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The Level of Knowledge and it's Determinants Regarding Postpartum Depression Among Physicians at Ministry of Health Primary Healthcare Centers in Jeddah, 2020

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Abstract

Introduction: As post-partum depression (PPD) is a condition that occurs in a specific time frame starting during pregnancy or in the first 4 weeks following delivery, it is easy to be early detected and diagnosed at primary healthcare level. This study aimed to assess level of knowledge regarding PPD and its determinants among physicians in Jeddah city.

Methods: This is a cross-sectional study targeting physicians working in primary healthcare centers. The sample size was calculated to be 110 participants based on estimated total number of doctors at 95% confidence interval and 5% margin of error. The study was carried out using a validated structured questionnaire consists of two parts. The first section contains information regarding socio-demographics while the second section contains questions that assessed knowledge about PPD including symptoms, screening, risk factors, diagnosis, and management.

Results: A total of 110 physicians were included, of them about two thirds were females and a half aged 21-34 years old. Regarding job title, it is mainly GPs (53.6%), while 15.5% registrars, and 18.2% consultants. About 44% did sometimes screening for PPD while 44.5% rarely or never did screening. The total score of knowledge about PPD ranged from 11-41 with mean score of 30.6 ± 6.6 . Only 58.2% of the doctors had high level of knowledge about PPD, though 9.1% had a low level of knowledge. Medical qualifications and job title were significant determinants for knowledge about post-partum depression while age and gender had no significant association with the knowledge.

Conclusions: The level of knowledge was, in general, good but inadequate regarding certain domains of post-partum depression among physicians in primary health care. The physicians were highly aware about symptoms and management methods of post-partum depression, however, they had low knowledge about screening, diagnosis and complications of the condition.

Keywords: Depression, Delivery, Sadness, Mothers, Knowledge, Awareness, Saudi

Introduction

Mothers experience different stressors during the birth giving of their children. Throughout these events, mothers suffer from social, emotional, and physical challenges such as experiencing insomnia, physical pain, and psychological stress. These may precipitate the development of postpartum depression (PPD) for mothers dealing with their infants, especially if there is lack of support [1]. PPD is defined as a major depressive disorder that affects women's quality of life, starting during pregnancy or in the first 4 weeks following delivery. PPD shares some features of baby blues but in a more severe form and difference in time frame [2].

PPD is a devastating disorder that is associated with episodes of depression occurring after delivery. It is considered as the most common complication after delivery according to the National Institute of Health Care Management (NIHCM) [3]. The prevalence ranges from 8-20% worldwide [4, 5]. Arab women showed higher rates of PPD: 22% in the United Arab Emirates and 17.8% in Dammam, KSA [6, 7]. Regarding dealing with this issue which requires a multi-disciplinary response, primary health care physicians are expected to be the first to detect, diagnose, and treat PPD. However, PPD is usually either undiagnosed, or misdiagnosed as baby blues [8].

PPD can be manifested by at least one of the two major symptoms: (low mood and/or loss of interest) in addition to at least 3 or 4 minor symptoms (totaling to at least 5 out of 9 possible symptoms). Minor symptoms may include: changes in appetite/weight, poor concentration, sleep disturbances, fatigue/loss of energy, psychomotor agitation, guilt/feelings of worthlessness, and suicidal ideation. These symptoms must persist for at least two weeks in order to be considered as PPD. Onset of symptoms during pregnancy or within 4 weeks after delivery [2].

What makes the diagnosis challenging is that there is no definitive diagnostic tool to rely on. Therefore, instruments have been developed to detect PPD and measure symptoms. Among these instruments is the Edinburgh Postnatal Depression Scale; which is a 10-item self-rated questionnaire reliably used for screening and recommended by the U.S. preventative

taskforce to identify women at risk of developing PPD [9].

