

Original Article

Antenatal psychosocial assessment and depression screening in a private hospital

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Background: It has been recommended that psychosocial assessment (including depression screening) be integrated into routine antenatal care across Australia, but implementation in the private sector has lagged.

Aims: This study aimed to report preliminary outcomes associated with an antenatal psychosocial assessment and depression screening program implemented at an Australian private obstetric hospital setting and to report characteristics and correlates of elevated depression symptoms in this sample.

Materials and Methods: A total of 993 pregnant women (mean \pm SD gestational age 27.9 \pm 6.7 weeks) participated in a structured psychosocial assessment interview and completed the Edinburgh Postnatal Depression Scale (EPDS).

Results: Six per cent of participants scored ≥ 13 on the EPDS. Psychosocial correlates of antenatal depressive symptoms included low income, history of pregnancy termination, poor practical support, lack of confidence and history of depression. Almost 1 in 10 of the total sample was referred for further assessment and clinical support.

Conclusions: The prevalence of clinically significant antenatal depressive symptoms in this sample highlights the importance of antenatal depression screening for all women, including those who choose to access private obstetric care.

Key words: antenatal, depression, private hospitals, psychosocial, screening.

Introduction

Given the demonstrated prevalence and negative impacts of perinatal depression,^{1,2} there has been international recognition of the importance of early identification based on known risk factors.^{3–8} While there has been some contention as to the most appropriate method,⁹ the benefits of psychosocial assessment, including depression screening when conducted in conjunction with well-developed treatment pathways and clinical training/support for clinicians, are generally agreed upon.^{9–11}

In Australia, a number of key initiatives and recommendations relating to perinatal psychosocial assessment and depression screening have been made. In

2001–2005, beyondblue funded the ‘National Postnatal Depression program’, an initiative that saw perinatal assessment and screening programs implemented and evaluated across the country.¹² In 2011, the National Health and Medical Research Council (NH&MRC) endorsed clinical practice guidelines for identifying and treating depression and related disorders in the perinatal period,¹³ and in 2012, the Royal Australian and New Zealand College of Obstetricians and Gynaecologists¹⁴ (RANZCOG) issued a position statement highlighting assessment and intervention for perinatal mood disorders as best practice. At present, psychosocial assessment and depression screening form an integral part of routine antenatal care in most public hospital maternity units across the country. Local guidelines have been developed in various states and territories.^{15,16} At many sites, psychosocial assessment questions are embedded in the standardised booking-in interview (recorded in computerised data collection systems) and the Edinburgh Postnatal Depression Scale (EPDS) is completed routinely during the booking-in appointment and postnatal assessments. The aim at these sites is to establish systems that are integrated across the antenatal and postnatal periods, between hospital and community service

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providers, between health care disciplines and between primary and secondary/tertiary healthcare systems.⁹ Training and supervision for clinicians as well as the establishment of clear clinical decision-making guidelines and referral pathways are also key.¹⁷

Despite recommendations that such assessment be integrated into routine antenatal care across Australia and widespread implementation in the public sector, implementation in the private sector has lagged.^{6,18} Individual obstetricians may be assessing psychosocial risks and depression symptoms as part of their individual clinical practice; but there have been no large-scale or coordinated antenatal programs. With around a third of Australian women choosing to access private obstetric care,¹⁹ a large proportion of Australian women are missing the opportunity to have their mental health status assessed and relevant assistance offered. In addition, the recommended target of 'universal' screening is clearly not being met.

We report on an antenatal psychosocial assessment and depression screening program known as the 'Emotional Wellbeing Program' (EWP), developed and implemented at Sydney's North Shore Private Hospital (NSPH) between 2009 and 2011. Given the lack of published data around such initiatives in Australian private hospital settings, this study had two major aims. Firstly, it sought to report demographic, psychosocial and obstetric characteristics and correlates of elevated depression symptoms in a sample of women giving birth in an Australian private obstetric hospital setting. Secondly, to report preliminary outcomes (numbers of referrals) associated with the EWP.

Materials and Methods

Participants, procedure and measures

All women booked for pregnancy care at NSPH between January 2013 and February 2015 were invited to attend an antenatal psychosocial assessment interview with a midwife. Invitations were issued via a number of avenues, including direct recommendations/referrals, from obstetricians and midwives running antenatal education classes at the hospital, written information provided in hospital information packs and a phone call and/or email from an administrative assistant. In total, 1054 women attended an antenatal psychosocial interview during the given time frame. Of these, 993 (94%) consented to be in the study. During the same 25-month period, there were 5195 deliveries at RNSH, indicating that the current sample is likely to represent approximately 20% of the total number of women accessing obstetric care at the hospital. Demographic characteristics of the sample are shown in Table 1. The mean \pm SD maternal age was 33.9 \pm 4.1 years (range 22–49 years), and the mean \pm SD gestational age was 27.9 \pm 6.7 weeks. Most women (71%) were primiparous and almost all (99%) were married or in a de facto relationship. Ninety per cent

had undergraduate or postgraduate tertiary qualifications and 63% reported an annual family income $>$ \$150 000. More than 80% were currently employed in either full- or part-time work outside the home. Forty-one per cent of the sample was born outside Australia, and 7.1% were recent immigrants, having arrived in Australia in the 3 years prior to the interview.

