

## The Effect of Postpartum Depression on Womens' Consultations with Physicians

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**Key words:** postpartum depression, primary care, Edinburgh Postnatal Depression Scale questionnaire

### Abstract

**Background:** Postpartum depression is a well-known phenomenon that occurs in about 10% of births and affects the quality of life of the mother as well as the family. As in other cases of depression, under-diagnosis of PPD may keep patients from getting proper care and increase their physical and emotional distress.

**Objectives:** To identify patients with PPD and to describe their consultation patterns with primary care physicians for themselves and their babies.

**Methods:** Using a telephone survey and the Edinburgh Postnatal Depression Scale questionnaire we identified PPD in a sample of women who gave birth in HaEmek Medical Center. We also assessed the extent to which the women consulted with family physicians, gynecologists and/or pediatricians.

**Results:** The survey included 574 women, of whom 9.9% were diagnosed with PPD. There was a higher rate of PPD among Arab compared to Jewish women, among women with a prior history of depression, among women whose pregnancy was unplanned, among those who described the course of pregnancy as "difficult," and among women who described their general health as "not good." Women with PPD consulted more with family physicians and pediatricians. The reasons for the consultations are physical and emotional. There were cases of somatization manifested directly by the mother or indirectly through the baby.

**Conclusions:** Women with PPD have higher consultation rates than those without. By asking a few simple questions it is possible to identify a significant proportion of women with PPD.

*IMAJ 2006;8:406-410*

Postpartum depressive disorder has various degrees of severity, ranging from psychosis, through depression, to feeling "blue" [1,2]. The symptoms of PPD are not different from those of major depression, i.e., a sad mood, lack of pleasure, low energy levels, and guilt feelings [2]. The diagnosis is not unique. The DSM describes it as depression, characterized as postnatal. Similar to major depression, the prevalence of PPD is 10% [2]. It can recur

without relation to childbirth [3]. Among the factors that affect PPD are marital problems, previous emotional illness, unplanned pregnancy, and being unemployed or spouse being unemployed [1,2]. PPD has a negative effect on the quality of life and the health of the mother, on her attitude towards the baby, and on its care [4]. PPD can have a long-term effect on the baby's development until late childhood [5]. As in major depression, treating PPD improves the function of the mother and has a beneficial effect on the baby and the family [6].

Depression is often under-diagnosed. Depressed individuals often do not turn for help, or they consult with people who are not professional healthcare providers [7]. We conducted a study among women who gave birth in a hospital in northern Israel. The aim of the study was to compare the frequency of and reasons for consultations with physicians between women with and without PPD. Our primary assumption was that due to the similarity of PPD with major depression, it too would be characterized by the masking of signs of depression by physical complaints. Thus, we anticipated that women with PPD would consult with physicians more than those without PPD.

### Patients and Methods

This was a prospective study that assessed the incidence of PPD in a sample of women aged 18 years and above who gave birth at HaEmek Medical Center in Afula, Israel between February and May 1999. This hospital provides inpatient and ambulatory care to 250,000 residents in northern Israel. The patient population comprises Jews and Arabs who live in urban and rural communities. There are about 300 monthly births in the hospital, about half among Jewish women.

For this preliminary study we used a Hebrew questionnaire. We surveyed Jewish and Arab women who were capable of completing the demographic questionnaire on their own and of conversing in Hebrew. At the time of the study it was not standard practice to survey women for PPD.

At phase 1, the recruitment phase, a research assistant approached each woman in the hospital 2 days after delivery. After giving verbal agreement to participate in the study the

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PPD = postpartum depression

women were asked to complete by themselves a questionnaire that included demographic data, questions on the course of the pregnancy, on previous diagnoses of depression, and a screening question to identify depression. When the questionnaire was returned the woman was asked to agree to a telephone interview 2 months later. Telephone surveys have been used successfully in the past in Israel on emotional problems and the use of health-care services [7]. At phase 2, the interview phase, the woman completed a second questionnaire, the Edinburgh Postnatal Depression Scale, and answered questions on her health status and consultations with physicians for herself and her baby.

### Sample size

The prevalence of PPD is known to be about 10%. In order to achieve 95% confidence intervals with a sampling error of 2.5% for the proportion of women with PPD, we required a sample of about 560 women. The sample size would enable us to identify statistically significant differences of 20% between women with and without PPD at a power of 80% with  $\alpha = 0.05$ . Since we expected a response rate of 75–80% for the second questionnaire, our sample size was defined around 750 women.

