Postnatal depression among Bahraini women: prevalence of symptoms and psychosocial risk factors

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الاكتئاب التالي للولادة بين النساء في البحرين: معدلات انتشار الأعراض وعوامل الخطر النفسية الاجتماعية

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الخلاصة: لا توجد دراسة سابقة تعرف معدل إنتشار الاكتئاب التالي للولادة في البحرين، ، ولم يتم التحرِّي عن عوامل الخطر المعروفة. تطمح هذه الدراسة إلى تقدير معدَّل انتشار أعراض الاكتئاب التالي للولادة، وعوامل الخطر المصاحبة لها في عينة من النساء في البحرين، اللائي ترددن على المراكز الصحية في الأسبوع الثامن من الولادة لفحص و تطعيم أطفالهن. وقد استخدمت النسخة العربية من مقياس أدنبره للاكتئاب التالي للولادة EPDS بحد فاصل و قدره ≤ 12 للاكتئاب. وبلغ معدل انتشار أعراض الاكتئاب التالي للولادة بين 237 من الأمهات 37.1٪. ولم تكتشف ارتباطات يعتدُّ بها بين أعراض الاكتئاب وبين أي من المتغيرات الديموغرافية أو سمات الحمل أو الولادة التي جرى دراستها. لكن عدة عوامل للخطر ارتبطت ارتباطا يعتد به مع الإكتآب التالي للولادة، وبعد عدة تحليلات للتحوف، ظل سوابق الإصابة بأعراض الاكتئاب، والإحساس بنقص الدعم من الزوج هما العاملان المهّمان. وهناك حاجة لمزيد من الدراسات التي تتضمن تقييمات تشخيصية للتأكُّد من هذه النتائج.

ABSTRACT The prevalence of postnatal depression in Bahrain is unknown and screening for known risk factors does not take place. This study estimated the prevalence of postnatal depressive symptoms and the associated risk factors among a random sample of Bahraini women attending primary health care centres with their babies for the 8-week child check-up. The Arabic version of the Edinburgh Postnatal Depression Scale (EPDS) was used with a cut-off score of ≥ 12 for depression. The prevalence of postnatal depressive symptoms among 237 mothers was 37.1%. No significant relationships were identified between depression symptoms and any of demographic variables or pregnancy/birth characteristics studied. However, several psychosocial risk factors were significantly associated with postnatal depression and, after multiple regression analysis, a history of depressive symptoms and perceived lack of support from the husband remained significant factors. Further studies that include diagnostic assessments are needed to confirm these findings.

Dépression postnatale chez des femmes bahreïnies : prévalence des symptômes et des facteurs de risque psychosociaux

RÉSUMÉ La prévalence de la dépression postnatale à Bahreïn n'est pas connue et aucun dépistage des facteurs de risque avérés n'est réalisé. La présente étude a estimé la prévalence des symptômes de dépression postnatale et des facteurs de risque associés dans un échantillon aléatoire de femmes bahreïnies consultant les centres de soins de santé primaires avec leur bébé pour la visite des huit semaines. La version en langue arabe de l'*Edinburgh Postnatal Depression Scale* (Échelle de dépression postnatale d'Édimbourg) a été utilisée avec une valeur seuil supérieure ou égale à 12 pour la dépression. La prévalence des symptômes de la dépression postnatale chez les 237 mères de l'étude était de 37,1 %. Aucune relation significative n'a été identifiée entre les symptômes de dépression et les variables démographiques ou les caractéristiques des grossesses ou des accouchements étudiés. Toutefois, plusieurs facteurs de risque psychosociaux étaient significativement associés à la dépression postnatale et, après l'analyse de régression multiple, des antécédents de symptômes dépressifs ainsi que le sentiment de recevoir un soutien insuffisant de la part du conjoint se sont révélé être des facteurs importants. Des études supplémentaires comprenant des évaluations diagnostiques sont requises pour confirmer ces résultats.

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Introduction

Postnatal depression is an important health issue, with not only immediate health effects on the woman and her self-confidence as a mother, but also on her infant's social, emotional, cognitive [1–3] and even physical development [4,5]. Varying rates of postnatal depression and depressive symptoms have been reported within and across countries. The rate of postnatal depression ranges from 10% to 15% in developed countries [6–8], but is higher in developing countries where rates ranging from 16% to 36% have been recorded [9–15].