Multiple factors play a role in the development of PPD; these can be categorized into four main domains: psychological factors such as antenatal depression and anxiety, history of a psychiatric disorder, stressful life events, and childcare stress. Obstetrical and pediatric factors including mothers of infants with medical illness, lack of childcare knowledge, and breastfeeding problems. Physical and biological factors including poor physical health, and negative body image. Socio-demographic factors such as low socio-economic status and lack of social support [10].

PPD is a common health problem that affects both the infant and the mother after delivery. A consequence of which has a great impact on the infant cognitive and behavioral development. This leads to serious distresses on the whole family. Studies indicated that PPD-affected mothers were less likely to have intimate contact with their infants, compared to those who never experienced PPD [11, 12].

Managing PPD requires a multidisciplinary approach from the medical team for effective detection and treatment. Pediatricians, obstetricians, and primary health care practitioners could play a role in screening women throughout pregnancy and the postpartum period. Granted that the condition is mild, support could be offered through extra visits for interpersonal psychotherapy, as well as supportive interventions such as telephone-based peer support. These, alongside incorporating physical exercise to the daily routine and having family support may help manage the symptoms without the involvement of medications [13].

The need for additional assistance with evidence-based psychotherapies (such as cognitive behavioral therapy) and pharmacological treatment (with antidepressants) should be considered based on the severity of the condition. The options are flexible to the patients' preference and intensity of depression [14].

A real-life example is when PPD affected one of the authors conducting this research. After having her first child without any support at that time, she hardly passed her senior year of medical school. She felt exhausted, tearful, and guilty. That is why we chose to direct the attention to such an underdiagnosed disorder, with an estimated prevalence of 10-15%

worldwide. Conjointly, PPD has a great impact and long-term consequences on mothers and on their children's cognitive and emotional development [15]. Since it is a condition that occurs in a specific time frame starting during pregnancy or in the first 4 weeks following delivery, it is easy to be early detected and diagnosed in primary healthcare centers (PHCCs). This study aimed to assess level of knowledge regarding PPD and its determinants among physicians at Ministry of Health (MOH), PHCCs in Jeddah 2020.

Methods

This is a cross-sectional study targeted doctors working in PHCCs under the MOH in Jeddah (general practitioners, residents, registrars, senior registrars, fellows, and consultants). Only doctors who were unavailable at work or refuse to participate were excluded from this study. The sample size was calculated to be 110 participants based on estimated total number of doctors at 95% confidence interval and 5% margin of error. The study was carried out using a structured questionnaire in English, validated by three consultants: a psychiatry consultant then an obstetrics and gynecology consultant, and finally by a family and community medicine consultant.

The questionnaire consists of 2 parts. The first section contains information regarding socio-demographic variables such as gender, age and work-related characteristics of the PHCCs physicians. Section two consists of questions aimed to assess the knowledge about PPD (symptoms, screening, risk factors, diagnosis, and management), including DSM V diagnostic criteria.

The statistical analysis was carried out using the Statistical Package for Social Sciences version 20 (SPSS Inc., Chicago, IL, USA). The descriptive statistics such as frequencies, percentages were calculated to summarize nominal and ordinal data. Chi-square test was applied to evaluate the association between the determinants and the outcome variables. Any p -value <0.05 was considered for significance. A consent form was obtained from the participants at the beginning of the questionnaire and was required to be read and signed by the participant. This study was approved by an ethical committee in MOH.

Results

A total of 110 doctors, who were working in PHCCs in Jeddah city, Saudi Arabia, were included in this study. About two thirds of the respondents were females. Most of the doctors (95.4%) were Saudis. About a half of the doctors aged 21-34 years old, while only 16.7% aged more than 44 years old. Regarding the qualifications, the majority of the doctors (63%) had MBBS while 26.8% had a board degree in family medicine either from Saudi or Arab Board. Job title is mainly GPs (53.6%), 15.5% registrars, and 18.2% were consultants (table 1).