Appointments were facilitated by midwives employed at the hospital and trained in psychosocial assessment. Interviews were scheduled for 45 min and included completion of a demographics form and the EPDS,²⁰ followed by a semi-structured interview designed to assess the major sociodemographic, psychosocial and obstetric risk factors for compromised perinatal mental health (Tables 1 and 2).^a At the end of the interview, if the midwife identified current mental health concerns (ascertained during the semi-structured interview or using the EPDS) or significant psychosocial risks, the treating obstetrician was notified and referrals to support and intervention services were made.

Analysis

All analyses were conducted using SPSS version 19. Descriptive statistics were used to examine demographic, psychosocial and obstetric characteristics of the sample, followed by binary logistic regression to examine associations between the presence of the various risk factors and probable major depression (total EPDS score $>$ 12). Variables that were found to be associated with depression in bivariate analyses were subsequently included in a hierarchical multiple linear regression to identify predictors of antenatal depression while controlling for other variables (criterion variable: total EPDS score $>$ 12). For all analyses, risk factors were coded as 1 = 'yes, risk present', 0 = 'no, risk not present' ('unsure' responses were coded as 0).

Ethics

The study was approved by the Ethics Committee at NSPH (NSPHEC 2011/010). All participants gave written, informed consent to be part of the study.

Results

Frequencies of risk factors and correlates of antenatal depression

The main risk factors assessed and the frequencies of women identified with these risks are shown in Tables 1 and 2. The mean \pm SD EPDS score was 6.4 \pm 4.1. Six per cent of women scored in the range indicative of major depression (\geq 13) and a further 14% scored in the range considered indicative of minor depression (10–12).

^aCopy of the interview available from the authors by request.

Table 1 Prevalence of demographic and obstetric risk factors and binary logistic regression analysis, criterion variable: EPDS total score >12

Risk domain	Variable	% Yes/M ± SD	OR	95% CI	P
Demographics	Age (years)	33.9 ± 4.12	0.99	0.93–1.06	0.765
	Gestation (weeks)	27.9 ± 6.7	1.00	0.97–1.04	0.846
	Multiparous	28.2	1.76*	1.03–3.01	0.040
	Unpartnered	0.08	0.00	–	0.999
	Born outside Australia	41.3	1.05	0.62–1.79	0.849
	Immigrant status				
	Immigrated in last 12 months	1.2	1.44	0.18–11.47	0.731
	Immigrated in last 1–3 years	5.9	1.22	0.42–3.56	0.720
	Immigrated >3 years ago	33.5	1.04	0.59–1.85	0.881
	Annual family income				
	<\$50 000	1.7	4.24*	1.15–15.64	0.030
	\$50 000–100 000	9.6	1.73	0.77–3.88	0.186
	\$100 000–\$150 000	25.6	1.19	0.63–2.25	0.588
	More than \$150 000	63.1	–	–	–
	Educational level				
	High school	9.5	0.89	0.17–4.67	0.888
Tertiary	45.5	0.44	0.10–2.04	0.297	
Postgraduate	45.0	0.58	0.13–2.65	0.485	
Unemployed	19.3	0.65*	0.48–0.88	0.006	
Previous miscarriages & terminations	At least one miscarriage	27.5	1.0	0.55–1.82	0.994
	At least one termination	9.2	2.17*	1.06–4.47	0.034
Previous delivery & postnatal experience†	Caesarean (planned or unplanned)	41.2	0.90	0.38–2.17	0.820
	Caesarean (unplanned)	24.0	0.45	0.13–1.56	0.206
	Perineal damage	81.0	0.53	0.23–1.20	0.126
	Delivery complications	52.4	0.44*	0.20–0.96	0.039
	Early postnatal complications (0–6 weeks postpartum)	64.9	0.39*	0.19–0.83	0.014
	Later postnatal complications (>6 weeks postpartum)	65.5	0.51	0.24–1.07	0.074
Current pregnancy	Unplanned pregnancy	7.0	1.60	0.67–3.86	0.300
	Difficulty conceiving	30.7	0.90	0.50–1.63	0.727
	Used IVF to conceive	17.9	0.86	0.41–1.78	0.675
	Pregnancy complications	56.5	0.43*	0.25–0.74	0.003

†*n* = 279, **P* < 0.05.