Several risk factors have been found to be associated with postnatal depression, including a mother's history of major depressive disorder and a past history of postnatal depression [8,10], depression during pregnancy [11] and a family history of depression [16]. Other important factors in some low-income countries are family disruption and a lack of social support [9–14,17], poor economic status and dissatisfaction with having a female child [10,14,17]. Not breastfeeding, stressful life events, baby's health problems and unintended pregnancy were also found to be associated with postnatal depression [9–13,18]. Despite its high prevalence and importance, postnatal depression is commonly under-diagnosed by health professionals [19,20].

The prevalence of postnatal depression in Bahrain is unknown and screening for known risk factors does not take place, even though the primary health care service provides postnatal check-ups 6 weeks after delivery [21]. Despite the availability of the service, only 57% of Bahraini women comply with scheduled appointments [21]. On the other hand, women's compliance with the 8-week child vaccination schedule is high (93.6%) [22]. The aim of this study was to provide data about the prevalence of postnatal depressive symptoms and associated risk factors among Bahraini women at 8 weeks postpartum.

Methods

This cross-sectional descriptive study was carried out on Arabic-speaking Bahraini women who were in the postnatal period, attending the 8-week child screening clinic at primary health care centres.

Sample

Using a confidence interval of 95% (a precision of 5%) and an estimated prevalence of 20% [11,12], the sample size was calculated to be 250.

The study participants were drawn from all 5 governorates of Bahrain through 20 randomly chosen primary health care centres and 2 clinics. A proportional sample was calculated for each governorate, health centre and clinic using the list of birth notifications relevant to each selected health centre that were collected over a period of 1 month from 15 May 2008 to 15 June 2008. The names of participant mothers were chosen by simple random sampling from those lists.

Data collection

Data collection was completed during the months of July and August 2008. Three instruments were used in the collection of data:

A birth notification form is issued for each newborn in Bahrain. A copy of this form is given to the parents and another one is sent to their corresponding health centre. It is mandatory to have the birth notification form in order to obtain a birth certificate for the newborn, and therefore all parents have to visit the health centre for registration purposes, regardless of the place of antenatal care visits and the place of delivery (i.e. public or private hospital). Information collected from the birth notification form included mother's age, number of live children, history of dead children in the family, and baby's sex, type of delivery, single/multiple births and gestational age.

The Arabic version of the Edinburgh Postnatal Depression Scale (EPDS) was used to screen for postnatal depression symptoms. The EPDS is a 10-item self-report scale, specifically designed to screen for postnatal depression in community samples. The scale rates the intensity of depressive symptoms present within the previous 7 days [23]. Each item is scored on a 4-point scale (from 0 to 3 reflecting increased severity of symptoms). The minimum and maximum total scores are 0 and 30, respectively, in which 0 is least depressed and 30 is most depressed. The Arabic version of the EPDS has been demonstrated to be a reliable and valid screening tool [24]. Gubash et al. found that using a cut-off score of 12, the sensitivity and the specificity of the scale were 73% and 93% respectively. However, using a cut-off score of 10, the sensitivity of the scale rose to 91% without much decrease in its specificity (84%) [24]. In this study, a cut-off score of ≥ 12 was used so that comparisons could be made with other regional studies.

A self-administered questionnaire reflecting important demographic, maternal, infant, and psychosocial risk factors for postnatal depression was appended to the EPDS [9–18].

A pilot study of recent mothers was conducted to assess the reliability of the Arabic EPDS and the self-administered questionnaire, and the validity was tested by seeking feedback from field experts, e.g. family physicians, midwives, community health nurses and specialists in obstetrics and gynaecology and psychiatry. Appropriate modifications were made to the questionnaire. The internal consistency of the Arabic version of the EPDS was checked using the data from the pilot study. The calculated Cronbach alpha was 0.82, indicating a high inter-item consistency.

The EPDS and self-administered questionnaires were distributed by the researcher and designated maternal and child health nurses in each selected health centre, and collected at the time of

the mother's attendance. Non-attendee mothers were followed up after 1 week. Face-to-face interviews with mothers who were unable to read and write were carried out by the researcher.