Distribution of the work-related characteristics of the respondents are presented in table 2. Duration of work for the doctors was more than 5 years in about a half of the respondents, whereas 22.9% had less than one year of work experience. About 77.3% have worked in mental health facility and a quarter of the doctors see more than 50 patients per week. Almost three quarters of the doctors were always seeing female patients in their clinic, while only 37.3% were frequently working in well-baby clinics. Regarding screening for PPD, 43.6% did sometimes screening for PPD while 44.5% rarely or never did screening for PPD.

Table 3 demonstrates knowledge categories about post-partum depression among the doctors who were working in PHCCs. The total score of knowledge about PPD ranged from 11-41 with mean score of 30.6 ± 6.6 . Only 58.2% of the doctors had high level of knowledge about PPD, though 9.1% had a low level of knowledge ($<50\%$ correct answers). Using the curve method to assess the knowledge, about 75.5% of the doctors scored average or above average. Regarding subdomains of knowledge, knowledge about symptoms was the best among all subdomains while knowledge about screening and diagnosis of PPD was the worst. As high as 85.5% were considered to have a high level of knowledge about symptoms of PPD and only 30.9% had a high level of knowledge about screening and diagnosis of PPD. Doctors who had a high knowledge about risk factors, management, and complications were accounted for 62.7%, 67.3% and 43.6%, respectively.

Associations between respondents' characteristics and knowledge about PPD are shown in table 4. Gender and age of the doctors were not significantly

Table (1): Demographic characteristics of the respondents

<i>Characteristics</i>	<i>Frequency</i>	<i>Percent (%)</i>
Gender		
<i>Male</i>	37	33.9
<i>Female</i>	72	66.1
Age		
<i>21-34</i>	56	51.9
<i>35-44</i>	34	31.5
<i>45-54</i>	16	14.8
<i>55-64</i>	2	1.9
Nationality		
<i>Saudi</i>	104	95.4
<i>Non-Saudi</i>	5	4.6
Qualification		
<i>MBBS</i>	68	63
<i>Saudi Board FM</i>	22	20.4
<i>Arab Board FM</i>	7	6.4
<i>Other</i>	11	10
Job title		
<i>GPs</i>	59	53.6
<i>Residents</i>	13	11.8
<i>Registrars</i>	7	6.4
<i>Senior residents</i>	10	9.1
<i>Fellow</i>	1	0.9
<i>Consultant</i>	20	18.2

associated with knowledge about post-partum depression ($p=0.390$ and 0.417 , respectively). However, medical qualifications and job title were significant determinants for knowledge about post-partum depression ($p=0.013$ and 0.004 , respectively). A significantly higher percentages of those who had a

board degree in family, either Saudi or Arab board (91% or 100%), had a good level of knowledge, in comparison to 72.1% and 45.5% of those who had MBBS and other qualifications. Similarly, all consultants, fellow and senior registrars had a good level of knowledge compared to only 61%, 77%, and 86% of GPs, residents and registrars, respectively.

Discussion

In Saudi Arabia, governmental PHCCs are the first line for preventive and curative care health services. The total number of primary health centers, in Saudi Arabia, has been increased from 1925 in 2007 to 2325 in 2016 [16]. According to the recommendations of the world health organization (WHO), the primary healthcare setting should be prepared to be the first contact with patients who had mental problems [17]. Although it is a common practice in PHC in Saudi Arabia [18], referral of psychologically ill-patients to a specialist should not be the best practice as many mental conditions could be treated at the primary healthcare setting. Stigma is another reason why patients feel more comfortable when treated by a family doctor than a psychiatrist [19]. Moreover, there is an opportunity to do screening of mental health for certain conditions that particularly affect certain age or gender categories such as PPD. It is crucial for health workers, particularly at PHC level, to have a good knowledge about screening, diagnosis and treatment of PPD.

