

Primary Care Physicians' Beliefs and Practices toward Maternal Depression

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Abstract

Background: The negative impact of maternal depression on both the mother and her offspring highlight the importance of managing (diagnosing/treating) maternal depression in primary care. Despite this heightened emphasis, many primary care physicians (PCPs) still fail to diagnose and treat maternal depression in their patients. To address this apparent gap between opportunity for care and actual care delivery, the present surveillance study examined the relationships among PCPs' beliefs, knowledge, self-efficacy, and perceived barriers toward and practices related to managing maternal depression.

Methods: A total of 232 PCPs (obstetricians, pediatricians, and family medicine practitioners) residing in South-eastern Virginia completed a 60-item survey, by either web or mail in 2006. The 60-item survey contained questions pertaining to demographics, attitudes, beliefs, efficacy, current practices, and perceived barriers regarding the management of maternal depression. Chi-square and one-way ANOVAs analyses of survey items were conducted to compare PCPs' knowledge, beliefs, self-efficacy, perceived barriers, past training toward, and current management practices for maternal depression (i.e., frequency of assessment, referral, consultation, and treatment) across specialties.

Results: Over 90% of physicians reported that it was their responsibility to recognize maternal depression; however, a large percentage of physicians rarely/never assess for depression (40%) or provide a referral (66%). Significant differences in beliefs, perceived barriers, and practices were found across specialties.

Conclusions: These findings will guide the development of future multifaceted intervention strategies to enhance physician skills and practices in managing maternal depression in primary care settings.

Introduction

RECENTLY, THE IMPORTANCE OF managing (identifying and treating) maternal depression in primary care practices has been highlighted.¹⁻⁴ There is a well-established association between maternal depression and poor child health outcomes, including mental health disorders and poorer cognitive, social, and emotional functioning.⁵⁻¹⁰ Recent literature suggests that these poor outcomes may be mediated by impairments to parenting capacity and reductions of developmentally productive parent-child interactions.¹¹⁻¹⁴

Maternal depression is still often missed by primary care providers (PCPs), especially in cases where the depressed individual is not the patient (i.e., the mother bringing her child in for care). In fact, studies have found most pediatricians in urban settings do not recognize mothers who demonstrate

high levels of depressive symptomatology.^{15,16} Moreover, when screening for depression is conducted in obstetric clinics, it is often infrequent,¹⁷ causing further delay or missed opportunity for care.

Because obstetricians, pediatricians, and family medicine physicians have contact with mothers of small children and often advise mothers on family interactions, issues focusing on well-being (e.g., maternal depression) that affect the family environment are highly relevant to their practice. In a recent study, women reported being receptive to obtaining advice about their health problems from their child's practitioner.^{15,18} Despite this receptiveness, many PCPs who have the opportunity do not manage maternal depression in their practices.¹⁹ To address this apparent gap between the opportunity for care and actual care delivery, the present study assessed PCPs' (pediatricians, obstetricians, or family medi-

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cine practitioners) current practices in the identification and management of maternal depression. To our knowledge, the extant literature lacks a comprehensive examination of these relationships across specialties. This study was designed to better understand and identify potential differences in attitudes, beliefs, efficacy, practices, and current barriers (i.e., patient, physician, and system) toward managing maternal depression across primary care specialties.

Materials and Methods

Sample

The sample comprised 217 PCPs currently practicing medicine in one of three specialties (family medicine, obstetrics, and pediatrics) in Southeastern Virginia. The sample included 87 family medicine physicians (40.1%), 81 pediatricians (37.3%), and 49 obstetricians (22.6%). Demographics for the full sample and by specialty are shown in Table 1.