Three per cent of women responded positively to the question about self-harm (EPDS question 10). As shown in Table 1, bivariate analyses showed that of the demographic risk factor variables examined, probable antenatal depression (total EPDS > 12) was significantly and positively associated with being multiparous (OR 1.76, 95% CI = 1.03–3.01, *P* < 0.05), having an annual family income less than \$50 000 (OR 4.24, 95% CI = 1.15–15.64, *P* < 0.05) and not being in paid employment (OR 0.65, 95% CI = 0.48–0.88, *P* < 0.05). Of the obstetric variables, probable antenatal depression was positively associated with the presence of pregnancy complications in the current pregnancy (OR 0.43, 95% CI = 0.25–0.74, *P* < 0.05), having had at least one termination of pregnancy (OR 2.17, 95% CI = 1.06–4.47, *P* < 0.05) and having experienced delivery (OR 0.44, 95% CI = 0.20–0.96, *P* < 0.05) or early postnatal complications with the most recent previous birth (OR 0.39, 95% CI = 0.19–0.83, *P* < 0.05).

Of the psychosocial risk factors assessed (Table 2), antenatal depression was associated with lack of support (practical support: OR 6.1, 95% CI = 1.57–23.55, *P* < 0.05; emotional support: OR 11.04, 95% CI = 3.03–40.28, *P* < 0.05), recent major life stressors (OR 2.00, 95% CI = 1.1–3.66, *P* < 0.05), personality vulnerability (lack of confidence: OR 4.8, 95% CI = 2.38–9.67, *P* < 0.05; worried about untidiness: OR 1.89, 95% CI = 1.11–3.22, *P* < 0.05), history of depression or anxiety (OR 5.75, 95% CI = 3.01–10.99, *P* < 0.05) and negative childhood experiences (unhappy childhood: OR 2.53, 95% CI = 1.02–6.22, *P* < 0.05; difficult childhood experiences: OR 1.99, 95% CI = 1.17–3.38, *P* < 0.05). When these variables were included in a multiple logistic regression (Table 3), the significant predictors of antenatal depression, in order of OR magnitude, were low family income (OR 34.39, 95% CI = 33.00–394.35, *P* < 0.05), poor practical support (OR 11.54, 95% CI = 1.02–130.75, *P* < 0.05), lack of confidence (OR 8.78, 95%

Table 2 Prevalence of psychosocial risk factors and binary logistic regression analysis, criterion variable: EPDS total score >12

Risk domain	Item	% Yes	OR	95% CI	<i>P</i>
Support	Lack of practical support after birth	4.8	6.10*	1.57–23.55	0.009
	No-one to talk to about feelings and worries	1.1	11.04*	3.03–40.28	0.000
Recent life stress	Major stressors, changes or losses in the last 12 months	60.3	2.00*	1.1–3.66	0.023
Personality	Low self-confidence	6.2	4.80*	2.38–9.67	0.000
	Worried about mess	30.5	1.89*	1.11–3.22	0.020
Mental health history	Anxiety or depression >2 weeks	42.8	5.75*	3.01–10.99	0.000
Family psychiatric history	Family history of mental health problems	38.1	1.63	0.96–2.76	0.070
Negative childhood experiences	Unhappy childhood	4.7	2.53*	1.02–6.22	0.044
	Difficult childhood experiences (eg parental loss, abuse)	29.1	1.99*	1.17–3.38	0.011
Domestic violence†	Physical violence or fear of partner ex-partner or anyone else in the family	2.0	0.81	0.11–6.14	0.836
Substance use	Smoking	0.1	0.00	–	0.999
	Illicit drugs	0.0	–	–	–
	Alcohol	9.7	0.46	0.14–1.51	0.201

†All risk variables coded as 1 = 'yes', 0 = 'No', **P* < 0.05.

Table 3 Hierarchical multiple regression: criterion variable: EPDS total score >12

Risk category	Item	OR	95% CI	<i>P</i>
Demographics	Multiparous	1.85	0.30–11.39	0.507
	Low family income	34.39*	3.00–394.35	0.004
	Unemployed	1.37	0.48–3.93	0.554
Obstetric variables	Pregnancy complications	0.37	0.13–1.04	0.060
	History of pregnancy termination	4.74*	1.31–17.18	0.018
	Previous delivery complications	0.70	0.17–2.99	0.640
	Previous early postnatal complications	0.62	0.20–2.00	0.428
Psychosocial risk variables	Poor practical support	11.54*	1.02–130.75	0.048
	Poor emotional support	5.83	0.59–57.83	0.132
	Major stressors	0.76	0.28–2.10	0.597
	Lack of confidence	8.78*	2.37–32.55	0.001
	Worried about mess	2.50	0.93–6.73	0.070
	History of depression or anxiety	3.66*	1.17–11.44	0.026
	Unhappy childhood	1.62	0.23–11.65	0.630
Difficult childhood experiences	1.27	0.44–3.71	0.659	

**P* < 0.05.

CI = 2.37–32.55, *P* < 0.05), history of pregnancy termination (OR 4.74, 95% CI = 1.31–17.18, *P* < 0.05) and history of anxiety or depression (OR 3.66, 95% CI = 1.17–11.44, *P* < 0.05).

