of rural veterans,[2] and even less knowledge is available about their use of psychotherapy services.

Findings from the nationally representative National Comorbidity Study indicate that rural residents with a mental health disorder are much less likely to report receiving any mental health treatment (formal or informal), especially specialty mental health care.[3] Findings from the nationally representative Medical Expenditure Panel Survey indicate that, while rural residents with depression are significantly more likely to report receiving pharmacotherapy, they are significantly less likely to report receipt of psychotherapy.[4] Distance to a provider is a significant barrier for care, especially for older adults,[5] and recent evidence suggested that distance to a VA facility is significantly related to fewer psychotherapy services for veterans.[6] Travel time and distance are also significant predictors for receiving minimally adequate care,[6,7] which places patients at greater risk for poorer depression outcomes[8] and in some cases increased mortality.[9]

In a related study using VA databases, 22% of VA patients with a newly diagnosed condition of depression, anxiety, or posttraumatic stress disorder (PTSD) received some form of psychotherapy during the year following their initial diagnosis.[6] Further, only 8% of patients received 4 or more sessions, 4% received 8 or more sessions, and the average delay from diagnosis to first psychotherapy session was 57 days. Although distance to a VA facility was found to be a predictor of psychotherapy exposure, this study did not examine differences in psychotherapy use according to rural or urban status.[6]

Though geography is clearly an important barrier to care in rural areas, it may be insufficient to fully explain lower rates of service utilization. According to the work of Penchansky and Thomas,[10] physical distance may negatively affect the availability and accessibility of care but may fail to directly explain barriers associated with the affordability and acceptability of care. Rural residents may face economic and sociocultural barriers to mental health services beyond mere distance. Perceived social stigma, lack of perceived need, and reduced access to affordable care also may influence mental health care utilization in rural areas.[11,12] Further, rural residents may receive little encouragement from primary social-support networks to seek treatment in the specialty mental health service sector.[13]

The relationship between rurality and psychotherapy utilization has not been examined in the VA health care system. Evidence of rural-urban disparities in access to psychotherapy services is necessary to justify the VA investment in strategies to improve access for rural veterans. If rural veterans do indeed use psychotherapy less frequently than their urban counterparts, improving rural inhabitants' access to psychotherapy is likely to require novel solutions that consider the geographic, economic, and cultural features of rural environs.[14]

The current study sought to examine psychotherapy utilization among rural and urban veterans with a newly diagnosed condition of depression (major depressive disorder, dysthymia, major depression not otherwise specified), anxiety (agoraphobia, anxiety disorder not otherwise specified, anxiety due to a general medical condition, generalized anxiety disorder, obsessive-compulsive disorder, panic disorder, social phobia, specific phobia, and unspecified anxiety states), or PTSD. Specifically, this study sought to examine whether differences exist between rural and urban veterans in terms of psychotherapy initiation, delay and dose (4 or more and 8 or more sessions). In addition to examining rural-urban differences, we sought to identify mediating factors that explained observed rural-urban differences, including sociodemographic factors and travel distance to VA care.

Method

This retrospective administrative database study used patient data from the VA outpatient treatment files, which constitute a national database maintained for all individuals receiving care within the VA system, to create an inception cohort of patients with depression, anxiety, and PTSD.[6] The VA outpatient treatment files contain encrypted patient identifiers that are attached to broad patient and service characteristics (eg, demographic variables, clinical diagnoses, and clinical procedures).

Patient Population

This study focused on rural and urban veterans receiving a new diagnosis of depression, anxiety, or PTSD in VA outpatient facilities during the 2004 fiscal year (October 1, 2003 to September 30, 2004). Using International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM) codes, we extracted and categorized patients into 3 diagnostic groups, as follows: depression (293.83, mood disorder due to a general medical condition; 296.20-296.36, major depressive disorder; 300.4, dysthymic disorder; and 311, depressive disorder not otherwise specified), anxiety (293.84, anxiety due to a general medical condition; 300.00,anxiety disorder not otherwise specified; 300.01, panic disorder without agoraphobia; 300.02, generalized anxiety disorder; 300.09, unspecified anxiety state; 300.20, unspecified phobia; 300.21-300.22, agoraphobia; 300.23, social phobia; 300.29, specific phobia; and 300.3, obsessive-compulsive disorder), and PTSD (308, 309.81). PTSD was separated from other anxiety disorders because of its potential for unique contributions to our analyses, as well as its high prevalence among veterans and its importance

