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Et al.

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BACKGROUND: An increasing number of women veterans are using VA maternity benefits for their pregnancies. However, because the VA does not offer obstetrical care, women must seek maternity care from non-VA providers. The growing number of women using non-VA care has increased the importance of understanding how this care is integrated with ongoing VA medical and mental health services and how perceptions of care integration impact healthcare utilization. Therefore, we sought to understand these relationships among a sample of postpartum veterans utilizing VA maternity benefits.

METHODS: We fielded a modified version of the Patient Perceptions of Integrated Care survey among a sample of postpartum veterans who had utilized VA maternity benefits for their pregnancies ($n = 276$). We assessed relationships between perceptions of six domains of patient-reported integrated care, indicating how well-integrated patients perceived the care received from VA and non-VA clinicians, and utilization of mental healthcare following pregnancy.

RESULTS: Domain scores were highest for items focused on VA care, including test result communication and VA provider's knowledge of patient's medical conditions. Scores were lower for obstetrician's knowledge of patient's medical history. Women with depressive symptom scores indicative of depression rated test result communication as highly integrated, while women who received mental healthcare following pregnancy had low integrated care ratings for the Support for Medication and Home Health Management domain, indicating a lack of support for mental health conditions following pregnancy.

DISCUSSION: Among a group of postpartum veterans, poor ratings of integrated care across some domains were associated with higher rates of mental healthcare use following pregnancy. Further assessment of integrated care by patients may assist VA providers and policymakers in developing systems to ensure integrated care for veterans who receive care outside the VA.

KEY WORDS: veterans; care coordination; pregnancy.

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INTRODUCTION

Women veterans represent a growing number of veterans using Veterans Affairs (VA) health benefits. Many of these women are of reproductive age and rely on the VA's maternity care benefits, which include care for the veteran, as well as 7 days of healthcare for the infant. Between 2000 and 2012, more than 12,000 women veterans used VA benefits to deliver their babies.[1]

However, an important area of concern for pregnant veterans is care coordination. Because women remain a numerical minority in the VA and therefore having obstetricians on staff is not a cost-effective strategy to care for pregnant veterans, all maternity care is paid for by VA but provided by community obstetricians. Consequently, pregnant veterans must rely on non-VA maternity care, while often continuing to receive VA care for other conditions, such as musculoskeletal pain and mental health.[2,3]

Recent evidence suggests there have been challenges for women veterans who must receive care from both VA and non-VA providers, including appointment scheduling, sharing of results, and finding a provider in the network.[4,5] Integration of mental health services for pregnant and postpartum veterans is a particular concern. A high prevalence of mental health conditions among pregnant women has been demonstrated,[3] and yet, it remains unclear whether women continue to seek VA care for their mental health conditions during pregnancy or whether they discontinue this care.

In response to widespread concerns regarding veterans' access to VA care, Congress enacted the Veterans Access, Choice and Accountability Act of 2014, which required VA to establish the Veterans Choice Program (VCP). The VCP allowed VA to expand the availability of community care for eligible veterans through enhanced relationships with community providers—including private practices and federally qualified health centers—and federal providers, including the Department of Defense and the Indian Health Service. With the recent passage of the Veterans Affairs Maintaining Internal Systems and Strengthening Integrated Outside Networks (MISSION) Act of 2018, the VA has shifted decision-making regarding non-VA care into the hands of veterans and permanently establishes the commercial health marketplace as a provider of healthcare to veterans.[6]

With these shifts in policy, however, there is an increased need to understand how healthcare across VA and non-VA systems of care is coordinated to ensure veterans receive comprehensive, high-quality care regardless of the source. Challenges to care coordination include fragmentation of critical pieces of patient medical information across providers who share responsibilities for a patient's care.[7,8] Care coordination is especially challenging with regard to health information exchange across health systems as a means to share medical records, as VA is still implementing systems to share these records with non-VA providers.[9] Understanding how well non-VA care is integrated with VA care is of upmost importance for ensuring that women veterans receive care of high-quality care.