Outcomes

Contact with the treating obstetrician and/or referrals to clinical support services were made on the basis of EPDS score (EPDS > 13) and/or the presence of significant psychosocial risk. In 94 cases (9.5%), contact was made with the woman's obstetrician after the interview, and in a further 90 cases (9%), other referrals were made. This included 37 referrals to the social worker, 50 referrals to other services and 3 referrals to the social worker and another service.

Discussion

This study provides data about a large-scale depression screening and psychosocial risk assessment program implemented in an Australian private hospital setting. Importantly, our results show that Australian women who choose to receive obstetric care in the private system are not immune from depression and other psychosocial difficulties during pregnancy. Despite comprising mostly well-supported (ie partnered, with access to practical and emotional support), socio-economically advantaged and highly educated women, depressive symptoms in this cohort were common, with 6% reporting symptoms indicative of probable major depression (EPDS total score ≥13). This figure is slightly lower than the 9% prevalence rate reported in a large Australian study (*n* = 52 000)

which included women from Aboriginal and Torres Strait Islander and non-English-speaking backgrounds, rural and regional areas, and the public and private health sectors.¹² However, it is comparable to international estimates (1.0–5.6%)²¹ and higher than the figure reported in a study of women delivering in private hospitals in Western Australia (2–3%).²² When considering these reported rates, it is also important to note that EPDS scores between 9 and 12 in pregnancy are often indicative of clinically significant distress,²³ suggesting that the rates reported both here and in previous studies are likely to be conservative estimates.

Results of this study are also informative given the lack of published data about the psychosocial risk profiles and correlates of antenatal depressive symptoms among women in the private sector. While the great majority of women in this sample felt that they had practical and emotional support and that they were generally self-confident, other psychosocial risk factors were common. In particular, 60.3% reported having experienced a significant major stressor, change or loss in the previous 12 months, a rate considerably higher than the 24.4% reported in an Australian public hospital cohort.²⁴ The frequency of women reporting a history of depression or anxiety lasting more than 2 weeks was also considerably higher than figures reported in Australian public hospital samples (12.9%).²⁴ Psychosocial correlates of antenatal depressive symptoms in this study (low income, history of termination, poor practical support, lack of confidence and history of depression) align with previous literature.

Our study has a number of limitations. The sample was self-selected (ie women responded to an invitation to participate) rather than part of routine universal practice at the hospital, and so prevalence rates for depression and associated risk factors should be regarded as estimates. With only 1 in 5 women giving birth at the hospital attending an EWP interview, it is possible that women who attended the EWP interview were not representative of the population of women giving birth at the hospital. However, the size of the sample provides us with some assurance about the representativeness of the findings. The lack of a longitudinal design means that results are correlational rather than indicative of causative relations. The use of the EPDS as the measure of likely depression diagnosis is also less than ideal; future studies should use diagnostic interviews to confirm results of this study. Postnatal follow-up of women to assess consumer satisfaction, postnatal psychological functioning and to evaluate longer-term outcomes, ideally using a randomised controlled design, would also be of great value.

These limitations notwithstanding, results of this study have important clinical and policy implications. Given the known negative effects of perinatal depression on women, children and families,²⁵ the prevalence of clinically significant antenatal depressive symptoms in this sample highlights the importance of antenatal depression screening for all women, including those who choose to

access private obstetric care. A national policy mandating screening for all pregnant women requires appropriate funding for infrastructure and support. Our study demonstrates that higher socio-economic status does not protect against perinatal mental health problems. Different private hospitals could implement program to suit their own particular setting, but the success of this particular program is evident in the fact that almost 1 in 10 women who attended an interview were referred for further assessment or support because they were identified to be suffering, or at risk of developing, mental health problems. The many financial and logistic challenges associated with implementing such a program in the private system are acknowledged. In the absence of universal psychosocial assessment and depression screening programs in private hospitals, obstetricians may need to take responsibility for this aspect of care (themselves or through a suitably qualified colleague) and be prepared to refer patients as needed. Importantly, as highlighted in a recent American position statement,¹¹ systems need to be in place to ensure that obstetricians are educated and supported and that there are clear referral pathways to ensure that women can access appropriate resources in a timely fashion.

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