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Australian midwives' knowledge of antenatal and postpartum depression:

A national survey

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Biographical sketches

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Précis

Assessment of Australian midwives' knowledge and learning needs to provide emotional care for women experiencing antenatal and postpartum depression.

Abstract

Introduction: Emotional care provided by midwives may improve health and well-being; reduce stress, trauma and depressive symptoms; and enhance maternal outcomes in childbearing women. The provision of intrapartum and postpartum emotional care can be challenging and requires a good knowledge base in order to screen and assist distressed women. This study assessed Australian midwives' level of knowledge and learning needs of antenatal depression and postpartum depression. **Methods:** Eight hundred and fifteen members of the Australian College of Midwives completed a postal survey, which consisted of 20 items drawn from the literature and the "National Baseline Survey – Health Professional Knowledge Questionnaire". **Results:** On average, respondents correctly answered 62.9% of items related to antenatal depression and 70.7% of questions about postpartum depression. Many midwives were unable to identify the risk factors (70.6%) or prevalence of antenatal depression (49.6%). Nearly all (98.3%) respondents underestimated the percentage of antenatally depressed women that attempt suicide. Significant percentages of midwives did not correctly identify the incidence (44.4%), onset period (71%) and treatment options (32%) associated with postpartum depression. Around half did not understand the use of antidepressant medications (48.6%) and incorrectly reported that the Edinburgh Postnatal Depression Scale was a suitable instrument to assess symptoms of psychotic depression (43.8%). **Discussion:** There are key knowledge deficits relating to onset, assessment and treatment for depressive symptoms during the antenatal and postpartum periods. There is a need for continuing professional education to improve midwives' knowledge and competency in the assessment and care of women suffering depression.

Keywords: *midwives, antenatal, postpartum, depression, emotional care, knowledge*

INTRODUCTION

Emotional disorders during pregnancy and postpartum are important public health issues. There are extensive immediate and long-term adverse consequences of maternal depression for women, children and their families¹. Maternal depression can negatively influence the mother-infant relationship²; attachment security³; and increase the risk of cognitive delays^{4,5}, social-behavioural problems⁶ and affective disorders⁷ in young children.

Depression often remains undetected in childbearing women^{2,8,9}. Although health professionals are well positioned to prevent, recognise, and treat emotional disturbances during pregnancy and postpartum¹⁰⁻¹², the provision of effective emotional care has been reported to be encumbered by systemic (e.g. lack of time and resources) and service (e.g. lack of training and support and unfamiliarity with screening instruments) barriers¹³⁻¹⁵. On the other hand, women's reluctance to seek assistance when feeling depressed is, in part, due to a lack of trust in health professionals and concerns about privacy, confidentiality and the prospect of receiving unhelpful responses that include the dismissal and trivialisation of their feelings^{13,16,17}.

In early 2007, a national Australian mental health initiative, *beyondblue*, commissioned the Perinatal Mental Health Group to develop a National Action Plan to inform the development of policies and governance structures in perinatal emotional care¹⁸. The National Perinatal Depression Initiative was subsequently established in early 2008 by the Australian, State and Territory Governments to improve the prevention and early detection of antenatal depression and postpartum depression (PPD) so as to enhance the care, support and treatment for expectant and new mothers experiencing perinatal depression¹⁹. In addition to an allocation of \$55 million over five years, the Australian Government funded the coordination, implementation and evaluation of the National Perinatal Depression Initiative. The State and Territory Governments, guided by *beyondblue's* Perinatal Mental Health National Action Plan, collaborated in the development of a national approach to perinatal depression and implementation of the National Perinatal Depression Initiative in individual jurisdictions in line with local needs and priorities.