Integrated patient care has emerged as a framework for understanding patient-centered care coordination.[8] Consistent with this framework, we define integrated patient care as "patient care that is coordinated across professionals, facilities, and support systems; continuous over time and between visits; tailored to the patients' needs and preferences; and based on shared responsibility between patient and caregivers for optimizing health."[10] The integrated care framework measures five aspects of care coordination, including (1) care coordinated within a care team, (2) care coordinated across care teams, (3) care coordinated between care teams and community resources, (4) care that has continuous familiarity with the patient over time, and (5) care that is proactive and responsive between visits. The framework also includes two dimensions that focus on patient-centeredness. Several studies have examined the relationship between perceptions of integrated care and relationships to utilization of care among non-veteran populations.[11]

To date, no studies have examined the degree to which veterans perceive integrated care between VA and non-VA systems of care. In this study, we administered a validated integrated care survey to a national sample of postpartum women veterans who had received non-VA obstetrical care using their VA maternity care benefits. We performed logistic regressions to assess relationships between perceptions of six domains of patient-reported integrated care. More specifically, this study evaluated the associations between women veterans' perceptions of integrated care and mental healthcare utilization during and following pregnancy.

METHODS

Data Sources

Our sample was comprised of women taking part in a wider study known as the Center for Maternal and Infant Outcomes and Research in Translation (COMFORT).[12] The COMFORT study enrolls pregnant women veterans identified from 15 Veterans Health Administration (VHA) sites across the USA and consists of two telephone surveys: the first during pregnancy and the second after delivery of the infant. These telephone surveys collected information on sociodemographics, military-related characteristics, and pregnancy- and health-related data and included the Edinburgh Postnatal Depression Scale (EPDS) to identify depression symptoms in participants.[13]

Using the prenatal and postnatal COMFORT surveys, we identified demographic, military, pregnancy, infant outcomes, and healthcare utilization variables. We combined categories of race into white vs. non-white, black vs. non-black, and others. Military sexual trauma (MST) was identified through a screener universally adopted by the VA.[14] The presence of an MST experience was identified through an affirmative response to any of the following: received uninvited and unwanted sexual attention while in the military; force or the threat of force was used to have unwanted sexual contact while in the military; or ever received counseling or treatment for military sexual trauma from a VA or non-VA provider. Urban/rural geographic status was identified using participant zip codes and the FY15 VA Planning Systems Support Group (PSSG) file, which assigns geographic regions of urban, rural, and highly rural to zip codes.

Additionally, we obtained data on service-connected disability, Operation Enduring Freedom/Operation Iraqi Freedom (OEF/OIF) status, and healthcare utilization by matching participant social security numbers from our COMFORT sample to VHA administrative files from the VA Corporate Data Warehouse (CDW). The CDW is a repository of data updated nightly from the VHA electronic medical records system for operations and research use. Healthcare utilization included visits for primary care, post-traumatic stress disorder, psychiatric, military sexual trauma, and substance abuse visits, identified through VA Stop Codes. We included any visit that occurred within a pregnancy window of 280 days prior to delivery, as has been done in previous work.[15]

Patient Perceptions of Integrated Care Survey

In addition to the prenatal and postpartum COMFORT surveys described above, participants were mailed the Patient Perceptions of Integrated Care (PPIC) survey following participation in the postpartum telephone survey. The PPIC survey has been previously validated and psychometrically tested.[16] Survey items were developed to assess care coordination within and across care settings and integration of patient and family capabilities, needs, and preferences with a patient's care. Survey development has been previously described.[10] We modified the original PPIC survey to include a total of 54 items used to measure perceptions of integrated care among our sample of postpartum veterans, asking specifically about experiences with VA primary care provider offices, care from other staff at the VA primary care provider's office, and care from outside obstetrical providers. Women veterans who completed the PPIC survey between November 2016 and June 2018 were included in the present analysis.