to the VA. The construction of an inception cohort of veterans with newly diagnosed depression, anxiety, and PTSD was chosen for 2 reasons: (1) these 3 conditions are highly prevalent and disabling within the VA patient population[15] and (2) all 3 conditions have strong empirical data to support the use of psychotherapy as a primary or secondary treatment.[16] Restricting the cohort to newly diagnosed mental health conditions allowed for increased assurance that patients in the cohort may have benefited from a trial of psychotherapy. Because the cohort was restricted to new-onset diagnoses of depression, anxiety, and/or PTSD, the study was also able to evaluate time between initial diagnosis and receipt of psychotherapy.

A *new-onset condition* was defined as 6 months without a related diagnosis before the index date (the date of first diagnosis during the study period). To avoid overlapping ICD-9 coding, conditions occurring within diagnostic categories (eg, major depression, dysthymia, depression not otherwise specified) were evaluated collectively and considered as 1 condition. Notably, patients with *multiple new-onset conditions* were classified into more than 1 diagnostic category (eg, a patient with new-onset depression and new-onset PTSD would be classified into both categories for analytic purposes).

Once extracted as having a new-onset mental health condition, patients were excluded if they had used 60 or more inpatient hospital days in the 180 days following the index date (thereby restricting access to outpatient services such as psychotherapy) or if they had died during the 12-month follow-up period. The resulting inception cohort (ie, the cohort receiving a diagnosis of interest within the study year) included 410,923 patients.[6]

Patients' rural-urban status was determined using the US Department of Agriculture Rural-Urban Continuum Codes (RUCC) for 2003. RUCCs include metro and nonmetro counties, ranging from 1 (highly metro) to 9 (highly rural). The most urban and rural codes were chosen for comparative analyses such that urban patients were defined as living within a county with a metropolitan population of 1 million or more individuals (RUCC 1; n = 149,747), and rural patients (n = 65,044) were defined as living within classification codes 6 (urban population of 2,500 to 19,999, adjacent to a metro area), 7 (urban population of 2,500 to 19,999, not adjacent to a metro area), 8 (completely rural or less than 2,500 urban population, adjacent to a metro area), and 9 (completely rural or less than 2,500 urban population, not adjacent to a metro area). Patients living within codes 2 through 5 (populations of 20,000 or more but less than 1 million) were excluded (n = 189,644). Therefore, the final analytic sample included 214,791 patients.

Notably, the RUCC classification system employed in the current study differs from the rural-urban classification system employed by the VA and represents a more conservative criterion for the designation of rural. The VA classification system defines urban areas as those identified by the US Census Bureau as urbanized areas (ie, population centers with a population density of 1,000 or more people per square mile and surrounding areas with a population density greater than 500 people per square mile). All areas not meeting this criterion are classified as rural (or highly rural, which denotes areas with fewer than 7 people per square mile). As such, the VA classification system provides a substantially less stringent definition of rurality than the RUCC-based definition employed in the study and may include many veterans residing in suburban (but not necessarily rural) areas. Therefore, we chose to use the more stringent RUCC definition to improve our ability to detect rural-urban differences.

Psychotherapy Utilization, Delay, and Dose

Patient use of VA-based psychotherapy services was assessed during the 12 months following each patient's index date, using Current Procedural Terminology codes. Total mental health encounters (all specialty mental health care, including psychotherapy) were assessed using the full spectrum of mental health Current Procedural Terminology codes (90,801-90,911, 96,100-96,155). Psychotherapy use was determined on the basis of Current Procedural Terminology codes consistent with psychotherapy without medication management (90,804, 90,806, 90,808, 90,810, 90,812, 90,814, 90,845, 90,846, 90,847, 90,849, 90,853, 90,857, 90,875, 90,876, 96,152, 96,153, 96,154, 96,155). Psychotherapy was further classified by treatment modality into individual and group (individual psychotherapy: 90,804, 90,806, 90,808, 90,810, 90,812, 90,814, 90,845, 90,875, 90,876, 96,152; group therapy: 90,849, 90,853, 90,857, 96,153). Psychotherapy with medication-management codes (90,805, 90,807, 90,809, 90,811, 90,813, 90,815) was not examined in this study, as these procedures were unlikely to use weekly psychotherapy sessions, would potentially inflate the number of patients getting low levels of psychotherapy, and would generally represent a form of mental health treatment outside the focus of the current study.