In the present study, 58.2% of the doctors had high level of knowledge about PPD, while 9.1% had a low level of knowledge (<50% correct answers). Another study included physicians from hospitals in Riyadh city, postpartum depression was defined accurately by about 24%, 49%, and 58% of GPs, specialists, and family physicians [18]. Different categorization for medical degree was used in the present study, as physicians were divided into GPs, residents, specialists and consultants. A higher percentage (61%) of the included GPs had a good knowledge about PPD (>50% correct answers) than that reported among GPs in Riyadh hospitals.

The majority of the studies in the literature focused on nurses and midwives' knowledge because of their

Table (2): Distribution of the work-related characteristics of the respondents

Characteristics	Frequency	Percent (%)
Duration of work		
<1 year	25	22.9
1-5 years	30	27.5
>5 years	54	49.5
Have you worked in mental health facility		
Yes	25	22.7
No	86	77.3
How many patients seen per week?		
<20	11	10.0
20-30	19	17.3
31-40	36	32.7
41-50	17	15.5
>50	27	24.5
How frequent do you see female patients?		
Always	81	74.3
Sometimes	17	15.6
Rarely	8	7.3
Never	3	2.8
How frequent do you cover well-baby clinic?		
Always	41	37.3
Sometimes	37	33.6
Rarely	21	19.1
Never	11	10.0
How frequent do you screen for PDD in your clinic?		
Always	13	11.8
Sometimes	48	43.6
Rarely	27	24.5
Never	22	20.0

assumed role in early detection of PPD. In Sri Lanka, all health workers including medical officers, midwives, and nurses have heard about mental illness related to pregnancy. Sri Lanka is a low-middle

income country but it is well-known to have a good maternal health service [20]. However, only 77.1% had a satisfactory general knowledge about PPD [20]. Interestingly, a lower percentage of medical officers (69.7%) had a satisfactory general knowledge than nurses (80.2%) or midwives (75.3%) [20]. In Australia, they found that, on average, about 63% and 71% of questions related to antenatal and PPD were answered correctly by midwives, respectively [21]. In the present study, those who had >75% correct answers constituted only 58.2% of the PHC physicians.

These findings supported the hypothesis that nurses and midwives had better knowledge about pregnancy related mental illnesses than physicians. The American College of Midwives recommended that screening, management, and referral of depressed mothers should be done by certified midwives [22]. In Ireland, 71.1% of midwives had a high level of knowledge about pregnancy-related depression [23]. Based on the findings of a qualitative study, health workers at primary healthcare in Brazil reported a lack of systematic knowledge about PPD. Moreover, they identified the definitive signs of PPD as predisposition factors for the disease which might lead to delay of diagnosis and treatment [24].

Based on our readings, despite different assessment tools used in the previous studies, nurses and midwives seem to have a comparable or sometimes better knowledge about PPD than physicians. In the present study, 85.5% were considered to have a high level of knowledge about symptoms of PPD and only 30.9% had a high level of knowledge about screening and diagnosis of PPD. Similarly, 85.9% of health workers in Sri Lanka had a satisfactory knowledge about PPD [20]. Among Australian midwives, the items who had the highest correct answer rate were related to knowledge about onset of PPD while the lowest correct answer rate was in knowledge of treatment methods (71% versus 32%, respectively) [25]. However, only 20% of midwives in Kazakhstan knew about the onset of PPD [26].

PPD has the criteria of screenable diseases such as high chance for early detection, availability of treatment, and long-term complications in case of not treated [27]. Screening is important because studies

Table (3): Distribution of knowledge categories about PPD among the doctors working in PHCCs

Item	Frequency	Percent (%)
General PPD knowledge		
Low (<50% correct answers)	10	9.1
Moderate (50-75% correct answers)	36	32.7
High (>75% correct answers)	64	58.2
General knowledge categories		
Poor (lower than average knowledge)	27	24.5
Good (average knowledge or higher)	83	75.5
Knowledge about symptoms of PPD		
Low (<50% correct answers)	2	1.8
Moderate (50-75% correct answers)	14	12.7
High (>75% correct answers)	94	85.5
Knowledge about risk factors of PPD		
Low (<50% correct answers)	12	10.9
Moderate (50-75% correct answers)	29	26.4
High (>75% correct answers)	69	62.7
Knowledge about screening and diagnosis of PPD		
Low (<50% correct answers)	31	28.2
Moderate (50-75% correct answers)	45	40.9
High (>75% correct answers)	34	30.9
Knowledge about management of PPD		
Low (<50% correct answers)	15	13.6
Moderate (50-75% correct answers)	21	19.1
High (>75% correct answers)	74	67.3