### Study instrument

Different instruments were used during the study for the diagnosis of depression:

- The Froom survey question for depression, i.e., “did you feel depressed or sad most of the time over the past year?” The reliability of this question was proven in a study conducted in the community setting [8]. We used this question in addition to inquiring about depression in the past.
- The EPDS. This is a community survey instrument for women after childbirth that was validated by comparison with the Standardized Psychiatric Review [9]. The questionnaire has 10 items, with each item scored on a scale from 0 to 3, so that the final score ranges from 0 to 30. The questionnaire ranks the severity of depressive symptoms of the previous 7 days. The cutoff point for PPD is a score of 13 or more. The EPDS has been used in many languages and cultures around the world [10]. The questionnaire was translated into Hebrew and validated [11].

In order to help women who were diagnosed with PPD we planned a psychiatric interview. After obtaining the woman's consent we transferred her personal information to one of the study investigators, a specialist in psychiatry (A.R.). The psychiatrist contacted the woman and conducted a non-structured psychiatric interview with her. Women who were found suitable for psychiatric consultation were invited to the Psychiatry clinic for a talk.

### Statistical analyses

Descriptive statistics were conducted by frequency tables and calculation of the point prevalence rates and confidence intervals for PPD. The chi-square test and Fisher exact test were used for

associations between the dependent variable, depression, and the categorical variables. The *t*-test was used to test associations with continuous variables. A multivariable logistic model was fitted to test for the variables that explained the most variance in depression. Odds ratios are presented with 95% confidence intervals.

## Results

The recruitment of participants continued for 4 months during which 738 women were approached by the research assistant in the hospital (phase 1 sample). A total of 723 completed the questionnaires. At phase 2 the research assistant established contact with 662 of the sampled women. Of these, 88 refused to cooperate; the sample size therefore totaled 574 women (86.7% response rate).

At phase 1, 70 women answered positively on the screening question for depression: 59 reported having experienced depression throughout their pregnancy and 11 had the feeling before the pregnancy. Eighty women stated that the pregnancy was planned. The course of pregnancy was described as “hard” by 271 women (37%), with 270 stating that the difficulties were emotional: depressive feeling, uneasiness, tension and anxiety. Seventy women (9.7%) reported a diagnosis of depression in the past.

At phase 2 the total score in 57 EPDS questionnaires (9.9%) was 13 or more, indicating PPD (95% confidence interval 7.5–12.4). Forty-seven of phase 2 participants who experienced depression throughout pregnancy were excluded. As a result, 527 women were eligible for further analysis [Table 1], and in 46 (8.7%) the

**Table 1.** Sociodemographic characteristics (%) of women who participated in the first (hospital) phase of the study and in the second (telephone interview) phase 2 months later

Variable	First phase (n=723)	Second phase (n=527)
<b>Ethnic group</b>		
Arabs	22.4	17
Jews	75.3	83
Unknown	0.3	
<b>Country of birth</b>		
Israel	79.4	83
Europe/America	15.3	12
Asia/Africa	5.2	5
<b>Marital status</b>		
Married	99.5	98.7
Not married	0.5	0.9
Unknown		0.4
<b>Residence</b>		
Town	58.1	58.3
Arab village	18	14.6
Other (kibbutz, town)	21.3	26.5
Unknown	2.6	0.6
<b>Employment</b>		
Employed/student	63.7	71
Homemaker	33.7	29
Unknown	0.6	

EPDS = Edinburgh Postnatal Depression Scale

total score in EPDS questionnaires was 13 or more, indicating PPD (95% CI 6–11). In answer to the question on health status, 96% said their condition was “good” or “very good,” while 4% said it was “not good.”

The rate of PPD was higher among Arab women compared to Jewish women (24.7% vs. 5.5%,  $P < 0.001$ ), among new immigrants (up to 10 years in Israel) compared to Israeli-born and more veteran immigrants (14.6 vs. 4.3%,  $P = 0.015$ ), and among homemakers compared to women who worked or studied before they gave birth (14.9 vs. 6.3%,  $P = 0.002$ ) [Table 2]. The rate of PPD was higher among women who said their pregnancy was unplanned than among those in whom it was planned (13.7 vs. 7.5%,  $P = 0.05$ ), who described the course of their pregnancy as “hard” than those who described it as “easy to somewhat hard” (12.4 vs. 6.8%,  $P = 0.032$ ), among women who described their health status as “not good” compared to those who described it as “good” or “very good” (35 vs. 7.9%,  $P = 0.001$ ), and among women who reported a prior diagnosis of depression (30.8 vs. 8.2%,  $P = 0.021$ ) [Table 2].

There were no statistically significant associations between PPD and age, country of birth, marital status, spouse's employment, the gender of the baby, giving birth to twins or triplets, or the number of previous children.