Procedures

Prior to conducting the present study, the study protocol was approved by the Institutional Review Board at the respective institutions. PCPs were eligible to participate in the study if they were currently practicing in one of three specialties: obstetrics, pediatrics, or family medicine, and practicing in one of the five designated cities in the Hampton Roads Area in Southeastern Virginia. Eligible PCPs who met the study inclusion criteria were identified through the Virginia Board of Medicine website, local hospital directories,

and directories of local chapters of the American Academy of Family PCPs, the American Academy of Pediatrics, and the American College of Obstetricians and Gynecologists. Our initial search yielded 1115 names, of which 144 were deleted because they had moved away ($n = 81$), had no current contact information ($n = 46$), or for other reasons ($n = 17$), yielding an initial pool of 971 PCPs. Eligible participants were sent a prenotification by the medical executive of a local hospital informing them about the upcoming study. An e-mail or facsimile or both were sent with a cover letter containing the link to the web survey approximately 1 week later.

All eligible participants received up to four follow-up notifications by either fax, e-mail, or postal mail. PCPs were initially contacted by e-mail (5.0%), fax (65.1%), both e-mail and fax (9.6%), or mail (1.1%) depending on the type of contact information available in the database. Participants were given the opportunity to complete the survey by mail as well as by web. Steps were taken to ensure confidentiality while completing the survey on the web. Prior to completing the web-based survey, participants were sent an information page describing the purpose of the study, criteria for participation, confidentiality measures, incentive details, and contact information for the principal investigator and study coordinator. Agreement to participate was confirmed by clicking on a Continue button that directed users to the survey. The survey did not collect any protected health information. After completing the survey, participants were redirected to a separate web page, where they had the option of entering their name and e-mail address; this information was

TABLE 1. SAMPLE DEMOGRAPHICS BY SPECIALTY^a

	Full Sample (n = 217)	Family Medicine (n = 87)	Obstetrics/ gynecology (n = 49)	Pediatrics (n = 81)
Gender				
Male	97 (44.7%)	45 (51.7%)	17 (34.7%)	35 (43.2%)
Female	120 (55.3%)	42 (48.3%)	32 (65.3%)	46 (56.8%)
Race				
White	155 (72.4%)	59 (68.6%)	37 (77.1%)	59 (73.8%)
African American	26 (12.1%)	10 (11.6%)	8 (16.7%)	8 (10.0%)
Asian	24 (11.2%)	12 (14.0%)	2 (4.2%)	10 (12.5%)
Other	9 (4.2%)	5 (5.8%)	1 (2.1%)	3 (3.8%)
Years providing healthcare services				
<2	10 (4.7%)	5 (5.7%)	3 (6.4%)	2 (2.5%)
2-5	34 (15.8%)	14 (16.1%)	8 (17.0%)	12 (14.8%)
6-10	43 (20.0%)	15 (17.2%)	10 (21.3%)	18 (22.2%)
11-15	33 (15.3%)	14 (16.1%)	6 (12.8%)	13 (16.0%)
16+	95 (44.2%)	39 (44.8%)	20 (42.6%)	36 (44.4%)
Practice setting				
Urban	110 (51.6%)	40 (46.5%)	25 (52.1%)	45 (57.0%)
Suburban	95 (44.6%)	42 (48.8%)	21 (43.8%)	32 (40.5%)
Rural	8 (3.8%)	4 (4.7%)	2 (4.2%)	2 (2.5%)
Years at present location				
<1	26 (12.1%)	9 (10.6%)	7 (14.3%)	10 (12.5%)
2-3	53 (24.8%)	16 (18.8%)	14 (28.6%)	23 (28.8%)
4-10	62 (29.0%)	31 (36.5%)	12 (24.5%)	19 (23.8%)
11-15	31 (14.5%)	15 (17.6%)	6 (12.2%)	10 (12.5%)
16+	42 (19.6%)	14 (16.5%)	10 (20.4%)	18 (22.5%)

^aThere were no significant differences across specialties.

needed in order to receive the incentive. Contact information was stored in a separate database such that it could not be linked to survey responses.

A total of 232 completed surveys were returned out of 971 PCPs in the initial pool. Seventy-nine people responded by mail, and the remaining 153 completed the survey online. This represents a response rate of 23.9%. Of the 232 completed surveys, 14 were deleted because the physicians were either out of the study catchment area ($n = 5$) or not practicing within one of the targeted specialties ($n = 9$). Thus, the final study sample included 217 participants. Descriptive statistics for the sample can be found in Table 1.