Analytic Methods

We began by examining descriptive statistics for our sample. Additionally, we calculated descriptive statistics for PPIC responses, including means and standard deviations (SDs) of raw item scores, as well as the percent of responses in the "top box" (the percentage of responses falling into the most positive response category), as has been done in previous PPIC and survey analyses in order to check for ceiling effects.[16,17]

Building on previous PPIC analyses, we conducted a confirmatory factor analysis (CFA) to verify associations between our observed survey responses and the underlying latent constructs developed by previous research.[16] Our survey items loaded onto the following six factors: VA Staff Knowledge about the Patient's History, VA Provider Support for the Patient's Self-directed Care, Test Result Communication, VA Provider Knowledge of the Patient, support for medication and home health management, and obstetrician's knowledge about the patient's medical history. We ran our CFA using PROC CALIS in SAS 9.2 (SAS Institute, Inc., Cary, NC, USA). To utilize all of the available data from our sample, we specified a full information maximum likelihood (FIML) method. Our CFA was evaluated for goodness of fit, with the root mean square error of approximation (RMSEA) of 0.0583, the non-normed fit index (NNFI) of 0.8826, and the comparative fit index (CFI) of 0.9014, indicating a reasonable to adequate fit of our model (Table 1).

After confirming a reasonable fit of our model, we calculated factor scores as the unweighted average of the numeric score items in each factor, where the average was calculated as

Table 1 Factor Loadings from Confirmatory Factor Analysis

Factor	Loadings	
	Unadjusted	Adjusted*
Factor 1: Staff Knowledge about the Patient's Medical History		
In the last year, how often did these other staff seem up-to-date about the care you were receiving from this provider?	0.865	0.822
In the last year, how often did these other staff talk with you about the care you were receiving from this provider?	0.707	0.681
In the last year, how often did these other staff seem to know the important information about your medical history?	0.841	0.782
Factor 2: Provider Support for the Patient's Self-directed Care		
In the last year, did this provider talk with you about setting goals for your health and did the care you received from this provider help you meet your goals?	0.878	0.850
In the last year, did this provider or someone in his or her office ask you about these things that make it hard for you to take care of your health and did you and this provider or someone in his or her office come up with a plan to help you deal with the things that make it hard for you to take care of your health?	0.675	0.667
In the last year, how often did this provider or someone in his or her office help you identify the most important things for you to do for your health?	0.850	0.816
In the last year, how often did this provider or someone in his or her office help you get these services at home to take care of your health?	0.721	0.604
In the last year, how often did the instructions you received help you take care of your health?	0.742	0.743
Factor 3: Test Result Communication		
In the last year, when this provider or someone in his or her office ordered a blood test, X-ray, or other test for you, how often did this provider or someone from his or her office follow up to give you those results?	0.981	0.939
In the last year, how often did you have to request your test results before you got them?	0.758	0.753
In the last year, how often were your test results presented in a way that was easy to understand?	0.529	0.542
Factor 4: Provider Knowledge of the Patient		
In the last year, how often did you have to repeat information that you had already provided during the same visit?	0.340	0.327
In the last year, how often did this provider seem to know the important information about your medical history?	0.661	0.647
How would you rate this provider's knowledge of your values and beliefs that are important to your healthcare?	0.649	0.632
In general, how often did your VA primary care provider seem informed and up-to-date about the care you get from your obstetrical provider?	0.627	0.554
In general, how often did you have to remind your VA primary care provider about the care you received from your obstetrical provider?	0.454	0.420
Factor 5: Provider Support for the Patients' Medication Adherence and Home Health Management		
In the last year, how often did this provider or someone in his or her office talk with you about how you were supposed to take your medicine?	0.767	0.787
In the last year, how often did this provider or someone in his or her office talk with you about what to do if you have a bad reaction to your medicine?	0.835	0.830
In the last year, how often did this provider or someone in his or her office contact you between visits to see how you were doing?	0.498	0.362
In general, how often did your VA primary care provider talk with you about the medicines prescribed by your obstetrical provider?	0.514	0.457
Factor 6: Obstetrician Knowledge about the Patient's Medical History		
When you saw your obstetrical provider, how often did you have to repeat information that you have already given to your VA primary care provider?	0.757	0.819
When you saw your obstetrical provider, did he or she seem to know enough information about your medical history?	0.441	0.381

Items adjusted for postpartum age, marital status, ethnicity, race, and an overall health rating collected as part of the PPIC survey ("In general, how would you rate your overall health?" on a 0–5 E/VG/G/F/P scale)

the mean of non-missing responses within the domain. We also adjusted each survey item for individual respondent response tendency by fitting a linear regression of each item's score (modeled continuously) as a function of demographic variables, including postpartum age, marital status, ethnicity, race, and an overall health rating collected as part of the PPIC survey ("In general, how would you rate your overall health?" on a 0–5 E/VG/G/F/P scale). We then predicted scores for each respondent using the regression models and calculated the residuals (i.e., the differences between a respondent's observed and predicted scores on each item), which we used as adjusted survey responses.