As a result of these initiatives, routine psychosocial assessment; appropriate training for health professionals; and information and pathways to care for women with perinatal mental disorders were expected to be integrated into existing practice. Under the Australian National Health and Medical Research Council's (NHMRC) Clinical Practice Guidelines for

Depression and Related Disorders in the Perinatal Period (released by *beyondblue* for public consultation in 2010²⁰), routine screening for perinatal depression is expected to be conducted by health professionals (including midwives) largely in primary maternal and child health care settings. In addition, health professionals will be trained to increase their (a) awareness of perinatal depression; (b) ability to undertake screening using nationally recognised tools to identify women who are at risk of, or experiencing perinatal depression; (c) ability to refer or direct women to treatment, support and care services that meet the individual's needs; and (d) ability to provide treatment and/or appropriate support. These national initiatives signify a need for greater integration of psychological care into midwifery practice.

Childbearing women have been critical of the intrapartum and postpartum emotional care provided by midwives and other health care providers²¹⁻²⁴. Women want opportunities to discuss their childbirth-related experiences and feelings with a midwife^{25,26}. Although midwives acknowledge the importance of emotional support in assisting women's psychological adaptation to motherhood, some are concerned that ineffective emotional support may exacerbate emotional distress and create new problems²⁷. These concerns however, may be a reflection of midwives' anxiety and uncertainty about their perceived ability to provide emotional support for childbearing women²⁸. Midwives are well positioned to offer timely and appropriate mental health assessment, quality health information, and psychosocial support to pregnant women²⁶. They can also assist postnatally depressed women to make informed choices about treatment and resources, and provide first line treatment and referral²⁹.

Few studies have assessed midwives' knowledge of depression during pregnancy and postpartum. Such studies have only been conducted in Australia^{30,31}, United Kingdom (UK)³², Slovenian³³ and Malaysia³⁴ where midwives were found to possess limited knowledge about the recognition and management of PPD. In an Australian study of health professionals, a diagnosis of depression was more likely to be considered for postpartum women than during pregnancy³⁰. In order to meet the needs of childbearing women through the provision of competent and effective emotional care, it is essential for midwives to possess adequate knowledge and understanding of emotional work in practice. This paper reports the results of a survey examining Australian midwives' knowledge of antenatal depression and PPD. Unlike prior studies conducted in Australia^{30,31}, this survey aimed to differentiate

midwives' knowledge of antenatal depression and PPD as well as assessing their awareness of the comorbidity of depression and other associated emotional disturbances (i.e. anxiety).

METHODS

Sample

A national sample of midwives was obtained via the Australian College of Midwives (ACM). The ACM aims "to be the leading organisation shaping Australian maternity care" and achieve professional excellence in midwifery by striving to "maximize the quality of midwifery and maternity care for Australian women and their families"³⁵. When data were collected in 2007, the ACM had approximately 3000 members, of which approximately one-third ($n \approx 1000$) were current practicing midwives (i.e. registered midwives and/or registered nurses and registered midwives). The remaining members include midwives who were neither working nor currently in the paid workforce (e.g. retired, on maternity leave, undertaking further studies); student midwives; and consumer of midwifery services or those interested in the midwifery profession and support the objectives of the College. Current practicing midwives, who were members of the ACM, were invited to participate in the study.

Data collection - survey

The survey collected respondents' demographic data relating to age, gender, education level, employment, years and type of midwifery practice, educational preparation for the screening and care of women with antenatal depression and/or PPD, as well as the perceived adequacy of this education. It also consisted of 20 multiple choice items that measured respondents' knowledge of the onset, incidence, comorbidity, symptoms, associated risk factors, assessment and treatment strategies of antenatal depression and PPD (refer to Appendix A). Respondents were required to select one of four answer options provided for each item. A score of one was allocated for each correct answer up to a total score of 20. Items were drawn from *beyondblue's* "National Baseline Survey – Health Professional Knowledge Questionnaire"³⁶, which surveyed general practitioners, midwives, mental health nurses and maternal child health nurses. Items were also developed from a review of the literature; and the Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition Text Revision (DSM-IV-TR). Items were then critically reviewed by two

maternity researchers. The 20-item survey was pilot tested with a group of Master of Midwifery students ($n = 13$) to establish reliability and face validity. Items were subsequently amended in consultation with the two expert maternity researchers prior to distribution.