The total number of psychotherapy sessions was calculated for the 12 months following each patient's index date. Psychotherapy dose was examined based on various session cutoffs to represent minimally adequate care (4 or more and 8 or more sessions). The latter definition was derived from evidence-based treatment guidelines[17,18] and is similar to that used by Kessler and colleagues in their analysis of depression care using data from the National Comorbidity Survey Replication.[19] The

cutoff of 8 sessions also reflects a conservative cutoff where 50% of patients improved in the original dose-response work by Howard et al,[20] but this may be an underestimate of need for naturalistic settings.[21]

As a second measure, we assessed the timeliness of psychotherapy initiation. To assess this construct, the number of days between the first psychotherapy encounter and the patient's index date was calculated.

Sociodemographic characteristics of patients included age, gender, marital status, income (estimated using the average adjusted gross income for each patient ZIP code, based on 2002 Internal Revenue Service data),[6,22] and distance (in miles) to the nearest VA hospital or community-based outpatient clinic (CBOC) from the patients' ZIP codes. Unfortunately, patient race/ethnicity was not highly documented in these administrative data files and therefore was unable to be used for descriptive or predictive analyses. Because of the increased access to care provided to veterans with service-related disabilities, patients were categorized into disability groups, including 0%, 1% to 49%, and ≥50% service connected. Illness burden was assessed using a diagnosis-based, risk-adjustment methodology (DxCG Company, Boston, MA),[23] validated in the VA population.[24] An individual's relative risk score is his/her total predicted cost divided by the average predicted cost of the population, with a score of 1.0 reflecting an average risk.[23,24]

Analyses for this investigation were largely descriptive and comparative in nature. Patients were separated into rural/urban status and compared for statistically significant and clinically meaningful differences using chi-square procedures for categorical (percent) data and *t* tests for continuous variables. Follow-up logistic regression models were used to examine salient factors predicting the receipt of any (one or more) and 8 or more psychotherapy sessions.

Table 1 Cohort Characteristics by Urban/Rural Status (N = 214,791)

	Urban (RUCC = 1) N = 149,747 (69.72%)	Rural (RUCC = 6-9) N = 65,044 (30.28%)	Significance
Age in years (*M*, SD)	58.5 (14.9)	60.8 (13.4)	<.0001
Gender			
Male	134,816 (90.03%)	60,672 (93.28%)	<.0001
Female	14,931 (9.97%)	4,372 (6.72%)	
Income	M = $46,401 (SD = $22,865)	M = $31,909 (SD = $6,962)	
<$30,485	24,535 (16.39%)	28,070 (43.20%)	<.0001
$30,486-$35,727	24,551 (16.41%)	24,129 (37.14%)	
$35,728-$44,002	36,085 (24.11%)	10,477 (16.13%)	
>$44,003	64,479 (43.09%)	2,295 (3.53%)	
Relative risk score			
<.26	28,223 (19.52%)	12,599 (19.91%)	<.0001
.26-1.00	62,930 (43.53%)	29,530 (46.66%)	
1.01-2.00	27,369 (18.93%)	11,434 (18.07%)	
>2.00	26,061 (18.02%)	9,727 (15.37%)	
Distance to VA in miles	M = 9 (SD = 8)	M = 30 (SD = 22)	
<4	44,135 (29.50%)	5,409 (8.32%)	<.0001
4-9.9	60,054 (40.14%)	2,884 (4.44%)	
10-19.9	33,147 (22.15%)	10,380 (15.97%)	
20 +	12,290 (8.21%)	46,321 (71.27%)	
VA service conn.			
None	93,968 (62.75%)	42,244 (64.95%)	<.0001
1%-49%	28,797 (19.23%)	10,471 (16.10%)	
50% +	26,982 (18.02%)	12,329 (18.95%)	
New onset depression	96,691 (64.57%)	42,516 (65.36%)	<.0001
New onset anxiety	34,484 (23.03%)	16,318 (25.09%)	<.0001
New onset PTSD	30,081 (20.09%)	11,600 (17.83%)	<.0001
No. of outpatient visits (*M*,SD)	13.9 (16.0)	10.6 (10.5)	<.0001

M, mean; SD, standard deviation; PTSD, post-traumatic stress disorder; RUCC, United States Department of Agriculture Rural-Urban Continuum Codes; VA, Veterans Administration.