We examined descriptive statistics for each of our factors as well as correlations within and between factors, using Cronbach's alpha for internal consistency and Spearman's correlation coefficients to compare between factors. We then calculated quartiles to assign each participant a quartile level for each of the six factors, following previous analyses utilizing PPIC survey results.[16] Quartile scores were used to conduct ordered logistic regression models, with odds ratios interpreted as the average odds of a participant providing a response in a higher quartile of perceived integration relative to responses in lower quartiles. As our variables of interest included mental health characteristics, we utilized these variables in bivariate ordered logistic regression models (measured as Excellent/Very Good/Good/Fair/Poor on the PPIC survey). Additionally, we ran models adjusting for postpartum age, ethnicity (Hispanic vs. non-Hispanic), and an overall health. These variables were selected as they were moderately to strongly statistically significant ($p < 0.10$) in univariate models comparing demographics to each factor score. Race and marital status were not included as they showed no difference in any model by factor (all $p > 0.10$). Finally, to adjust our findings for multiple comparisons, we calculated the false discovery rate (the expected rate of type I error) separately for adjusted and unadjusted analyses, to no more than 5% of all statistically significant results. All analyses were conducted in SAS (version 9.2).

RESULTS

We included 276 women veterans who had completed the PPIC survey (65% response rate among women enrolled in COMFORT who had completed their pregnancies). Those who completed the survey were more likely to be white (69% vs. 59%, $p = 0.04$), older (32.6 years vs. 31.5 years, $p = 0.02$), and less likely to have a self-reported past history of depression (51% vs. 66%, $p < 0.01$). Among the returned surveys, respondents were 32 years of age, white (69%), and married (45%). Most women had served in OEF/OIF or Operation New Dawn (OND) (93%) and had a service-connected disability rating assigned by the VA (81%). Over half of our sample self-reported a past diagnosis of depression; roughly 40% reported past diagnoses of PTSD and anxiety (Table 2). On average, survey respondents had 4.6 VA primary care visits during pregnancy, and 33% were seen for a VA psychiatric visit during this time frame (Table 3).

Table 2 Demographics, Military, and Pregnancy Characteristics ($N = 276$)

Characteristic	Total
Estimated age at postpartum interview (mean ± SD, range)	32.6 ± 4.5 (20.7–49.2)
Race: white (*N*, %)	190 (68.8)
Race: black (*N*, %)	56 (20.3)
Race: other (*N*, %)	36 (13)
Hispanic or Latino/Latina (*N*, %)	36 (13)
Marital status (*N*, %)	
Single	46 (16.7)
Married	125 (45.3)
Divorced	11 (4)
Separated	2 (0.7)
Missing/unknown	92 (33.3)
Service-connected status (*N*, %)	224 (81.2)
OEF/OIF/OND (*N*, %)	257 (93.1)
Urban/rural status (*N*, %)	
Urban	190 (68.8)
Rural	83 (30.1)
Missing	3 (1.1)
First pregnancy (*N*, %)	105 (38)
Received any VA maternity care coordination services (*N*, %)	213 (77.2)
Weeks pregnant when 1st saw prenatal care provider (*N*, %)	
8 weeks or less	103 (37.3)
9–12 weeks	128 (46.4)
13 or more weeks	45 (16.3)
Felt that prenatal care was received early enough (*N*, %)	189 (69.2)
Past diagnoses (*N*, %)	
Depression	140 (50.7)
PTSD	102 (37)
Anxiety disorder	119 (43.1)
Mood disorder	34 (12.3)
Bipolar disorder	13 (4.7)
MST: harassment (*N*, %)	133 (48.2)
MST: rape (*N*, %)	81 (29.3)