The Laboratory of Educational Research Test Analysis Package (LERTAP) Version 5 was used to examine (a) item difficulty (b) item discrimination; and (c) the internal consistency (i.e. reliability) for the final 20-item survey. The upper-lower (U-L) indices were computed using the classic method of taking the top 27% and bottom 27% of the test scores to determine items with good discrimination and of moderate difficulty. The respective average U-L discrimination and difficulty indices were .17 and .68, indicating that the optimal ideal difficulty level of approximately 0.6 for a four-option multiple-choice item survey³⁷ was attained with satisfactory item discrimination^{38,39}. Adequate internal consistency for the new twenty-item survey was also obtained ($r = .69$)⁴⁰.

Procedure

Griffith University Human Research Ethics Committee approval was obtained. The survey and a reply-paid envelope were sent to all members of the ACM through the College's quarterly newsletter (i.e. the Spring (September) 2006 issue of the Australian Midwifery News). A reminder notice was placed in the following issue. Consent was implied by returning the survey form. Surveys received prior to June 2007 were included for data analysis.

Data analysis

Data were entered into the Statistical Package for Social Science (SPSS) Version 13.0 and checked for completeness and consistency. Accuracy of data coding and entry were ensured by undertaking a 10% random comparison between the computerized data and the original data. Associations between categorical and continuous variables (i.e. demographic characteristics) with knowledge of antenatal depression and PPD were determined using Analysis of Variance (ANOVA) and Multiple Regression (MRA) analyses respectively. An alpha level of 0.01 was used for all statistical tests to reduce the likelihood of Type 1 error.

RESULTS

A total of 815 completed postal surveys (804 females and 11 males) were received representing a response rate of 81.5%. Although 8.8% of respondents were working as an educator, researcher or manager, these roles were in clinical services and were included in the analysis. Comparisons between sample characteristics of respondents and available national midwifery workforce data⁴¹ are illustrated in Table 1. Age, gender, mean weekly work hours and the extent of direct client care provision of respondents were comparable to national data. Although the proportion of respondents working in either the private or public sectors was similar to national data, the percentage of respondents working in hospitals was 14.7% lower than the national average.

INSERT TABLE 1

Knowledge of antenatal and postpartum depression

Of the 20 questions examining knowledge of antenatal depression and PPD, respondents obtained an average total score of 13.43 ($SD = 2.22$) ranging from 0 to 19. On average, respondents correctly answered 62.9% of questions assessing antenatal depression ($SD = 14.0$) and 70.7% on PPD ($SD = 14.3$). The majority of respondents (86.9%; $n = 708$) were aware of the comorbid relationship between depression and anxiety where both can occur during the antenatal and postpartum periods. Associations between respondents' characteristics and their knowledge of antenatal depression and PPD were examined. Multiple regression analysis revealed the age of respondents to be a significant predictor of knowledge level of antenatal depression and PPD with younger respondents ($F(1,813) = 16.96$, $P = .001$) demonstrating greater knowledge of antenatal depression and PPD. Additionally, ANOVA found educational qualifications to be significantly associated with antenatal depression and PPD knowledge where respondents with higher educational qualifications ($F(5,785) = 1.47$, $P = .004$) had better knowledge.

In order to make general determinations about midwives' knowledge, a topic was deemed to be known if at least 75% of the sample made a correct response. Results revealed that respondents incorrectly answered questions about several topics. For questions investigating antenatal depression (refer to Table 2), close to half of respondents

were not able to identify the proportion of pregnant women with depression. Over a quarter of respondents did not know about some adverse outcomes associated with antenatal depression including gestational hypertension, pre-eclampsia and miscarriage. The majority of respondents underestimated the percentage of women suffering from depression during pregnancy who subsequently attempt suicide. Many were not aware of the risk factors of antenatal depression and a third did not know about common treatments for antenatal depression including medication and counselling.