Knowledge about complications of PPD

Low (<50% correct answers)	43	39.1
Moderate (50-75% correct answers)	19	17.3
High (>75% correct answers)	48	43.6

showed that the majority of mothers did not seek medical help for mental conditions such as depression and anxiety [28].

Knowledge about a screening tool of PPD such as Edinburgh Postnatal Depression Scale (EPDS) was inadequate in the present study as only a third of the physicians had a high level of knowledge about screening of PPD. A slightly higher proportion of health workers (42.8%) in Seri Lanka heard about screening tool of EPDS [20]. Moreover, only 11.8% of the included physicians always do screening for PPD during clinical practice. A study found that health workers in primary health care are reluctant to treat women with mental illness and they more comfortable to refer the cases to psychiatric care [29]. In the qualitative study, conducted at primary healthcare in Brazil, health professionals were unaware about tools of PPD screening [24].

In the present study, physicians who had a high knowledge about risk factors, management, and complications were accounted for 62.7%, 67.3% and 43.6%, respectively. Knowledge about risk factors, availability of treatment, and complications was slightly higher among health workers in Seri Lanka where 77.9%, 61% and 85.9% had a satisfactory knowledge about PPD, respectively [20]. These findings are comparable, in terms of knowledge about risk factors and availability of treatment, but much higher, in knowledge about complications, when compared to the present study. Knowledge about risk factors and management of PPD among Kazakhstan midwives was similar to that reported among physicians in the present study, with 64% and 45% correctly answered questions by the midwives [30]. In the qualitative study conducted at primary healthcare in Brazil, health professionals named risk factors as isolated items while in the literature they are considered as an inter-related set of physiological, psycho-social and obstetric factors [24]. Identification

of symptoms by health professional depends on several factors such as type of profession which was highlighted by the findings of a qualitative study in Mexico [31]. In Mexican health workers, physicians were more likely to report under-eating and somatic problems as symptoms of PPD, while nurses identified loss of concentration as a symptom of PPD [31]. Specific symptoms of PPD such as guilt and flat affect were only reported by psychologists [31].

Age of the doctors were not significantly associated with knowledge about PPD. Differently, age was a significant predictor of knowledge of PPD in Australian midwives, as younger midwives had greater knowledge [25]. Among health workers in Sri Lanka, younger health workers had more knowledge about screening tools of PPD [29].

In the present study, high education qualifications were associated with knowledge about PPD. A significantly higher percentages of those who had a board degree in family medicine, either Saudi or Arab board, had a good level of knowledge, in comparison to those who had MBBS and other qualifications. Even among Australian midwives, those with higher educational qualifications were significantly more knowledgeable regarding PPD [25]. Moreover, midwives in Ireland, who were exposed to professional training in perinatal mental health, found to be more knowledgeable and skillful than non-trained midwives [32].

Training is an important approach to raise awareness about PPD at primary healthcare setting. Web-based training is a cost-effective method but the available websites are not interactive with minimal graphics or opportunities to apply knowledge in certain scenarios [33].

Development of educational interactive online platform with multimedia and downloadable tools is recommended to raise awareness about PPD among health professional at primary healthcare level. Targeting non-physician professions, such as nurses and midwives with suitable training methods is essential for early detection and intervention of the problem.