PTSD post-traumatic stress disorder, MST military sexual trauma, SD standard deviation

Domain scores were highest (indicating that veterans perceived them as most integrated) for Test Result Communication (mean = 3.2; SD = 0.85) and VA Provider Knowledge of the Patient (mean = 2.86; SD = 0.66). Scores were lowest (least integrated) for Support for Medication and Home Health Management (mean = 2.05; SD = 0.87) and Support for Self-Directed Care (mean = 2.44; SD = 0.93). Internal consistency for the domains ranged from 0.66 (Support for Medication and Home Health Management) to 0.84 (Staff Knowledge about the Patient's Medical History) (Table 4).

Unadjusted models indicate that postpartum EPDS scores were significantly associated with the Test Result Communication domain; EPDS scores ≥ 10 were associated with a 2.5 times greater odds of being in a higher quartile of this domain, compared to women veterans with an EPDS score < 10. These findings did not stay significant after adjustment for false discover rate. Receipt of mental healthcare since delivery, including either counseling and/or medication, was associated with 70% decreased odds of being in a higher quartile in the Support for Medication and Home Health Management domain (OR = 0.30; 95% CI = 0.17–0.55); this finding remained significant after adjustment for false discovery rate (Table 5).

Table 3 Healthcare Utilization (*N* = 276)

Characteristic	Total
Receipt of mental healthcare during pregnancy (*N*, %)	49 (17.8)
Felt like needed mental healthcare but did not receive it during pregnancy (*N*, %)	29 (10.5)
Contacted at home by a healthcare provider following birth (*N*, %)	168 (60.9)
Seen a VA healthcare provider for a routine visit or checkup since birth, yes (*N*, %)	16 (5.8)
Seen an external provider for a routine visit or checkup since birth, yes (*N*, %)	166 (60.1)
Seen a VA healthcare provider for a routine visit or checkup since birth, appointment scheduled (*N*, %)	19 (6.9)
Seen an external provider for a routine visit or checkup since birth, appointment scheduled (*N*, %)	61 (22.1)
Plan to return to VA for healthcare in the future (*N*, %)	255 (92.4)
Receipt of mental healthcare (counseling and/or medication) since birth (*N*, %)	45 (16.3)
Currently taking medications for a mental health condition (*N*, %)	47 (17.0)
Any VA visits during pregnancy (*N*, %)	
PTSD	15 (5.1)
PSY	92 (33.3)
PC	239 (86.6)
MST	3 (1.1)
AOD	7 (2.5)
Number of VA visits during pregnancy (mean ± SD, range)	
PTSD	0.4 ± 2.1 (0–15)
PSY	2.7 ± 6.7 (0–54)
PC	4.6 ± 4.3 (0–23)
MST	0.1 ± 1.0 (0–14)
AOD	0.05 ± 0.30 (0–3)

PTSD post-traumatic stress disorder, PSY psychiatric, PC primary care, MST military sexual trauma, AOD alcohol and other drugs, SD standard deviation

In models adjusted for postpartum age, ethnicity, and overall health rating, we found a slight decrease in odds across Staff Knowledge about the Patient's Medical History, Support for Self-Directed Care, Provider Knowledge of the Patient, and Support for Medication and Home Health Management domains for receipt of mental healthcare during pregnancy, and a slight increase in odds for "felt like needed mental health care but did not receive it during pregnancy" across all domains except Support for Self-Directed Care.

Findings for the relationship between postpartum EPDS scores and Test Result Communication did not remain significant in adjusted models; however, findings for receipt of mental healthcare since delivery and EPDS scores were associated with stronger decreased odds of being in a higher quartile in the Support for Medication and Home Health Management domain (Table 6). Only receipt of mental healthcare since delivery remained significant after false discovery rate adjustment.

DISCUSSION

This study is the first, to our knowledge, to examine the relationship of patient perceptions of integrated care and utilization of mental healthcare among pregnant and postpartum women veterans. This study provides strong support for the relationship between patient-perceived integrated care and utilization of mental healthcare following pregnancy.