Over the course of the 2 months following childbirth, 481 of the participants consulted with physicians in the following order of frequency: pediatricians ( $n=435$ ), gynecologists ( $n=254$ ) and family physicians ( $n=113$ ). The mean number of consultations ( $\pm$  SD) per participant was 2.3 ( $\pm 1.8$ ). The problems that were cited for consulting with gynecologists were physical complaints associated with the postpartum period. There was a broad spectrum of problems cited for consulting with family physicians, including postpartum problems, physical complaints (headache, abdominal and joint pain), as well as emotional distress (irritability, insomnia). Participants consulted with pediatricians for routine baby care, acute illnesses, and problems related to irritable babies, crying and difficulties with feeding.

Women with PPD differed from those without PPD in terms of the frequency of and reasons for consultations. Some women consulted because of medical problems and others for routine care [Table 3]. The rate of PPD was significantly higher in women who consulted for medical reasons than those who came for routine care (13 vs. 4%,  $P = 0.001$ ). This finding was prominent in consultation with a pediatrician (13.6 vs. 5.6%,  $P = 0.004$ ). There was no difference in PPD with regard to reasons for consultations with gynecologists and family physicians. Women with multiple visits (four or more) to all doctors had higher rates of PPD than the others (16.7 vs. 7%,  $P = 0.002$ ). This difference was seen among women with multiple visits (three or more) to pediatricians (18.3% vs. 7.1%,  $P = 0.001$ ) and women with multiple visits (two or more) to family physicians (20.6 vs. 7.8%,  $P = 0.01$ ). No significant difference in PPD rates was found in relation to the number of visits to gynecologists.

The positive predictive values of the anamnesis questions for

PPD were: a previous diagnosis of depression (40%), the woman's description of the course of pregnancy (15%), and health status after childbirth (42%). The logistic regression model showed that Arab women are at greater risk for PPD than Jewish women (odds ratio = 5.03, 95% CI 2.6–9.68), as were women with a previous

**Table 2.** Association between PPD and sociodemographic and health variables

Variable (N)	PPD N (%)	OR	95% CI	P
<b>Ethnic group</b>				
Jews (437)	24 (5.5)	1		
Arabs (89)	22 (24.7)	5.6	2.9–10.6	<0.001
<b>Years in Israel</b>				
Israel-born or > 10 years (393)	17 (4.3)	1		
Less than 10 years (41)	6 (14.6)	3.7	1.4–10.23	0.015
<b>Employment</b>				
Outside the house (379)	24 (6.3)	1		
Homemaker (148)	22 (14.9)	2.58	1.39–4.76	0.002
<b>Pregnancy course</b>				
Easy/somewhat hard (353)	24 (6.8)	1		
Hard (21)	21 (12.4)	1.95	1.05–3.6	0.032
<b>Health after childbirth</b>				
Very good/good (483)	38 (7.9)	1		
Not good (20)	7 (35)	6.28	2.37–16.6	0.001
<b>Previous diagnosis of depression</b>				
No (512)	42 (8.2)	1		
Yes (13)	4 (30.8)	4.9	1.47–16.8	0.021

**Table 3.** Association between PPD and consultation pattern of women for themselves and their babies

Variable (N)	PPD (%)	OR	95% CI	P
<b>Consultation with any physician</b>				
Didn't consult (46)	3 (6.5)	1		
Consulted (481)	43 (8.9)	1.4	0.42–4.7	NS
<b>Consultation with any physician</b>				
Routine appointment (225)	9 (4)	1		
With a problem (254)	33 (13)	3.58	1.67–7.6	0.001
<b>Consultation with pediatrician</b>				
Routine appointment (234)	13 (5.6)	1		
With a problem (198)	27 (13.6)	2.68	1.34–5.35	0.004
<b>Consultation with family physician</b>				
Routine appointment (22)	3 (13.6)	1		
With a problem (89)	9 (10.1)	0.7	0.176–2.88	0.6
<b>Consultation with gynecologist</b>				
Routine appointment (223)	15 (6.7)	1		
With a problem (28)	4 (14.3)	2.3	0.7–7.5	0.15
<b>Multiple consultations with any physician</b>				
0–3 (431)	30 (7)	1		
4+ (96)	16 (16.7)	2.67	1.39–5.1	0.002
<b>Multiple consultations with pediatrician</b>				
0–2	31 (7.1)	1		
3+	15 (18.3)	2.94	1.5–5.7	0.001
<b>Multiple consultations with gynecologist</b>				
0–1 (503)	43 (8.5)	1		
2+ (24)	3 (12.5)	1.52	0.43–5.3	0.5

CI = confidence interval

**Table 4.** Relative risk for PPD, logistic regression analysis

Variables	OR	95% CI
<b>Ethnic group</b>		
Jewish	1.0	
Arab	5.2	2.7–10
<b>Previous depression</b>		
No	1.0	
Yes	4.7	1.23–18
<b>Consultations</b>		
0–4	1.0	
4+	1.99	0.99–4.4

diagnosis of depression (OR = 6.3, 95% CI 1.6–24.6), and women with multiple visits to a pediatrician (OR = 2.44, 95% CI 1.19–5.0) [Table 4].