Results

As described in Table 1, there were small but significant differences between rural and urban patients. Urban patients were somewhat younger, more likely to be female, had higher income levels and were slightly sicker. Urban patients had significantly and substantially more outpatient health care visits.

Length of time between an initial diagnosis of depression, anxiety, or PTSD, and receipt of psychotherapy services was significantly longer ($P < .001$) for the rural veteran group ($M = 102$ days, SD 108; median 59) relative to the urban group ($M = 99$ days, SD 106; median 58), but the magnitude of the difference was not clinically meaningful. For descriptive purposes, mean delays by diagnostic condition are reported in Table 2.

Utilization of specialty mental health care was significantly and substantially lower for rural veterans. Urban veterans were significantly more likely than rural veterans to receive a specialty mental health visit (54% to 41%), any form of psychotherapy (24% to 17%), individual psychotherapy (20% to 15%), or group psychotherapy (8% to 3%) in the 12 months following their initial depression, anxiety, or PTSD diagnosis (Table 2). Significantly fewer rural veterans receiving a diagnosis had 4 or more psychotherapy sessions (5% for rural vs 9% in the urban group). Similar outcomes were found for the 8 or more session cutoff (2% for rural vs 6% for the urban group). Exposure to psychotherapy by diagnostic

Table 2 Mental Health and Psychotherapy Visits, 12-Month Follow-up (N = 214,791)

	Urban (n, %)	Rural (n, %)	Significance
Any mental health CPT code	81,450 (54.39%)	26,744 (41.12%)	<.0001
Any psychotherapy	35,472 (23.69%)	10,850 (16.68%)	<.0001
Patients diagnosed with depression	21,738 (22.48%)	6,551 (15.41%)	<.0001
Patients diagnosed with anxiety	5,878 (17.05%)	1,940 (11.89%)	<.0001
Patients diagnosed with PTSD	11,440 (38.03%)	3,622 (31.22%)	<.0001
Any individual	29,882 (19.96%)	9,668 (14.86%)	<.0001
Any group	12,637 (8.44%)	2,259 (3.47%)	<.0001
4 or more psychotherapy sessions	14,172 (9.46%)	3,301 (5.08%)	<.0001
8 or more psychotherapy sessions	8,366 (5.59%)	1,530 (2.35)	<.0001
Mean time elapsed between diagnosis and first visit (days)			
All patients receiving an included diagnosis	M = 99 (SD = 106), Md = 58	M = 102 (SD = 108), Md = 59	
Patients diagnosed with depression	M = 73 (SD = 99), Md = 37	M = 75 (SD = 102), Md = 40	
Patients diagnosed with anxiety	M = 86 (SD = 106), Md = 35	M = 93 (SD = 111), Md = 42	
Patients diagnosed with PTSD	M = 73 (SD = 99), Md = 23	M = 75 (SD = 102), Md = 21	

CPT, Current Procedural Terminology code; PTSD, post-traumatic stress disorder; M, mean
SD, standard deviation; Md, median.

groups revealed consistent and statistically significant differences for patients with depression, anxiety, and PTSD. Patients in rural settings were significantly less likely to be exposed to psychotherapy, regardless of mental health diagnosis (see Table 2).

Of patients that received psychotherapy services (n = 46,322; 22% of full sample), the mean number of sessions attended was 6.50 (SD 10.46) for urban and 4.23 (SD 6.56) for rural veterans ($P < .001$). Of those that received individual psychotherapy (n = 39,550), the mean number of sessions was 3.65 (SD 4.84) for urban and 2.99 (SD 3.53) for rural veterans ($P < .001$). Of those that received group psychotherapy (n = 14,896), the mean number of sessions was 9.90 (SD 13.48) for urban and 7.68 (SD 10.12) for rural veterans ($P < .001$).

Tables 3 and 4 report the results of the logistic regression analysis predicting receipt of one or more and 8 or more psychotherapy sessions. The prediction of receipt of one or more sessions of psychotherapy revealed significant contributions for age, gender, marital status, income, VA service connection, type of mental health diagnosis, medical illness, distance, and rural/urban status (Table 3). Younger veterans, female veterans, veterans with high medical illness burden, and those who lived close to a VA facility had increased odds of receiving psychotherapy. Notably, rural veterans had significantly lower odds of receiving one or more psychotherapy sessions (OR = .85), even after controlling for the other variables in the model (including distance). Other notable findings suggest that patients with PTSD are over 2.5 times more likely to obtain psychotherapy than patients receiving diagnoses of depression and/or anxiety (OR = 2.67). Veterans diagnosed with anxiety were less likely to receive psychotherapy than those diagnosed with depression or PTSD (OR = 0.90). Veterans with a service connection status of 50%+ were less likely to receive psychotherapy services (OR = 0.63) than veterans with less than a 50% service connection.