Our results are important in understanding how veterans perceive integrated care across healthcare systems. High integrated care scores in Test Result Communication and Staff Knowledge of Patient's Medical History indicate that women veterans perceived that their VA providers were knowledgeable about their medical history and current medical care, including care received from obstetricians. However, lower integrated care scores for Obstetrician Knowledge about Patient's Medical History suggest that women veterans believed their non-VA providers had little information regarding their medical or treatment histories within the VA. This finding reflects the VA's ongoing efforts to share medical information with non-VA providers and highlights the difficulty of accomplishing this task. Early implementation research of the Veterans Choice Program indicated that community providers often had little information about the veterans referred for non-VA care,[4] though improved care coordination systems within the VA aim to close these gaps in sharing of medical information.[18]

Women with postpartum EPDS scores > 10, indicative of depression, were more likely to rate Test Result Communication as highly integrated, possibly indicating higher degrees of utilization and knowledge of mental healthcare within VA. However, women who had utilized mental healthcare following the delivery of their child or who had an EPDS score > 10 (indicating depression symptoms) were less likely to view Support for Medication and Home Health Management as integrated, suggesting that they perceived a lack of mental health support following their pregnancies. Perceived lack of

Table 4 PPIC Domain Descriptive Statistics

Factor	Number of items	Mean score*	Standard deviation*	Internal consistency**
Staff Knowledge about the Patient's Medical History	3	2.54	0.88	0.84
Support for Self-Directed Care	5	2.44	0.93	0.79
Test Result Communication	3	3.20	0.85	0.75
VA Provider Knowledge of the Patient	5	2.86	0.66	0.68
Support for Medication and Home Health Management	4	2.05	0.87	0.66
Obstetrician Knowledge about the Patient's Medical History	2	2.60	0.77	0.56

**Mean and standard deviation of group-level scores*
***Cronbach's alpha for all factors except "Obstetrician Knowledge about the Patient's Medical History" where the correlation is presented for the two items present in the factor*

Table 5 Bivariate Relationships Between Mental Healthcare Characteristics and Integrated Care Domains

	Staff Knowledge about the Patient's Medical History	Support for Self-Directed Care	Test Result Communication	Provider Knowledge of the Patient	Support for Medication and Home Health Management	Obstetrician Knowledge about the Patient's Medical History
Receipt of MH care during pregnancy (VA or external) (yes vs. no)	0.62	0.803	1.472	1.152	0.645	1.229
Felt like needed mental healthcare but did not receive it during pregnancy (yes vs. no)	0.768	0.765	2.357*	1.002	0.822	1.599
Currently taking medications for a MH condition (yes vs. no)	1.236	1.012	1.488	0.889	0.705	0.848
Receipt of mental healthcare (counseling and/or medication) since birth (yes vs. no)	0.585	0.533*	1.817	0.709	0.301**	1.206
Postpartum EPDS score (continuous)	0.991	1.003	1.082**	1.024	0.965	1.019
Postpartum EPDS score (10+ vs. < 10)	1.039	1.05	2.567**	1.187	0.533*	1.094
PTSD visits during pregnancy	1.009	0.972	1.046	1.122	0.947	1.042
Psychiatric visits during pregnancy	0.996	0.983	1.035	1.016	0.968	1.029

Domain scores here are represented in quartiles, where the results are interpreted as the average odds of a patient's provided responses in a higher quartile of perceived integration relative to responses in lower quartiles. For example, participants who received mental healthcare since birth have a 70% reduced odds of being in a higher quartile of support for medication and home health management compared to patients not receiving mental healthcare since birth. ORs < 1 indicate a reduction in odds
*$p < 0.05$; **$p < 0.01$

Table 6 Adjusted Relationships Between Mental Healthcare Characteristics and Integrated Care Domains