The psychiatrist contacted the women who were identified as having PPD; 38 women complied (82%) and of these, 31 stated that they felt good. In a non-structured psychiatric interview, the psychiatrist formed the impression that six of the women suffered from PPD and one from post-traumatic syndrome. All of them refused the offer to receive treatment at the psychiatric clinic. They were advised to consult their family physician.

## Discussion

In the present study we used the well-recognized EPDS questionnaire. We identified PPD in 10% of the participants in a phase I sample, a rate similar to reports in the literature [2]. In a previous Israeli study a higher rate of PPD was reported (22.6%), but a lower cutoff point on the EPDS (10 points) was used in that study [12]. The questionnaire was appropriate for telephone interviews with a response rate of 79.5%, similar to that reported in an Israeli study on emotional distress [7]. In the present study we also identified a previously reported association [13,14] between a prior diagnosis of depression and PPD. The finding that PPD is more prevalent among Jewish women who immigrated to Israel over the past 10 years compared to those born in Israel or who immigrated to Israel more than 10 years earlier is similar to that reported in a previous Israeli study [12].

We found a significantly higher rate of PPD among Arab women compared to Jewish women. These results are the first published data on Arab women with PPD in Israel. Muslim women in the Middle East and Asia were reported to have PPD rates of 14–26% [15,16].

As previously reported [17], working as a homemaker is associated with PPD more than working outside of the house. However, in contrast to that study [17], we did not find an association between unemployed spouses and PPD.

The results of this study confirm the hypothesis that women with PPD consult with physicians more than those without PPD. It is possible to characterize women with PPD in terms of their consultation patterns. There are higher rates of

PPD among those who consult with pediatricians and family physicians about a specific problem. An association between high rates of use of healthcare services and depression has been reported among adults [18]. Multiple appointments with pediatricians by women with depression have also been reported [19].

Many of the problems cited by the study women – such as headache, abdominal pain and joint pain – could reflect somatization [20]. Somatization is common in depression [21]. On the other hand, “non-specific” baby-related complaints – such as feeding problems, irritability, crying, and lack of weight gain – may actually reflect maternal distress (a kind of ‘baby-related somatization’).

We asked the women questions that were found to have a predictive value for PPD of up to 40%, including a prior history of depression, the screening question for depression, and the woman’s health condition during pregnancy and following delivery. These questions, taken together with frequent visits and somatic complaints, can aid the healthcare team in the primary care setting to diagnose PPD.

A limitation of this study was the use of the EPDS questionnaire in Hebrew and the relatively smaller representation of Arab women in the telephone sample. This approach was suitable for a pilot study such as this, particularly in light of the absence of information on PPD among Arab women in Israel. In the future the questionnaire will have to be validated in an Arabic language version. Another issue is that evidence relating to the consultations with physicians stemmed from patients’ reports, which might appear to reduce the validity of the data. However, this method is accepted for large population surveys and has been used before in Israel [7,22].

We were not able to arrange treatment for the women with PPD, because they refused to visit a psychiatry clinic. This may reflect spontaneous recovery or an aversion to mental healthcare, a finding that strengthens the importance of diagnosing and treating PPD at the primary care level.

This is the first study of its type and extent conducted in Israel. The inclusion of women in the hospital provided access to a broad spectrum of the population. The investigation of patterns of consultation with primary care physicians teaches us a great deal about how PPD is manifested in primary care. The findings can provide primary care physicians with tools to identify women with PPD who visit the doctor for themselves or for their babies.

## Conclusions

In this sample of women we found an association between PPD and multiple consultations with family physicians and pediatricians. We also found that the rate of PPD was relatively high among Arab women, women who had difficulty during the course of pregnancy, and women who did not feel well after childbirth. Using appropriate study tools, future studies should address this issue specifically among Arab women and action should be taken to increase the level of awareness of PPD among primary care physicians.

OR = odds ratio

**Acknowledgments.** The authors thank Prof. P. Shvartzman for his advice in the preparation of the study proposal. The authors also thank the Association of Family Physicians for supporting the study and the staff of the Obstetrics and Gynecology department for their help in conducting the study.

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