INSERT TABLE 2

In regards to knowledge of PPD (refer to Table 3), a quarter of respondents underestimated the proportion of mothers who experienced maternity blues while around half either underestimated or overestimated the proportion of mothers suffering PPD. The majority of respondents were not aware of the onset period for PPD. Over a quarter indicated the common onset period for PPD to be 10 – 14 days rather than one month after childbirth. Around a third of respondents were not aware of the recommended treatment for moderate to severe PPD that included psychotherapy and antidepressant medications. Less than half of respondents reported that mothers may be able to breastfeed while taking antidepressant medications. Instead 48.6% ($n = 370$) of the respondents incorrectly indicated that antidepressant medications were effective immediately whereas it can take 4 to 6 weeks for the effects of antidepressant medications to reach therapeutic levels of effectiveness. Lastly, close to half of respondents erroneously reported that the Edinburgh Postnatal Depression Scale (EPDS) was able to fully assess symptoms of psychotic depression.

INSERT TABLE 3

Education and training on antenatal and postpartum depression

Around one-third of midwives believed that their education or training on care of childbearing women with depression had been adequate (30.8%; $n = 248$); somewhat adequate (48.5%; $n = 390$) or not adequate at all (14.9%; $n = 120$). Over half the respondents 55.8% ($n = 450$) reported there was too little emphasis on assessment and management of

women with antenatal depression and PPD during their midwifery education; 18.1% ($n = 146$) reported no emphasis. Around a quarter of midwives (24.3%, $n = 196$) reported adequate emphasis. Furthermore, 35.6% ($n = 285$) indicated they needed further training to improve their skills to assess and care for women with antenatal depression and PPD. Midwives who felt they did possess adequate skills indicated that further training might be useful (60.5%; $n = 485$).

Overall, midwives indicated that opportunities to practice assessment (66.8%; $n = 537$) and management strategies for (72.4%; $n = 581$) antenatal depression and PPD during their midwifery program would have better prepared them for their role. Nearly two-thirds (59.3%; $n = 476$) indicated the desire for greater knowledge about treatment strategies. The majority of midwives (81.5%, $n = 659$) indicated that on-the-job experience provided knowledge about antenatal depression and PPD, while half (54.3%, $n = 439$) reported that conferences and workshops were the two main sources of information, 34.1% learnt from colleagues, while 20% indicated that tertiary education or other accredited courses were the main sources for learning about the assessment and management of antenatal depression and PPD.

DISCUSSION

This national study with a representative sample was designed to ascertain the current level of knowledge and professional development needs of Australian midwives in providing competent and effective emotional care to childbearing women. Unlike previous research by Buist et al.³⁰, this present survey was unique in its differentiation of knowledge of antenatal depression and PPD and investigation of midwives' awareness of the comorbidity of depression and anxiety. Our study confirms that midwives have reasonable knowledge of antenatal depression and PPD (average percentage of 67.2) and this result is similar to the average (64%) reported by Buist et al.³⁰. Higher average percentages were obtained for questions about PPD (70.7%) than antenatal depression (62.9%), consistent with those of Buist et al.³⁰ who found that health professionals have greater awareness of depression in the postpartum than the antenatal period. Midwives who participated in the current survey demonstrated knowledge of the comorbidity of depression and anxiety during the antenatal and postpartum periods

The current survey found that the majority of Australian midwives underestimated the proportion of pregnant women who meet the diagnostic criteria for depression and this finding is consistent with a similar study of UK midwives³². There was also limited understanding of risks associated with antenatal depression and common treatment approaches. Interestingly, almost all midwives underestimated the percentage of antenatally depressed women who subsequently attempt suicide. These knowledge deficits about antenatal depression may explain why health professionals, including midwives, were previously found to under-diagnose depression during pregnancy and appear uncertain or overly cautious in recommending treatment options³⁰. It is important for midwives to know the immediate and long-term implications of antenatal depression and offer timely support and information (e.g. referral and treatment options) to minimize the risk of depression in the postpartum period.