	Staff Knowledge about the Patient's Medical History	Support for Self-Directed Care	Test Result Communication	Provider Knowledge of the Patient	Support for Medication and Home Health Management	Obstetrician Knowledge about the Patient's Medical History
Receipt of MH care during pregnancy (VA or external) (yes vs. no)	0.62	0.69	1.31	1.06	0.59	1.04
Felt like needed mental healthcare but did not receive it during pregnancy (yes vs. no)	1.02	0.92	3.63*	1.22	1.20	2.39*
Currently taking medications for a MH condition (yes vs. no)	1.26	0.83	1.46	0.76	0.65	0.76
Receipt of mental healthcare (counseling and/or medication) since birth (yes vs. no)	0.54	0.42*	1.99	0.50*	0.21**	1.02
Postpartum EPDS score (continuous)	1.00	0.97	1.06	0.99	0.95*	0.99
Postpartum EPDS score (10+ vs. < 10)	0.93	0.60	1.70	0.77	0.41*	0.96
PTSD visits during pregnancy	1.01	0.95	1.00	1.16*	0.93	1.04
Psychiatric visits during pregnancy	1.03	0.97	1.02	1.01	0.96*	1.02

Domain scores here are represented in quartiles, where the results are interpreted as the average odds of a patient's provided responses in a higher quartile of perceived integration relative to responses in lower quartiles. For example, participants who received mental healthcare since birth have a 79% reduced odds of being in a higher quartile of support for medication and home health management compared to patients not receiving mental healthcare since birth. ORs < 1 indicate a reduction in odds. Models were adjusted for postpartum age, ethnicity, and overall health rating
*$p < 0.05$; **$p < 0.01$

mental health support could be reflective of the challenges many women veterans experience following their pregnancies in terms of deciding whether or not to return to VA care. Since many veterans have been solely in the care of their obstetrician during pregnancy and must now also begin to take their infant to a pediatrician, many veterans may not have capacity to reengage with or may no longer feel connected to either their VA provider or the VA healthcare system. One possible way to address this problem is through the VA Maternity Care Coordinator program, in which every VA facility employs a maternity care coordinator who oversees care for pregnant veterans and serves as the liaison between the VA and the community obstetrical provider. Maternity care coordinators follow up with pregnant veterans at both 1 week and 6 weeks postpartum and check on the health of the baby and ensure that the veteran has a follow-up appointment scheduled with the VA. Future interventions to promote care coordination, especially during the postpartum period, could include maternity care coordinators and VA mental health clinicians and could focus on those women experiencing postpartum depression or in need of mental health support.

Our findings provide quantitative support to qualitative studies that have elucidated care coordination challenges by women veterans using non-VA care for some of their health needs.[4,19] However, further attention needs to be given to those veterans with poor integrated care scores, specifically as to whether these veterans have worse health outcomes than veterans with high integration. Furthermore, echoing previous studies,[20] our study also points to the need to ensure non-VA care providers are provided sufficient medical information on women veterans in their care and should underscore efforts for the VA to be more collaborative in its relationships with community providers. Integration will likely remain a challenge for many veterans using non-VA care, particularly if this care is episodic in nature. However, the recent passage of the Mission Act may allow veterans to choose to receive more of their care from non-VA providers, and if this holds true, VA will need to continue to develop systems to ensure integrated care for its veterans.

Our findings should be considered in light of study limitations. Our sample size was small and limited to women enrolled in the larger COMFORT study and therefore utilizing VA maternity care benefits. Therefore, our results may not be generalizable to the larger population of women veterans using VA maternity care benefits. Also, though our response rate was relatively strong (65%), there could have been important differences in perceptions of integrated care between those who completed the survey and those that did not. For example, respondents were less likely to have a history of mental health conditions than those who did not respond and therefore utilized less VA mental healthcare, in which case our results likely overestimate levels of perceived integrated care. In addition, because we focused on VA primary care and mental health utilization measures, we may have underestimated utilization if it came from other non-VA sources.

Despite these limitations, our study offers an important contribution by examining veterans' perceptions of integrated care across health systems. Importantly, survey results lend support to the PPIC survey as a way to examine multidimensional assessment of integrated care across VA and non-VA systems. As VA continues to develop care coordination tools that aim to share veterans' medical information with non-VA providers and promote timely sharing of test results, it will continue to be important to assess veterans' perceptions of care coordination. Further research is needed to evaluate the relationship between perceptions of integrated care and different types of care utilization among veterans, including inpatient, outpatient, and emergency care.

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Compliance with Ethical Standards:

Conflict of Interest: *The authors declare that they do not have a conflict of interest.*

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