The prediction of 8 or more sessions produced similar findings to those for the prediction of any psychotherapy, with some changes in the intensity of the ORs (Table 4). For example, the impact of rural/urban status was increased as rural veterans possessed an OR of 0.63, veterans with anxiety were less likely to receive 8 or more sessions (OR = 0.73) while veterans with PTSD were much more likely to receive 8 or more sessions (OR = 3.24), and patients in the highest medical comorbidity grouping were 3 times more likely to receive 8 or more sessions (OR = 3.11).

Discussion

Consistent with prior literature, rural veterans in this study were generally older and had lower socioeconomic status relative to urban veterans. Rural veterans attended far fewer medical and mental health VA outpatient visits. This study also documented important psychotherapy utilization differences between rural and urban veterans. Though overall psychotherapy utilization among all VA users is low and potentially represents a missed opportunity for improved mental health care within the VA,[6] the current study found that rural veterans are significantly less likely to receive any psychotherapy services relative to their urban counterparts, even after controlling for travel distance and other demographic and clinical

Table 3 Logistic Regression Model: Receipt of Psychotherapy (one or more sessions)[a]

	B	SE	Odds Ratio	95%CI
Age group:				
<45				Referent
45-54	−0.25***	0.02	0.78	0.75-0.81
55-64	−0.49***	0.02	0.62	0.60-0.64
65-74	−1.18***	0.02	0.31	0.29-0.32
75+	−1.38***	0.02	0.25	0.24-0.26
Sex:				
Female	0.11***	0.02	1.13	1.08-1.17
Male				Referent
Marital status				
Married				Referent
Unmarried	0.04**	0.01	1.04	1.01-1.06
Income				
<$30,485	−0.02	0.02	0.98	0.95-1.01
$30,486-$35,727	−0.07***	0.02	0.93	0.90-0.96
$35,728-$44,002	−0.04***	0.02	0.96	0.93-0.99
$44,003+				Referent
VA service connection				
None				Referent
1%-49%	0.10***	0.01	1.11	1.08-1.14
50%+	−0.22***	0.02	0.81	0.78-0.83
Mental health Dx[b]				
Anxiety	−0.10***	0.02	0.90	0.87-0.94
Depression	0.10***	0.02	1.11	1.07-1.20
PTSD	0.98***	0.02	2.67	2.57-2.79
Relative risk score				
<.26				Referent
.26-1.00	0.24***	0.02	1.28	1.24-1.32
1.01-2.00	0.66***	0.02	1.94	1.87-2.01
>2.00	0.94***	0.02	2.57	2.48-2.66
Distance (miles)				
0-3.9				Referent
4-9.9	−0.10***	0.01	0.91	0.87-0.93
10-19.9	−0.22***	0.02	0.80	0.77-0.83
20+	−0.34***	0.02	0.71	0.68-0.74
Veterans' residence				
Urban				Referent
Rural	−0.16**	0.02	0.85	0.82-0.88

n = 210,761.

* = .05, ** = .01, *** = .001.

Dx, diagnosis; CI, confidence interval; VA, Veterans Affairs; PTSD, post-traumatic stress disorder; SE, standard error.

[a]Predictor variables were entered as a single block, adjusting for the relationship of other variables.

[b]The referent category for this variable represents the absence of the condition. For example, anxiety was examined as a dichotomous factor and represents a comparison of patients with and without (referent) anxiety.