Table (4): Association between respondents' characteristics and knowledge about post-partum depression

Determinants	Knowledge about post-partum depression		Chi-square	P value
	Poor knowledge	Good knowledge		
Gender				
Male	11 29.7%	26 70.3%	0.74	0.390
Female	16 22.2%	56 77.8%		
Age				
21-34	17 30.4%	39 69.6%	2.8	0.417
35-44	6 17.6%	28 82.4%		
45-54	3 18.8%	13 81.3%		
55-64	1 50%	1 50%		
Qualifications				
MBBS	19 27.9%	49 72.1%	10.7	0.013*
Saudi Board FM	2 9.1%	20 90.9%		
Arab Board FM	0 0.0%	7 100%		
Others	6 54.5%	5 45.5%		
Job title				
GP	23 39%	36 61%	17.1	0.004*
Resident	3 23.1%	10 76.9%		
Registrar	1 14.3%	6 85.7%		
Senior registrar	0 0.0%	10 100%		
Fellow	0 0.0%	1 100%		
Consultant	0 0.0%	20 100%		

Conclusions

The level of knowledge was, in general, good but inadequate regarding certain domains of PPD among physicians in primary health care. The physicians were highly aware about symptoms and management methods of post-partum depression, however, they had low knowledge about screening, diagnosis and complications of the condition. Medical qualifications and job title were significant determinants for knowledge about PPD while age and gender had no significant association with the knowledge.

General practitioners and residents should be specifically targeted in the training programs aiming at improvement of knowledge about post-partum depression. Management of PPD at the primary healthcare setting could improve the accessibility and reduce the stigma associated with psychological conditions.

Conflict of interests

The authors declared no conflict of interests.

References

1. Webber, E. and J. Benedict, Postpartum depression: a multi-disciplinary approach to screening, management and breastfeeding support. *Archives of psychiatric nursing*, 2019. 33(3): p. 284-289.
2. Edition, F., *Diagnostic and statistical manual of mental disorders*. Am Psychiatric Assoc, 2013. 21.
3. Clevesy, M.A., et al., A project to improve postpartum depression screening practices among providers in a community women's health care clinic. *Nursing for women's health*, 2019. 23(1): p. 21-30.
4. Ko, J.Y., et al., Trends in postpartum depressive symptoms—27 states, 2004, 2008, and 2012. *MMWR. Morbidity and mortality weekly report*, 2017. 66(6): p. 153.
5. Santoro, K. and H. Peabody, *Identifying and treating maternal depression: Strategies and considerations for health plans*. Washington, DC: National Institute of Health Care Management, 2010: p. 1-28.
6. Green, K., H. Broome, and J. Mirabella, Postnatal depression among mothers in the United Arab Emirates: socio-cultural and physical factors. *Psychology, health & medicine*, 2006. 11(4): p. 425-431.
7. Alasoom, L.I. and M.R. Koura, Predictors of postpartum depression in the eastern province capital of Saudi Arabia. *Journal of family medicine and primary care*, 2014. 3(2): p. 146.
8. Noonan, M., et al., Family physicians perceived role in perinatal mental health: an integrative review. *BMC family practice*, 2018. 19(1): p. 1-22.
9. Siu, A.L., et al., Screening for depression in adults: US Preventive Services Task Force recommendation statement. *Jama*, 2016. 315(4): p. 380-387.
10. Norhayati, M., et al., Magnitude and risk factors for postpartum symptoms: a literature review. *Journal of affective Disorders*, 2015. 175: p. 34-52.
11. Righetti-Veltema, M., A. Bousquet, and J. Manzano, Impact of postpartum depressive symptoms on mother and her 18-month-old infant. *European child & adolescent psychiatry*, 2003. 12(2): p. 75-83.
12. Lovejoy, M.C., et al., Maternal depression and parenting behavior: A meta-analytic review. *Clinical psychology review*, 2000. 20(5): p. 561-592.
13. Fitelson, E., et al., Treatment of postpartum depression: clinical, psychological and pharmacological options. *International journal of women's health*, 2011. 3: p. 1.
14. De Crescenzo, F., et al., Selective serotonin reuptake inhibitors (SSRIs) for post-partum depression (PPD): a systematic review of randomized clinical trials. *Journal of affective Disorders*, 2014. 152: p. 39-44.
15. Vigod, S.N., et al., Prevalence and risk factors for postpartum depression among women with preterm and low-birth-weight infants: a systematic review. *BJOG: An International Journal of Obstetrics & Gynaecology*, 2010. 117(5): p. 540-550.
16. Alghamdi, K., et al., Public awareness and utilization of the primary health care services in Al-Madinah, Saudi Arabia. *Middle East Journal of Family Medicine*, 2020. 7(10): p. 33.
17. Bhana, A., et al., Implementing the World Health Report 2001 recommendations for integrating mental health into primary health care: a situation