The research proposal was approved by the research and ethics committees of the Arabian Gulf University and the Ministry of Health. Informed consent was obtained from study participants. The instruments were coded to protect confidentiality and data from birth notification forms was extracted by the researcher only. Arrangements were made for appropriate referral of women identified at risk for depression.

Data analysis

Data were coded, entered and analysed using *SPSS*, version 16.0. Descriptive statistics including mean and standard deviation (SD) were used to describe continuous variables, and frequencies were used to describe categorical variables. Chi-squared test of independence was used to test the association between the dependant variable postnatal depressive symptoms and each of the sociodemographic, maternal, infant, social support and psychiatric health conditions. Fisher exact test was used for counts < 5. Odds ratios (OR) were calculated with the 95% confidence intervals (CI) to measure the risk of postnatal depressive symptoms in relation to the studied risk factors. Multiple logistic regression was used to identify the most important risk factors. The model was estimated using the backward conditional logistic regression. Adjusted OR were calculated for the significant predictors. *P*-values < 0.05 were considered statistically significant.

Results

A total of 237 Bahraini mothers took part in the study, representing a response rate of 94.8%. More than one-third (37.1%) of the women had EPDS score ≥ 12.

Demographic factors

In terms of demographic factors, no significant associations were found between EPDS score ≥ 12 and mother's age or age at marriage, educational level and occupation of mother and father, the marital status of the mother or the presence of another wife (Table 1).

Pregnancy and birth factors

Furthermore, no statistically significant relationships were found between postnatal depressive symptoms and: sex of the last born baby, type of delivery (vaginal or caesarean section), product of the delivery (single, twins or more), prematurity, health condition of the baby, birth order (firstborn or not), history of sibling death, history of separation from the newborn baby and breastfeeding or problems with breastfeeding (Table 2).

No statistically significant relationship was apparent between EPDS score and planning of the last pregnancy, timing of the last pregnancy and use of contraception (Table 3).

History of depression and perceived support

Table 4 shows the association between postnatal depressive symptoms and the mother's satisfaction with support at home, previous history of depressive symptoms, depression during pregnancy and a previous history of depression diagnosed by a health professional either in herself or family member. Mothers who were less satisfied with the help provided at home were more likely to have depressive symptoms than those who were satisfied. Further, when mothers did not perceive their husbands as involved in the care of the newborn, there was a significant association with EPDS scores of ≥ 12 ($P = 0.002$). Mothers who reported a previous history of depressive symptoms were 6 times more likely to have EPDS scores of ≥ 12 than those without such history ($P < 0.001$). Mothers who had been previously diagnosed by a health professional as suffering from depression were 7 times more likely to have an EPDS score of ≥ 12 than those without this diagnosis ($P = 0.006$). A family history of depression was also found to be significantly associated with the presence of postnatal depressive symptoms and mothers who reported such a history were almost 3 times more likely to have postnatal depressive symptoms than those without ($P = 0.038$).

In multiple logistic regression analysis a history of depressive symptoms (OR 8.13, 95% CI: 3.77–17.5) ($P < 0.001$) and not perceiving the husband as supportive (OR 2.41, 95% CI: 1.24–4.69) ($P = 0.01$) were the only statistically significant independent predictors of postnatal depression (Table 5).

Discussion

Comparisons with studies of postnatal depression in other Arab countries are difficult because of variability in the tools used (screening, standardized diagnostic tools), the point in time applied, different cut-off points of the same tool and cultural issues [5,8]. Notwithstanding these difficulties, the prevalence of depressive symptoms in this study was higher than in other regional studies, and leads to a concern that the prevalence of postnatal depression may be commensurately higher.

In a study of 95 women in a hospital in Dubai, United Arab Emirates, using the Present State Examination (PSE) assessment, a prevalence of 15.8% for postnatal depression was reported [15]. In Morocco, the prevalence of postnatal depression at 2 weeks post-delivery was 18.7%, using the Mini International Neuropsychiatric Interview (MINI), and 20.1%, using a cut-off score of 12 with the EPDS [13]. Chaaya et al. in Lebanon using an EPDS score of 12/13 at 4–5 months postpartum recorded a prevalence rate of 21% [11], although at 4 months depression may have resolved spontaneously.