Table 4 Logistic Regression Model: Receipt of 8 or more Psychotherapy Sessions[a]

	B	SE	Odds Ratio	95%CI
Age group:				
<45				Referent
45-54	−0.07*	0.03	0.93	0.88-0.99
55-64	−0.24***	0.03	0.79	0.74-0.84
65-74	−1.33***	0.05	0.27	0.24-0.29
75+	−1.71***	0.05	0.18	0.16-0.20
Sex:				
Female	0.12***	0.04	1.13	1.05-1.21
Male				Referent
Marital status				
Married				Referent
Unmarried	0.01	0.02	1.01	0.96-1.05
Income				
<$30,485	−0.18***	0.03	0.83	0.78-0.89
$30,486-$35,727	−0.17***	0.03	0.84	0.79-0.90
$35,728-$44,002	−0.12***	0.03	0.89	0.84-0.94
$44,003+				Referent
VA service connection				
None				Referent
1%-49%	0.07**	0.03	1.08	1.02-1.14
50%+	−0.46***	0.03	0.63	0.59-0.67
Mental health Dx[b]				
Anxiety	−0.31***	0.04	0.73	0.68-0.79
Depression	0.00	0.04	1.00	0.93-1.07
PTSD	1.17***	0.04	3.24	3.01-3.48
Relative risk score				
<.26				Referent
.26-1.00	0.23***	0.03	1.26	1.18-1.34
1.01-2.00	0.75***	0.04	2.12	1.98-2.28
>2.00	1.13***	0.03	3.11	2.91-3.33
Distance (miles)				
0-3.9				Referent
4-9.9	−0.14**	0.03	0.87	0.82-0.92
10-19.9	−0.37***	0.03	0.69	0.65-0.73
20+	−0.55***	0.04	0.57	0.53-0.62
Veterans' residence				
Urban				Referent
Rural	−0.46***	0.04	0.63	0.59-0.68

n = 210,761.

* = .05, ** = .01, *** = .001.

Dx, diagnosis; SE, standard error; CI, confidence interval; VA, Veterans Affairs; PTSD, post-traumatic stress disorder.

[a]Predictor variables were entered as a single block, adjusting for the relationship of other variables.

[b]The referent category for this variable represents the absence of the condition. For example, anxiety was examined as a dichotomous factor and represents a comparison of patients with and without (referent) anxiety.

characteristics. Of patients who received psychotherapy services, urban veterans were more likely, relative to rural veterans, to receive services meeting criteria for minimally adequate exposure (eg, 4 or more and 8 or more sessions), even after controlling for travel distance and other demographic and clinical characteristics. This finding suggests that there are additional sociocultural barriers to psychotherapy initiation and engagement for rural veterans and that distance alone is insufficient to account for differences in utilization of psychotherapy services. Access to care is a multidimensional construct that includes availability (perceived awareness of

a provider), accessibility (perceived travel distance to obtain services), affordability (perceived difficulty in meeting out-of-pocket treatment costs), and cultural acceptability (perceived degree to which treatment options meet preferences and needs).[10]

Targeted efforts to improve the access of psychotherapy for rural veterans must be multifaceted and consider all aspects of access, while including patient, provider, and system-level barriers and facilitators to care.[25]

From a system standpoint, the availability and accessibility of psychotherapy can be addressed by increasing the number of outpatient clinics and providers offering evidence-based psychotherapies. Within the VA almost 40% of CBOCs are located in rural areas,[25] and that number is increasing significantly with recent legislative efforts. However, past research suggests that only 26.4% of rural CBOCs have mental health specialists,[26] and even fewer of these mental health specialists are trained in the provision of evidence-based psychotherapy. The VA has recently mandated the presence of mental health providers in all CBOCs. However, recruitment of mental health providers to rural settings remains a challenge,[27] and it may be particularly difficult to attract providers trained in the delivery of evidence-based psychotherapies.

Other system changes such as the incorporation of evidence-based telepsychology interventions may improve access to high-quality mental health care by reducing travel barriers.[28,29] Large randomized controlled trials have shown telepsychology interventions to be effective for the treatment of depression[30] and anxiety disorders,[31,32] and telepsychology has been demonstrated in rural CBOC settings.[33] However, large-scale implementation of telepsychology interventions in rural CBOCs presents unique challenges. Resources must be allocated to acquire and support the necessary technology (eg, videoconferencing equipment) and supply sufficient providers to conduct the interventions. Perhaps equally as important, initiatives supporting the implementation of telepsychology must work closely with stakeholders such as CBOC staff and rural veterans to ensure that the interventions are acceptable and directed toward areas of need. Working with these stakeholders to address potential areas of concern (patient privacy, patient safety, workload burden, administrative issues) will be necessary if telepsychology initiatives are to gain widespread acceptance.