Despite widespread public education and published research, midwives tend to underestimate the prevalence of PPD. In a previous study with Australian midwives, 72.2% stated that PPD occurred rarely or occasionally³¹. Similar results were found in a UK study where only 47% of midwives were aware of the prevalence of PPD³²; a Slovenian study where around 50% of midwives correctly estimated the prevalence of PPD³³; and a Malaysian study where 61% of midwives perceived the prevalence of PPD to be less than 10%³⁴. Nearly half the midwives in the current survey incorrectly estimated the proportion of women suffering from PPD.

An earlier study of Australian midwives³¹ reported an inconsistent understanding of symptoms related to mild and moderate PPD. Better recognition of PPD was only found when the severity of depressive symptoms intensified³¹. Although knowledge of symptom severity associated with PPD was not examined in the current study, midwives were knowledgeable about common symptoms and diagnostic criteria of PPD with around 90% of midwives correctly answering all questions on these topics. However, in regards to assessment, there was a mistaken understanding about the use of the Edinburgh Postnatal Depression Scale (EPDS) to detect symptoms of psychotic depression. Edinburgh Postnatal Depression Scale is a 10-item self-reporting instrument designed to assist health professionals to detect depression symptoms in community samples of women following childbirth⁴². Of the 10 items, only one addresses somatic symptoms (which often occur in postpartum women due to the demands of mothering) while the remaining items focus on

affective feelings during the past 7 days as well as attending to depressed mood, anhedonia, guilt, anxiety and suicidal ideation. The scale does not replace a full assessment of PPD in childbearing women and it does not predict PPD or provide a measure of severity. High scores are only indicative that further assessment is warranted⁴³. Postpartum psychosis, also known as puerperal psychosis, is a rare and severe form of psychiatric mental illness associated with childbirth that requires a formal psychiatric evaluation with no available screening or detection tools. Postpartum psychosis is not a severe form of PPD but a distinct separate psychiatric disturbance that occurs in approximately 1 to 2 per 1000 women after childbirth⁴⁴. Women who have a personal and family history of bipolar disorder and/or manic depression are at risk of developing puerperal psychosis. Symptoms of puerperal psychosis can evolve rapidly and include elated mood, disorganised behaviour, preoccupations, delusions, hallucinations and grandiosity^{44,45}. In acute cases, there are high suicidal and infanticide risks where hospitalisation may be required⁴⁵. Given the threat posed to women and their infants, women diagnosed with postpartum psychosis should always be treated as a psychiatric emergency. Hence, midwives' erroneous perception of EPDS' functions as identified in this present survey, indicates a need for further education on the use of EPDS in screening for probable antenatal depression and PPD.

Previous research indicated that Australian midwives were unsure how to effectively manage women with PPD and were less likely to suggest appropriate treatment strategies³¹. It was previously found that while some midwives stated they would assist women to discuss their feelings, provide explanations and reassurance, over a third would refer women to doctors or other health professionals. In contrast, the current survey revealed that midwives are willing to have a more active role and recommend appropriate treatment strategies to women with mild PPD, such as the provision of health education, supportive counselling and fostering peer support. Nonetheless, close to one-third of midwives reported offering understanding and empathy for women suffering moderate to severe PPD rather than recommending more active and therapeutic approaches to care.

In comparison to the 1989 survey results of Australian midwives³¹, our study revealed a marked improvement in midwives' overall knowledge of PPD. This could be a reflection of the increasing standards of education for midwives over the last twenty years and improved level of community awareness of antenatal and postpartum emotional distress through campaigns such as *"beyondblue's* National Depression Initiative¹⁸. Notably,

the focus of recent national awareness campaigns and research programs has been primarily on PPD and it is therefore not surprising that recent surveys report higher levels of knowledge of PPD than antenatal depression. The term PPD is now in common usage due to the significant media attention and extensive research. However, this high level of PPD awareness, may potentially lead to inappropriately applying the label of PPD to women who may only be displaying transitory symptoms associated with adjustment to motherhood⁴³. Assessment of symptoms over time within the context of an ongoing therapeutic relationship with a known midwife is required.