Measures

An online survey was developed in 2006 to assess PCPs' attitudes, beliefs, and practices regarding the assessment and treatment of maternal depression. Survey development proceeded in several stages. First, an initial pool of items was developed based on an extensive literature review and informal physician interviews. The item set was narrowed and content validity was assessed via a panel of PCPs within the relevant specialties who reviewed the proposed items for content and accuracy. Finally, the survey was pilot-tested by another group of PCPs and other health professionals to determine if any items needed to be revised or omitted.

The final survey consisted of 60 items and took approximately 15 minutes to complete. Demographics were assessed at both a physician level (e.g., race, years of practice) and a practice level (e.g., location and type of practice). PCPs were also asked to rate the extent of their agreement with a series of statements about attitudes, beliefs, knowl-

edge, and efficacy toward maternal depression on a 6-point Likert-type scale (i.e., strongly agree, agree, somewhat agree, somewhat disagree, disagree, strongly disagree). Items were developed by the authors to address several constructs, which included the following. Attitudes toward managing maternal depression focused on the physician's perceived level of responsibility toward treating and diagnosing of maternal depression (e.g., Recognizing maternal depression is my responsibility). Physician knowledge was assessed by the following statement: "I am familiar with the Diagnostic and Statistical Manual of Mental Disorders, 4th ed. DSM-IV criteria for depression." Physician belief item centered on the perceived prevalence rate of maternal depression in their practice and community and the effect of the perceived severity of maternal depression on the mother's health as well as the health of her children (e.g., Depressed mothers provide more inconsistent care to their children than nondepressed mothers. Maternal depression often goes away without treatment). Physicians' level of efficacy toward managing maternal depression was captured by such questions as: "How confident are you with diagnosing maternal depression?" and "How confident are you with treating maternal depression?" PCPs were also asked to describe their current management of depression practices (e.g., "How often do you assess for maternal depression?") and perceived barriers (at the patient, physician, and system levels) toward the management of maternal depression in their practice. Finally, several items assessing PCPs' openness to future interventions were included (e.g., willingness to implement screening tool, preferred ways to receive future information regarding maternal depression management in primary care settings).

TABLE 2. PHYSICIAN ATTITUDES, BELIEFS, AND EFFICACY: COMPARISONS BY SPECIALTY^a

	Full sample Mean (SD)	Family medicine Mean (SD)	Obstetrics/gynecology Mean (SD)	Pediatrics Mean (SD)	p-value
Depressed moms provide more inconsistent care	4.97 (1.00)	4.93 (1.02)	4.81 (1.00)	5.10 (1.00)	NS
Maternal depression often goes away without treatment	3.11 (1.10)	3.10 (1.10)	3.04 (1.15)	3.16 (1.08)	NS
Normal for moms of young children to feel depressed	3.21 (1.20)	3.02 (1.20)	3.42 (1.24)	3.28 (1.17)	<0.05
Recognizing maternal depression is my responsibility	4.75 (0.86)	5.22 (0.74)	4.27 (0.74)	4.75 (0.86)	NS
Recognizing maternal depression is my office/practice's responsibility	4.28 (1.12)	4.51 (1.14)	4.87 (0.83)	3.66 (.97)	<0.001
Treating maternal depression is my responsibility	3.77 (1.67)	4.87 (0.94)	4.45 (1.32)	2.18 (1.16)	<0.001
It is my responsibility to refer depressed moms for further treatment	4.78 (1.04)	4.65 (0.97)	5.32 (0.65)	4.59 (1.20)	<0.10
I am familiar with DSM IV criteria for depression	4.64 (1.07)	4.89 (0.95)	4.75 (1.16)	4.30 (1.07)	<0.01
I feel confident in my ability to diagnose maternal depression	4.11 (1.04)	4.49 (0.86)	4.61 (0.91)	3.41 (0.90)	<0.001
I feel confident in my ability to treat maternal depression	3.51 (1.57)	4.63 (0.85)	4.18 (1.25)	1.90 (0.80)	<0.001
I feel comfortable talking about depression with patients or their mothers	5.06 (0.88)	5.44 (0.60)	5.36 (0.69)	4.47 (0.92)	<0.001

^aResponse scale: 6, strongly agree; 5, agree; 4, somewhat agree; 3, somewhat disagree; 2, disagree; 1, strongly disagree.