Table 1 Association between high score on the Arabic version of the Edinburgh Postnatal Depression Scale (EPDS) and the demographic characteristics of the newborn's mother and father

Variable	Total no.	EPDS ≥ 12		OR (95% CI)	*P*-value
		No.	%		
Mother's age (years)					0.572
17–20	8	4	50.0		
21–30	127	49	38.6		
31–40	92	33	35.9		
41–44	10	2	20.0		
Mother's education					0.264
Illiterate or read and write	11	6	54.5		
Primary or intermediate	24	11	45.8		
Secondary or diploma	114	36	31.6		
University	88	35	39.8		
Mother's occupation					0.311
Housewife	145	49	33.8		
Employed	74	30	40.5		
Student	18	9	50.0		
Age at marriage (years)					0.570
11–20	91	36	39.6		
21–30	138	48	34.8		
31–39	8	4	50.0		
Father's education					0.502
Illiterate or read and write	5	2	40.0		
Primary or intermediate	54	20	37.0		
Secondary or diploma	114	47	41.2		
University	64	19	29.7		
Father's occupation				2.32 (0.51–10.6)	0.429[a]
Working	230	84	36.5		
Not working	7	4	57.1		
Marital profile				0.38 (0.06–2.34)	0.362[a]
One wife	230	84	36.5		
More than one wife	5	3	60.0		

The total of some variables vary due to missing values.
[a]Fisher exact test was used because some cells have expected count < 5.
OR = odds ratio; CI = confidence interval.

As for risk factors, the current study showed that a previous history of depressive symptoms reported by the mother was significantly associated with postnatal depression scores. This finding is in accordance with other studies. Indeed, a history of depression or depressive symptoms and of depression during pregnancy are among the most important and significant predictors of postnatal depression [8,10,15,16,25,26].

Despite the fact that depression during pregnancy is a strong predictor of postnatal depression, the current study did not show any significant relationship between postnatal depression and depressive symptoms reported during pregnancy. This can be attributed first, to the small sample size of this study, and second, to the point in the postnatal period under evaluation, i.e. 8 weeks. O'Hara and Swain found in their meta-analysis that assessment at 1 or 2 weeks postnatal was strongly associated with pregnancy depression, while assessment at 9 weeks was only weakly associated with depression [8]. Of course, it is possible that an in-pregnancy depression had not resolved.

In contrast with other studies [10,11,16,26], the logistic regression analysis in this study did not show a significant relationship between family history of depression and postnatal depressive symptoms, and this agrees with the meta-analysis of O'Hara and Swain [8]. The other risk factor identified in this study, as in others, concerned support for the new mother at home. Lack of support was shown in this study to be strongly correlated with depressive symptoms, and has been linked consistently with postnatal depression [8,26].

Traditionally after the birth of a child in Bahrain, the mother moves to live with her own mother for 40 days before she returns back to her husband's house. During this time, the new mother is relieved from her normal duties, which are taken over by female relatives.

Table 2 Association between high score on the Arabic version of the Edinburgh Postnatal Depression Scale (EPDS) and characteristics of the last born baby

Variable	Total no.	EPDS ≥ 12		OR (95% CI)	*P*-value
		No.	%		
Baby's sex				0.94 (0.55–1.59)	0.808
Male	108	41	38.0		
Female	129	47	36.4		
Type of delivery				1.57 (0.85–2.90)	0.145
Vaginal	182	63	34.6		
Caesarean	55	25	45.5		
Product of delivery				3.50 (0.63–19.5)	0.198[a]
Singleton	231	84	36.4		
Twins or more	6	4	66.7		
Gestational age				1.19 (0.46–2.65)	0.835
Term	214	79	36.9		
Premature	23	9	39.1		
Birth order				0.99 (0.57–1.71)	0.959
First child	83	31	37.4		
Second or greater	154	57	37.0		
Baby was sick					
Yes	7	4	57.1	0.43 (0.09–1.98)	0.429[a]
No	230	84	36.5		
Separated from baby					
Yes	36	18	50.0	0.54 (0.26–1.09)	0.084
No	198	69	34.8		
History of a dead sibling in the family					
Yes	13	5	38.5	1.06 (0.34–3.35)	1.000[a]
No	224	83	37.1		
Breastfed					
Yes	230	85	37.0	1.08 (0.34–8.64)	0.674[a]
No	6	3	50.0		
Problems with breastfeeding					
Yes	83	37	44.6	0.62 (0.36–1.06)	0.081
No	154	51	33.1		

[a]*Fisher exact test.*
OR = odds ratio; CI = confidence interval.