The clinical utility of the EPDS to screen for probable depression may result in excessive screening, neglect of other aspects of emotional wellbeing, and lead to the unnecessary labelling of women as distressed even though their negative emotional state may be transient or short-lived⁴³. In view of the widespread use of EPDS in practice and findings of the present study which suggest midwives do not possess a good understanding of the functions and limitations of the scale, further education on the use of EPDS in clinical practice is warranted. In addition, alternatives to psychosocial screening such as a promising program⁴⁶ which focuses on the knowledge and communication skills of caregivers to identify and support women experiencing a range of psychosocial issues should be considered. Such skills would assist in the assessment of childbearing women who are at risk of depression and other associated comorbidities such as anxiety.

Although midwives with higher educational qualifications demonstrated better knowledge of antenatal depression and PPD, many reported that their educational preparation was not adequate for the effective care of depressed childbearing women. Specifically, midwifery education programs were found to be inadequate with little or no emphasis on the assessment and management of women with antenatal depression and/or PPD. Such knowledge was predominantly acquired through on-the-job experience, books and journal articles. Almost all midwives reported that further training might be useful to improve their skills to assess and care for women with antenatal depression and/or PPD . These results confirm earlier research which found that midwives wanted more education and training in regards to emotional care³².

LIMITATIONS

Our results may be limited due to the adequacy of data instruments and potential sampling bias. In self-administered surveys, there are risks relating to whether findings accurately reflect midwives' knowledge. Nonetheless, previous studies have reported surveys as a useful method to measure knowledge⁴⁷. Secondly, it is plausible that midwives who completed the survey may have had a particular interest in childbearing-related emotional disorders. Consequently, these respondents may have had better knowledge of emotional disorders that occur during pregnancy and postpartum. Non-responders may have differed in their level of knowledge from midwives who responded, thereby contributing to sampling bias where findings of this study may not accurately represent the general population of midwives. These limitations were compensated by an adequate response rate from a large sample and comparison of findings with previous research. The sample was representative of the Australian midwifery workforce in terms of age, gender, average weekly work hours and practice areas⁴¹. As this is a study of Australian midwives, the degree to which the findings can be generalised to midwives in other countries is limited. Nevertheless, the study results serve as a point of comparison, and offer some insights into the knowledge and training needs of midwives that may be applicable to the needs of midwives in other countries. To date, there appears to be no published literature that assesses the knowledge needs of certified nurse-midwives in the United States who, like Australian midwives, are also expected to play a "critical role in the integration of prevention, screening, treatment and/or referral for depression into the care they provide for women"⁴⁸.

IMPLICATIONS & CONCLUSION

The application of mental health knowledge within routine maternity care is required for the provision of services to women experiencing emotional distress or at risk of illness during pregnancy or the postpartum⁴⁹. Under the Australian National Perinatal Mental Action Plan and National Perinatal Depression Initiative, routine psychosocial assessment; appropriate training for health professionals; and information and pathways to care for women with perinatal mental disorders are expected to be integrated into existing practice. The national emphasis to provide emotional care for childbearing women, requires midwives to possess the appropriate knowledge, skills and attitudes necessary to practise the full role and scope of midwifery⁵⁰.

This study found that some current practicing midwives in Australia are not adequately educated or trained to offer emotional care for women. There were gaps in midwives' knowledge of antenatal depression particularly in areas such as risk factors, prevalence, adverse health outcomes, as well as poor knowledge of the incidence, onset, and treatment approaches for PPD. It is encouraging that the study revealed that the majority of midwives do want antenatal depression and PPD education preparation to enhance their emotional care of women. Outcomes of this study indicate the need for additional continuing professional educational resources and/or programs on antenatal and postpartum mental disorders for current practicing Australian midwives.