Data analyses

Because survey data did not contain identifiers, the data did not need to be de-identified. One-way ANOVAs were conducted to compare PCPs in the three specialties on attitudes, beliefs, knowledge, past training, and current management of maternal depression practices. Chi-square analyses of survey items were conducted to compare PCPs in the three specialties on certain treatment practices, continuing education, and preferred method of receiving information. All analyses were conducted using SPSS version 14 (SPSS, Inc., Chicago IL).

Results

PCPs attitudes, beliefs, and efficacy in relation to maternal depression

Across specialties, the majority of PCPs believed it was their responsibility to recognize maternal depression. Overall, obstetricians were most likely to feel responsible for and confident in recognizing maternal depression, whereas family medicine physicians were most likely to feel responsible for and confident in treating maternal depression. Pediatricians were least likely to report confidence in their abilities to diagnose and treat maternal depression, least comfortable discussing depression symptoms with their patients, and less familiar with DSM-IV criteria for depression (Table 2).

Comparisons of PCPs' practices related to managing maternal depression

Across specialties, nearly 40% of PCPs reported rarely/never assessing for maternal depression. Obstetricians were most likely to report assessing maternal depression in their practice, and pediatricians were least likely (96% and 29%, respectively). As a group, nearly two thirds of the PCPs reported rarely or never referring a patient for treatment of maternal depression, and half reported never/rarely consulting with a mental health specialist. Obstetricians were more likely than family medicine practitioners or pediatricians to report using a screening tool for maternal depression, providing counseling for maternal depression in their practice, and referring a patient for treatment for maternal depression. Pediatricians were less satisfied and comfortable with their interactions with mental health professionals than were PCPs in the other two specialties (Table 3).

PCPs' perceived barriers to managing maternal depression

The most commonly reported barriers that reduce the likelihood of screening for depression across specialties were limited time (78%), patient barriers (30%), lack of knowledge and skills (24%), and responsibility for follow-up care (21%). Examples of patient barriers included the perception that the patient was unwilling to talk about mental health issues and

TABLE 3. PHYSICIAN PRACTICES: COMPARISONS BY SPECIALTY^a

	Full sample Mean (SD)	Family medicine Mean (SD)	Obstetrics/gynecology Mean (SD)	Pediatrics Mean (SD)	p-value
How often assess for maternal depression	3.04 (1.10)	3.15 (1.00)	3.89 (0.77)	2.45 (1.03)	<0.001
How often use screening tool	2.10 (1.11)	2.40 (0.89)	2.83 (1.34)	1.32 (0.59)	<0.001
How often provide counseling for maternal depression in your practice	2.33 (1.15)	2.74 (0.98)	4.12 (1.28)	2.93 (1.33)	<0.001
How often refer a patient for treatment of maternal depression	2.37 (0.84)	2.46 (0.75)	3.06 (0.85)	1.87 (0.56)	<0.001
How often consult with a MH specialist about a depressed patient	2.49 (0.76)	2.62 (0.67)	2.69 (0.85)	2.22 (0.75)	<0.10
	n (%)	n (%)	n (%)	n (%)	
How often assess for maternal depression					
Never/rarely	84 (39.8%)	26 (29.9%)	2 (4.4%)	56 (70.9%)	<0.001
Monthly/weekly/daily	127 (60.2%)	61 (70.1%)	43 (95.6%)	23 (29.1%)	
How often refer patient for treatment of maternal depression					
Never/rarely	143 (66.2%)	54 (62.8%)	14 (28.6%)	75 (92.6%)	<0.001
Monthly/weekly/daily	73 (33.8%)	32 (37.2%)	35 (71.4%)	6 (7.4%)	
How typically treat maternal depression					
Counseling in office by you	93 (42.9%)	61 (70.1%)	22 (44.9%)	10 (12.3%)	<0.001
Counseling in office by other provider	13 (6.0%)	5 (5.7%)	7 (14.3%)	1 (1.2%)	<0.05
Counseling in office by MH specialist	23 (10.6%)	9 (10.3%)	11 (22.4%)	3 (3.7%)	<0.01
Prescribe medication	122 (56.2%)	80 (92.0%)	42 (85.7%)	0 (0)	<0.001
Refer to MH specialist off-site	153 (70.5%)	72 (82.8%)	37 (75.5%)	44 (54.3%)	<0.001
Refer to mother's primary care doctor	83 (38.2%)	12 (13.8%)	19 (38.8%)	52 (64.2%)	<0.001
Refer to community support groups	72 (33.2%)	33 (37.9%)	20 (40.8%)	19 (23.5%)	<0.10
Provide written information on depression	62 (28.6%)	35 (40.2%)	19 (38.8%)	8 (9.9%)	<0.001
Advice on behavior changes	79 (36.6%)	52 (60.5%)	22 (44.9%)	5 (6.2%)	<0.001
Not involved in management	22 (10.1%)	0 (0)	2 (4.1%)	20 (24.7%)	<0.001
Satisfied with access to MH professionals	3.65 (1.38)	4.04 (1.21)	4.12 (1.28)	2.93 (1.33)	<0.01