analysis of three African countries: Ghana, South Africa and Uganda. *International Review of Psychiatry*, 2010. 22(6): p. 599-610.

18. Al-Atram, A.A., Physicians' knowledge and attitude towards mental health in Saudi Arabia. *Ethiopian journal of health sciences*, 2018. 28(6).

19. Sapag, J.C., et al., Stigma towards mental illness and substance use issues in primary health care: Challenges and opportunities for Latin America. *Global Public Health*, 2018. 13(10): p. 1468-1480.

20. Patabendige, M., S. Athulathmudali, and S. Chandrasinghe, Mental health problems during pregnancy and the postpartum period: A multicenter knowledge assessment survey among healthcare providers. *Journal of Pregnancy*, 2020. 2020(20): p. 4926702-4926702.

21. Buist, A., et al., Health professional's knowledge and awareness of perinatal depression: Results of a national survey. *Women and Birth*, 2006. 19(1): p. 11-16.

22. Daley, A.J., C. MacArthur, and H. Winter, The role of exercise in treating postpartum depression: a review of the literature. *Journal of midwifery & women's health*, 2007. 52(1): p. 56-62.

23. Noonan, M., et al., Survey of midwives' perinatal mental health knowledge, confidence, attitudes and learning needs. *Women and Birth*, 2018. 31(6): p. e358-e366.

24. Meira, B.d.M., et al., Challenges for primary healthcare professionals in caring for women with postpartum depression. *Texto & Contexto-Enfermagem*, 2015. 24: p. 706-712.

25. Jones, C.J., D.K. Creedy, and J.A. Gamble, Australian midwives' knowledge of antenatal and postpartum depression: a national survey. *Journal of midwifery & women's health*, 2011. 56(4): p. 353-361.

26. Махмытова, Э., Assessment of Nurses Knowledge of Postpartum Depression. 2020.

27. Georgiopoulos, A.M., et al., Routine screening for postpartum depression. *Journal of Family Practice*, 2001. 50(2): p. 117-121.

28. Dennis, C.L. and L. Chung-Lee, Postpartum depression help-seeking barriers and maternal treatment preferences: A qualitative systematic review. *Birth*, 2006. 33(4): p. 323-331.

29. Weinreb, L., et al., What happens to mental health treatment during pregnancy? Women's

experience with prescribing providers. *Psychiatric Quarterly*, 2014. 85(3): p. 349-355.

30. Махмытова, Э., Assessment of Nurses Knowledge of Postpartum Depression, in *Social services, Health and Sports*. 2020, Jamk university of applied sciences. p. 49.

31. Place, J.M.S., et al., Conceptualizations of postpartum depression by public-sector health care providers in Mexico. *Qualitative health research*, 2015. 25(4): p. 551-568.

32. Carroll, M., et al., Knowledge, confidence, skills and practices among midwives in the republic of Ireland in relation to perinatal mental health care: The mind mothers study. *Midwifery*, 2018. 64: p. 29-37.

33. Logsdon, M.C., et al., Raising the awareness of primary care providers about postpartum depression. *Issues in mental health nursing*, 2006. 27(1): p. 59-73.