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Table 1. Demographic Characteristics of Respondents (N = 815)^a

Demographic characteristics	Study Sample	National Data ^b
Age, y mean (SD)	44.38 (8.82)	40.7
Number of years practicing as a midwife, y mean (SD)	14.89 (9.48)	-
Work hours, per wk mean (SD)	30.42 (11.98)	27.0
Gender		
Female	804 (98.6)	99.0
Male	11 (1.4)	1.0
Current licensed as:		
Midwife	378 (46.4)	-
Registered Nurse & Midwife	437 (53.6)	-
Highest level of education		
Certificate	143 (17.6)	-
Diploma	54 (6.6)	-
Undergraduate (Bachelor) Degree	178 (21.9)	-
Graduate Certificate /Diploma	291 (35.7)	-
Masters	140 (17.2)	-
PhD	9 (1.1)	-
Current midwifery practice areas:		
All areas	420 (51.5)	-
Antenatal	170 (20.8)	-
Postnatal	192 (23.5)	-
Birthing	173 (21.2)	-
Neonatal	44 (5.4)	-
Currently not in clinical practice but working primarily as a /an:		
Educator	37 (4.6)	-
Researcher	12 (1.5)	-
Manager	22 (2.7)	-
Total	72 (8.8)	8.0
Working in the:		
Public sector	618 (75.8)	75.3
Private sector	197 (24.2)	24.7
Hospitals	684 (83.9)	97.2

^a Data are reported as n(%) unless otherwise noted.

^b Data are reported as % and obtained from Australian Health Workforce Advisory Committee³⁶

Table 2. Antenatal Depression Questions with < 75% Correct Response Rate (N = 815)

Antenatal depression questions	Incorrect response n(%)
Q2. Proportion of pregnant women who met the diagnostic criteria for depression (<i>incorrect answers were both underestimations and overestimations</i>)	404 (49.6)
Q3. Perinatal outcomes associated with antenatal depression	233 (28.6)
Q5. Proportion of antenatally depressed women who attempt suicide in the postpartum period (<i>incorrect answers were underestimations</i>)	801 (98.3)
Q6. Risk factors of antenatal depression	575 (70.6)
Q7. Treatment methods for antenatal depression	289 (35.5)

Table 3. Postpartum Depression Questions with < 75% Correct Response Rate (N = 815)

Postpartum depression questions	Incorrect response n(%)
Q10. Proportion of mothers who experienced maternity blues (incorrect answers were underestimations)	210 (25.8)
Q13. Onset period for postpartum depression	579 (71.0)
Q14. Proportion of mothers suffering postpartum depression (incorrect answers were both underestimations and overestimations)	362 (44.4)
Q16. Treatment methods for moderate to severe postpartum depression	261 (32.0)
Q17. Knowledge of Edinburgh Postnatal Depression Scale	357 (43.8)
Q18. Knowledge of antidepressant medications	355 (46.6)

Appendix A. Test of Antenatal and Postpartum Depression Knowledge

1. Which statement is true?
 - a. Psychological morbidity, specifically depression and anxiety, are commonly seen in both the antenatal and postpartum periods.
 - b. Psychological morbidity, such as depression and anxiety, is not associated with personality disorder.
 - c. Psychological morbidity, such as depression and anxiety, is not associated with drug and alcohol abuse.
 - d. It is not essential to screen for, and differentiate between, depression and anxiety comorbidity in pregnant women.