^aResponse scale: 1, never; 2, rarely; 3, monthly; 4, weekly; 5, daily.

^bMH, mental health.

the perception of stigma. A similar trend was reported regarding perceived barriers toward the treatment of maternal depression, with the most commonly reported barriers being limited time (48%), inadequate knowledge and skills (33%), responsibility for follow-up care (24%), and liability issues (22%). Approximately 10% reported reimbursement/insurance limitations. For pediatricians particularly, lack of knowledge and skills was a barrier toward screening for and treating maternal depression.

PCPs' mental health training and openness to future interventions

Overall, PCPs perceived mental health resources to be inadequate (Table 4). Family medicine physicians and obstetricians reported more past training in diagnosis of maternal depression than did pediatricians. Past continuing education training varied across specialties, with obstetricians more likely to receive training in postpartum depression, maternal depression, or depression during pregnancy, family medicine practitioners in domestic violence, and pediatricians in substance abuse.

Overall, obstetricians reported the greatest openness to future interventions to enhance the detection and treatment of maternal depression in their practices, followed by family medicine physicians and then pediatricians. Over 90% of family medicine physicians and obstetricians and over 75%

of pediatricians reported a willingness to implement a screening tool and to place a two-item tool on an intake form. Additionally, >90% of PCPs in all three specialties expressed a willingness to learn about ways to enhance patient communication about mental health issues. No significant difference by specialty was found for the most preferred method of receiving information (e.g., continuing education credits).

Discussion

National attention has been given to the management of maternal depression in primary care practices, especially during the perinatal period.^{3,15} In order to better understand management practices of maternal depression in primary care settings, the present study assessed PCPs' (i.e., pediatricians, obstetricians, and family medicine practitioners) current beliefs, practices, and perceived barriers in the identification and management of maternal depression.

PCPs' beliefs and practices related to managing maternal depression

Across all specialties, the majority of PCPs reported it was their responsibility to recognize maternal depression. In particular, our finding suggesting that 90% of pediatricians feel responsible for recognizing maternal depression is much