Table 3 Association between high score on the Arabic version of the Edinburgh Postnatal Depression Scale (EPDS) and marital status of the mother and planning of the last pregnancy

Variable	Total no.	EPDS ≥ 12		OR (95% CI)	*P*-value
		No.	%		
Marital status				1.70 (0.11–27.5)	1.000[a]
Married	235	87	37.0		
Divorced	2	1	50.0		
Pregnancy was desired					
Yes	171	60	35.1	1.36 (0.76–2.44)	0.295
No	66	28	42.4		
Timing of last pregnancy was suitable					
Yes	152	54	35.5	1.21 (0.70–2.09)	0.494
No	85	34	40.0		
Got pregnant while using contraception					
Yes	45	15	33.3	1.24 (0.62–2.46)	0.542
No	191	73	38.2		

[a]*Fisher exact test.*
OR = odds ratio; CI = confidence interval.

Table 4 Association between high score on the Arabic version of the Edinburgh Postnatal Depression Scale (EPDS) and support provided at home and history of depression among Bahraini women

Variable	Total no.	EPDS score ≥ 12		OR (95% CI)	*P*-value
		No.	%		
Satisfied with help at home					
Yes	192	66	34.4	2.00 (1.03–3.90)	0.04
No	43	22	51.2		
Help provided by husband					
Yes	130	37	28.5	2.33 (1.36–4.00)	0.002
No	106	51	48.1		
Help provided by mother					
Yes	107	36	33.6	1.33 (0.78–2.27)	0.292
No	129	52	40.3		
History of depressive symptoms					
Yes	64	44	68.8	6.45 (3.44–12.05)	< 0.001
No	173	44	25.4		
Previous diagnosis of depression					
Yes	10	8	80.0	7.35 (1.52–35.7)	0.006[a]
No	227	80	35.2		
Diagnosis of depression during pregnancy					
Yes	1	1	100.0	2.71 (2.30–3.21)	0.371[a]
No	236	87	36.9		
Family history of depression					
Yes	18	11	61.1	2.77 (1.03–7.46)	0.038
No	188	68	36.2		

[a]*Fisher exact test.*
OR = odds ratio; CI = confidence interval.

This extended family system is a potent source of support in the Bahraini community and it is a duty of its members to support each other as far as they are able. This traditional custom is becoming less common these days, however. A study in the UAE found that more than half of the new mothers returned to their homes and only about one-third went to their mother's home [12]. Bahrain may be in a transitional stage, but this issue was not explored in this study.

In the current research, the support offered by participants' mothers and husbands, was examined. No significant association with EPDS score ≥ 12 was found when the participant's mother was not identified as a provider of support. On the other hand, when the husband was not identified as a support, this was found on logistic regression to be a risk factor. Whether this perception was a reflection of reality or a manifestation of depressive symptoms could not be determined in this study. Two further studies have examined the importance of social support, and in particular partner support, as risk factors for postnatal depression [27,28] and confirm this study's finding.

In conclusion, this study showed a high rate of depressive symptoms among Bahraini mothers at 8 weeks postpartum, with a previous history of depressive symptoms and the husband's perceived lack of social support emerging as associated risk factors. As the prevalence of symptoms was high in comparison with other studies conducted in the region, this study's findings need to be corroborated by a similar study that is supplemented by the inclusion of an appropriate diagnostic tool. If such research were to confirm a higher level of depression than might be expected, then the implications for the health care system are important. Considerable effort and resources would be needed to mount both prevention and treatment programmes.

Table 5 Multiple logistic regression analysis of the risk factors for a high score on the Edinburgh Postnatal Depression Scale (≥ 12)

Risk factor	OR (95% CI)	*P*-value
Husband not perceived as supportive	2.41 (1.24–4.69)	0.01
History of depressive symptoms	8.13 (3.77–17.5)	< 0.001

OR = odds ratio; CI = confidence interval.

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