2. The proportion of pregnant women who meet the diagnostic criteria for depression is approximately:
 - a. 8 - 35%
 - b. 5 - 10%
 - c. 10 - 20%
 - d. 30 - 50%

3. Which of the following is associated with depression during pregnancy?
 - a. Gestational hypertension
 - b. Preeclampsia
 - c. Spontaneous abortion
 - d. All of the above

4. What is the most common reason for depressed pregnant women not receiving adequate help?
 - a. Lack of social support
 - b. Lack of support from healthcare providers
 - c. Lack of recognition of depression symptoms by healthcare providers
 - d. Poor access to treatment for depression

5. The percentage of women suffering depression during pregnancy who subsequently attempt suicide is approximately:
 - a. 1%
 - b. 10%
 - c. 15%
 - d. 25%

6. Which of the following is not regarded as a risk factor for antenatal depression?
 - a. Low socio-economic background
 - b. Substance and alcohol abuse
 - c. History of abuse
 - d. Miscarriage in previous pregnancy

7. Which of the following are common treatments for antenatal depression:
 - a. Medication and counselling

- b. Self-help groups and counselling
 - c. Admission to a psychiatric unit and counselling
 - d. Naturotherapy and relaxation
8. Which of the following is the main symptom of antenatal depression?
- a. Irritability
 - b. Attention seeking from families and friends
 - c. Feelings of isolation and loneliness
 - d. Reliving past experiences and events
9. Which of the following statements is true?
- a. Antenatal depression always continues into the postpartum period
 - b. Women with antenatal depression have a higher chance of developing postpartum depression
 - c. Women who are depressed antenatally do not require specific treatment
 - d. Antenatal depression will resolve with the birth of the baby
10. The proportion of mothers who experience the “baby blues” is approximately:
- a. 1 – 2%
 - b. 10 – 20%
 - c. 20 – 30%
 - d. 30 – 80%
11. What is the recommended management for the “baby blues”?
- a. Understanding, empathy and support
 - b. Baby care assistance
 - c. Psychotherapy
 - d. Referral to a postpartum disorder support group
12. Which of the following is required for a diagnosis of postpartum depression?
- a. Grandiose future plans
 - b. Frequent mood swings
 - c. Preoccupation with cleanliness
 - d. Persistent low mood for more than 2 months
13. Postpartum depression most commonly occurs after the birth within:
- a. 2 – 5 days
 - b. 10 – 14 days
 - c. After 1 month
 - d. After 3 months
14. The proportion of mothers who experience postpartum depression is approximately:
- a. 5%
 - b. 15%
 - c. 30%

- d. 50%
15. What is the recommended treatment for mild postpartum depression?
- Understanding and empathy
 - Education about postpartum depression, supportive counselling and peer support groups
 - Psychotherapy and anti-depressant medication
 - Hospitalisation and medication
16. What is the recommended treatment for moderate – severe postpartum depression?
- Understanding and empathy
 - Education about postpartum depression, supportive counselling and peer support groups
 - Psychotherapy and anti-depressant medication
 - Hospitalisation and medication
17. Which of the following statements is false about the Edinburgh Postnatal Depression Scale?
- It distinguishes well between moderate and severe depression symptoms
 - It measures depressive symptoms to give a probable diagnosis of depression
 - It fully assesses symptoms of psychotic depression
 - It can detect antenatal depressive symptoms
18. Which of the following statements is true about antidepressant medication?
- Mothers may be able to breastfeed while taking antidepressants
 - Presence of antidepressants in breast milk has been well-studied.
 - Antidepressants are habit-forming
 - Antidepressant medications are effective immediately
19. Which of the following is a symptom of postpartum depression?
- Annoyance with your partner or other children
 - Feeling a sense of frustration with present life.
 - Anxious about the baby
 - All of the above
20. Which of the following statement is correct?
- Without treatment, 80% of women recover spontaneously from postpartum depression.
 - Women experiencing postpartum depression are more likely to develop postpartum depression in a subsequent pregnancy.
 - Women experiencing postpartum depression do not develop suicide ideation or attempt suicide.

- d. Approximately 5% of all pregnant women develop puerperal psychosis following childbirth.

Answers: 1, a; 2, c; 3, d; 4, c; 5, c; 6, d; 7, a; 8, c; 9, b; 10, d; 11, a; 12, d; 13, c; 14, b; 15, b; 16, c; 17, c; 18, a; 19, d; 20, b.