TABLE 4. PCPs' MENTAL HEALTH TRAINING AND OPENNESS TO FUTURE INTERVENTIONS: COMPARISONS BY SPECIALTY

	Full sample Mean (SD)	Family medicine Mean (SD)	Obstetrics/gynecology Mean (SD)	Pediatrics Mean (SD)	p-value
Training in diagnosis of maternal depression ^a	3.19 (0.97)	3.62 (0.74)	3.53 (0.79)	2.54 (0.94)	<0.001
Training in treatment of maternal depression ^a	2.88 (1.15)	3.61 (0.77)	3.33 (0.87)	1.86 (0.86)	<0.001
MH ^b resources for maternal depression are inadequate ^c	3.71 (1.21)	3.42 (1.59)	3.49 (1.21)	4.15 (1.14)	<0.01
Willing to implement screening tool ^c	4.55 (1.17)	4.76 (1.06)	5.12 (0.91)	3.97 (1.19)	<0.01
Willing to place 2-item tool on intake ^c	4.69 (1.11)	4.78 (0.93)	5.19 (0.96)	4.29 (1.26)	<0.01
Willing to learn about ways to enhance patient communication about MH issues ^c	4.98 (0.85)	5.07 (0.65)	5.22 (0.71)	4.72 (1.03)	<0.01
	n (%)	n (%)	n (%)	n (%)	
Most preferred method of receiving information					NS
Educational intervention	20 (9.5%)	8 (9.3%)	6 (12.5%)	6 (7.8%)	
CME/CEU's	45 (21.3%)	23 (26.7%)	9 (18.8%)	13 (16.9%)	
Seminars	30 (14.2%)	15 (17.4%)	4 (8.3%)	11 (14.3%)	
Workshops	12 (5.7%)	7 (8.1%)	1 (2.1%)	4 (5.2%)	
Visit by professional educator	22 (10.4%)	3 (3.5%)	8 (16.7%)	11 (14.3%)	
Guidelines	44 (20.9%)	17 (19.8%)	7 (14.6%)	20 (26.0%)	
Computer-deliverables	34 (16.1%)	12 (14.0%)	12 (25.0%)	10 (13.0%)	
Continuing education					
Postpartum depression	98 (49.0%)	52 (64.2%)	32 (74.4%)	14 (18.4%)	<0.001
Maternal depression	66 (33.0%)	33 (40.7%)	19 (44.2%)	14 (18.4%)	<0.01
Depression during pregnancy	57 (28.5%)	24 (29.6%)	26 (60.5%)	7 (9.2%)	<0.001
Domestic violence	105 (52.5%)	50 (61.7%)	24 (55.8%)	31 (40.8%)	<0.05
Child abuse	124 (62.0%)	49 (60.5%)	14 (32.6%)	61 (80.3%)	<0.001
Substance abuse	124 (62.0%)	57 (70.4%)	15 (34.9%)	52 (68.4%)	<0.001

^aResponse scale: 1, never received training; 2, poor; 3, fair; 4, good; 5, excellent.

^bMH, mental health.

^cResponse scale: 1, strongly disagree; 2, disagree; 3, somewhat disagree; 4, somewhat agree; 5, agree; 6, strongly agree.

higher than in past research (60%).¹ This finding may be a reflection of selection bias or may be due to an increase (over the past 5 years) in pediatricians' awareness and perceived responsibility toward managing maternal depression as a result of increased national attention to this issue.

Unfortunately, our findings suggest that PCPs' perceived responsibility may not result in actual care delivery (i.e., assessing for depression and treating/referring) and this may be due in part to a lack of confidence in recognizing and treating maternal depression, especially among pediatricians. Although the majority of PCPs reported that it was their responsibility to recognize maternal depression and that they felt comfortable talking about depression with patients, over a quarter of the PCPs do not feel confident in their ability to do so. A similar but more robust trend was found regarding confidence in treating maternal depression. The reason that obstetricians and family medicine practitioners are more confident in treating maternal depression than pediatricians may be a direct reflection of previous training, as obstetricians and family medicine practitioners tended to report more training in treating maternal depression than do pediatricians. In our study, the majority of pediatricians reported either no training, or fair/poor training, which is consistent with past research.²⁰ It should also be noted that the majority of pediatricians reported a lack of perceived responsibility for treating maternal depression in general, which is also consistent with past findings.¹ This finding is understandable, as some would argue that pediatricians should not be expected to treat maternal depression but should, at the very least, be able to recognize maternal depression, discuss the ramifications, and provide a referral if appropriate.

We were encouraged because our study found that across specialties, the majority of the PCPs believed it was their responsibility to refer a patient for further mental health treatment, and the majority of obstetricians often do. However, that is not the case across the other two specialties, as only a third of family medicine practitioners and <10% of pediatricians reported that they often refer patients for follow-up mental healthcare. Clearly, these findings highlight a need for an improvement in coordination of care between primary care settings and mental health specialists. One potential barrier related to this lack of coordination may be related to the logistics of arranging referrals, as Trude and Stoddard²¹ found over half of PCPs had difficulty arranging referrals. In this select study population, it appears that links are established in two of the three specialties but that they need to be used more often, as the majority of obstetricians/gynecologists and family medicine practitioners report consulting with a mental health specialist at least monthly. Many of the PCPs perceived mental health resources in the community as inadequate, calling for more attention in this area to improve coordinated care.