Several provider-level issues also warrant consideration if rural veterans' access to psychotherapy is to be improved. One solution may be to maximize the number of current VA providers offering psychotherapy. Focused training initiatives are needed to increase the number of available clinicians adequately trained to deliver evidence-based psychotherapies. Recent training efforts within the VA have targeted mental health providers in the primary care setting with relatively good success,[34] but additional work is needed to increase access to these training programs for providers in rural areas (eg, video and computer-based training).

The VA has also begun a national program to embed mental health into primary care settings. This program may benefit rural veterans in particular by adding mental health providers in clinics that otherwise would not have such services and by improving communication between primary care providers and specialty mental health teams, thus improving continuity of care.

Patient efforts are also likely needed to increase rural veterans' acceptability of psychotherapy. Changes to the acceptability of psychotherapy may be difficult to attain, as patients often hold long-standing attitudes and beliefs about mental health. For example, rural culture may foster a perceived need for greater self-reliance, independence, and conformity to social norms (whether positive or negative toward mental health treatments) and thereby delay identification of mental health problems, discourage the use of formal services, and encourage the use of informal services such as ministers and traditional healers.[35] Stigma has also been found to be a significant barrier to treatment in rural areas.[12,36]

To address these issues, dedicated educational efforts for patients and providers may facilitate a normalization of formal mental health treatments such as psychotherapy. Community relationships are also pivotal to increasing the acceptability of mental health treatment and might include partnerships with local mental health champions to further reduce treatment myths and stigma. Within the treatment setting, mental health practitioners may want to identify themselves as part of the larger medical team to use existing rapport the patient has with his/her primary care providers and to avoid the stigma associated with mental health treatment.

Limitations and Next Steps

The use of administrative databases was both an asset (allowing for a large-scale investigation of national VA services) as well as a limiting factor. In general, the use of these databases provided increased external validity at the expense of rigorous internal scientific control. Although administrative data and coding are considered valid and appropriate,[37] inherent with any database study such as this are questions about the reliability and validity of coding for conditions and procedures. For example, it is highly likely that many veterans with significant symptoms of depression, anxiety, and PTSD went unrecognized by their providers and subsequently did not enter

this inception cohort. Further, the dataset did not allow examination of the quality or outcomes of psychotherapy. Other limitations of these data include the need to estimate income based on IRS data and the inability to examine aspects of race/ethnicity because of missing data. Further, we note that these data were collected prior to the introduction of the VA's initiative to improve rural mental health care. In addition to expanding the number of CBOCs serving rural veterans, this VA initiative has mandated that each CBOC have specialty mental health service providers on staff, though recruiting qualified personnel to the most rural CBOCs may prove difficult. The VA has also introduced a number of initiatives to increase the use of empirically supported treatments, including psychotherapeutic interventions such as prolonged exposure and cognitive processing therapy for the treatment of PTSD. In light of these developments, the data presented in the current study may not reflect current VA utilization rates but may provide a useful point of comparison for future studies of mental health service utilization in the VA.

Because the definition of *rurality* used in the current study differs from the definition used by the VA, caution must be exercised in using the results in VA policy formulation and decision-making. Given the more stringent definition of *rurality* used here, the rural sample almost certainly represents a subset of veterans classified as rural under the VA definition. This subset may be more likely to face greater barriers to care access (ie, it may be "more rural") than the VA-defined rural veteran population as a whole. Additionally, we note that veterans receiving multiple diagnoses were classified in multiple categories (eg, data from a veteran receiving diagnoses of PTSD and depression would be included in both "depression" and "PTSD" categories for the purpose of analysis), which may complicate interpretation of the data. Given the simplistic categorization of these conditions, future studies are needed to better determine the impact of mental health comorbidities on subsequent service utilization. Given that comorbid diagnoses may be more recognizable and disabling, it may follow that individuals with comorbid diagnoses may be more likely to receive psychotherapy, leading to an overestimation of the proportion of veterans receiving psychotherapy in this study.

We also note that the reasons for lower utilization of psychotherapy by rural veterans cannot be determined by the present study. As discussed above, it is thought that issues of acceptability may play a unique role in the rural-urban disparity in utilization of psychotherapy. However, acceptability was not measured directly. The data do demonstrate that lower utilization of mental health services by rural veterans cannot be attributed solely to greater travel distances, suggesting that sociocultural factors are indeed important. However, the data do not provide evidence for the relative importance of these factors. Future investigations should examine the roles that each of these factors plays in limiting the use of psychotherapy by rural veterans.

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