PCPs' perceived barriers toward managing maternal depression

Past research has been based primarily on studies involving depression management among the general adult population in primary care practices.²²⁻²⁴ Within this literature, Williams et al.²² suggest certain barriers toward the management of adult depression in primary care settings occur

at three levels (e.g., patient, physician, and system). Our study found similar levels in barriers related to maternal depression. In particular, across all specialties, PCPs report they have inadequate time for counseling patients (system level), and even if time permitted many (in particular, pediatricians), do not feel confident in their knowledge and skills to manage maternal depression (physician level). Our findings suggest that lack of knowledge and skills is a major barrier, which is consistent with a recent study that reported that 64% of pediatricians thought they did not have adequate training/knowledge to diagnose maternal depression.¹

PCPs in all three specialties identified certain perceived patient characteristics (e.g., patient does not want to discuss mental health issues, perceived stigma) that act as barriers to the management of depression. Interestingly, past research suggests that women are receptive to obtaining advice about their health problems, including mental health conditions, from their child's practitioner.^{18,25} These findings highlight the need for improved provider-patient communication in the area of managing maternal depression in primary care settings.

Limitations

Findings from our study should be evaluated in light of the following limitations. Despite using techniques linked to optimal response rates (e.g., prenotification prior to sending out the survey, personalized contacts, and multiple follow-ups by multiple methods),²⁶ our response rate was suboptimal compared with other studies involving surveys of physicians,²⁷ although it was consistent with some past research findings.^{28,29} The present study's low response rate may be due in part to the limitations inherent in the public databases that were used to build the sampling frame, also making it difficult to adjust for nonresponse bias. Some of the data in these databases may have been outdated, and many of the respondents in the database were affiliated with the transient military population. Last, findings from this study are based on a small, geographical sample and, thus, may not represent other populations.

Conclusions

Overall, PCPs in our sample were open to making modifications to their skills and practice related to managing maternal depression. Specifically, the majority of PCPs were very receptive to implementing screening tools in their practices, and most PCPs were willing to implement a screening tool or two-item screening indicator on their intake form. Implementing the two-item indicator may be more successful, as past research suggests a high rate of error while using larger and more complex screening tools.¹⁶ The importance of this finding is underscored by the fact that depression screening in primary care is currently advised by the U.S. Preventive Services Task Force, and evidence suggests that it can be implemented in a cost-effective manner.³⁰ Moreover, a recent study found screening for maternal depression during well child visits to be feasible.³¹ Findings from our study suggest that three quarters of pediatricians and a third of family medicine practitioners never/rarely assess for depression.

Improved screening and treatment would represent a significant advance in reducing maternal and child health risks.

Supporting this, a recent study by Olson et al.³¹ suggests that 83% of the women who screened positive on a two-item indicator were willing to take action to address their mental health needs. Thus, implementing screening tools must also be accompanied by identification of community mental health resources to allow for appropriate referral. Improved coordination of care between primary care physicians and mental health specialists is integral to this process.

Innovative and novel models need to be developed and revised to address barriers for diagnosis and treatment of maternal depression that are unique to each locality and, in terms of the present study, each specialty. Our findings suggest that PCPs desire more training on mental health topics in the form of continuing education units (CEUs), guidelines, and computer deliverables. Certain educational interventions have shown promise in the past. For example, simple lecture-based seminars on depression significantly increased knowledge scores among PCPs.³² Perhaps more promising are results from a multifaceted approach that not only improved physician's knowledge but also enhanced their skills in managing depression.³³ These interventions could be tailored to be more attractive and, thus, more likely to be adopted by delivering them in the stated preferred manner via internet or e-mail in the form of continuing medical education activities.

Disclosure Statement

No competing financial interests exist.

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