Postpartum Depression: Prevalence and Predictors among Women at El Eman's Specialized Hospital

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Abstract: Postpartum depression is a serious public health concern because of its demonstrated adverse consequences on the development of maternal confidence and the cognitive, emotional and social development of their infant. This study aimed to estimate the prevalence and severity of postpartum depression among women at El Eman's Specialized Hospital and examine the main predictors for postpartum depression among these women during the first three months postpartum. The study was carried out in the Family Planning out patient's Clinic, El Eman Specialized Hospital at Assiut City, Egypt. The study sample comprised 110 pregnant women. Three tools were used for data collection, namely: Sociodemographic Data Structured Interview schedules, postpartum depression predictors inventory (PDPI), and Edinburgh Postnatal depression scale. The main results yielded by the study proved that, 42.73% of the studied sample were in the age group from 25 to 30 years, the majority of sample were house wives (84.5 %) , 29.1 % of sample feeling of depression during pregnancy , 50% of them suffering from anxiety during pregnancy , 44.5% of them feeling of maternity blues and 80.7% of women had post- partum depression . the study recommended to help women to improve the outcome of families suffering with post-partum depression by engaging in routine screening and providing education and referral sources to women.

1. Introduction

Postpartum women experience changes in their physiological and psychological function as they adapt to their parenting role. Although many physiological changes resolve soon after delivery of the baby [1], other changes may detract from recovery of maternal heath during postpartum period. Additionally, new health problems common to the period occur, such as postpartum depression [2].

Psychological distress after childbirth continues to be a research topic of worldwide relevance [3]. Current knowledge, based in part on meta-analysis, indicates that between 10 and 15% of women suffer from depressive disorders during the postpartum period [4].

 Postpartum period should be considered as a vulnerable time for the development of emotional and psychological disorders [5].The last part of pregnancy and childbirth can be troublesome; the body goes through rapid changes, especially hormonal. In the first days post partum, the body often feels painful and uncomfortable. The regular care of the baby involves new tasks and uncertainties, and disturbs the night's rest; the relationship to the partner changes, especially after the birth of a first child [5]. Postpartum emotional distress is fairly common after pregnancy and ranges from mild postpartum blues (affecting about 80% of women), to postpartum depression or psychosis. Postpartum psychosis can pose a threat to the life of the mother or baby [6].

Childbirth can be extraordinarily stressful, over-whelms a woman's normal ability to cope, and contribute to acute stress responses. Up to one- third of women report that labor was traumatic and feared that they or their baby would die or be seriously injured or permanently damaged [7]; [8]; [9].

Studies conducted in Australia, Sweden, the UK and the US indicate that 2–6 percent of women meet the diagnostic criteria for post-traumatic stress disorder (PTSD) following childbirth [10].

Postpartum depression affects up to 34% of women and typically occurs in the early postpartum weeks or months and may persist for a year or more. The prognosis of postpartum depression is good with early diagnosis and treatment. More than two-thirds of women recover within a year. Providing a companion during labour may prevent postpartum depression [6].

Depression arising after childbirth has attracted substantial research interest in the past 40 years, and there is now an extensive literature on its nature, prevalence, prediction, course and associations with risk and protective factors. Postpartum depression is a clinical and research construct used to describe an

episode of major or minor depression arising after childbirth [11].

Depression is the major cause of disease-related disability among women in developed countries today [12]. The prevalence of postnatal depression (PND) is approximately 12%, with peak incidence during the first three months postpartum [13].Postpartum depression has been described as a thief that steals motherhood. Early recognition is one of the major challenges with this devastating mood disorder [14].

Postpartum depression is of serious public health concern because of its demonstrated adverse consequences on the development of maternal confidence and the cognitive, emotional and social development of their infant [15].

The American College of Obstetricians and Gynecologists includes screening for PPD among the essential parts of a women's 4-6 week postpartum visit. Postpartum women also can be screened for PPD by pediatricians at their infants' well-child visits [10]. Women who are considered to have self-reported PDS based on these screenings should be administered a full diagnostic interview because they are most likely to develop PPD [16].

Midwives are well placed to understand and respond to childbearing women and can play a central role in assisting women reconcile traumatic childbirth experiences. However, postpartum women are rarely afforded opportunities to work through feelings associated with childbirth experiences [17]. The aim of the study was to estimate the prevalence and severity of postpartum depression among women at El Eman's Specialized Hospital and examine the main predictors for postpartum depression among these women during the first three months postpartum.

2. Materials and Methods
Materials
Research design:

The design followed for this study is a Cross Sectional study.

Setting:

The study was conducted at the Family Planning out patient's Clinic, El Eman Specialized Hospital at Assiut City, Egypt. This Clinic received postpartum women need to use the family planning methods. The Clinic works five days per week.

Subjects:

Subjects of the study comprised all pregnant women attending to outpatient family planning clinic within a period of first 3 months from January to March 2011. The study subjects mounted to 110 pregnant women.

Tools of the study:

Three tools were used for data collection:

1- Tool (1): Sociodemographic Data Structured Interview schedules:

This interview schedule developed by the researchers included the sociodemographic data of the study subjects such as age, occupation, education and residence.

2. Tool (2): Postpartum depression predictors inventory (PDPI). It was developed by Beck, [14].

Postpartum depression predictors inventory (PDPI) consists of 13 risk factors related to postpartum depression , the nine predictors are prenatal depression , prenatal anxiety , history of previous depression , social support , marital satisfaction , life stress , child care stress , maternity blues and infant temperament , the other four new predictors are self- esteem , marital status , socioeconomic status and unplanned /unwanted pregnancy.

The PDPI can be used during both prenatal and postnatal periods to identify women who are at risk for postpartum depression. The first 10 risk factors can be assessed during both the prenatal and postnatal periods, after a woman has delivered; the last three predictors (child care stress, infant temperament and maternity blues) can be assessed.

The PDPI - R is not a self - report but utilizes a semi structured interview procedure between a healthy care professional and a woman. The inventory includes guide questions for its use and several blank lines for comments which allow the professional to notate thoughts on a women's evaluation or allow for a treatment plan, there is no specified score which would depict high risk cases.

Strongest risk factors includes: - **Beck, [14].**

-    prenatal depression
-    prenatal anxiety
-    stressful life events
-    lack of social support
-    history of depression before pregnancy occurred

Moderate risk factors include poor marital relationship

Small risk factors include low socioeconomic status.

3. Tool (3): Edinburgh Postnatal depression scale. (EPDS)

It was developed by Cox, and Sago [18]..It is a 10 - items self report measure with four likert - style questionnaire that takes about five minutes to complete. the factors assessed are the ability to laugh , the ability to anticipate with pleasure , unnecessary blaming of oneself , worry and anxiety , fear and panic , feeling overwhelmed , difficulty sleeping

because of unhappiness , sadness and misery , crying , and thoughts of harming oneself.

Responses are scored from 0 to 3 , questions 1 , 2 and 4 are scored 0 , 1 , 2 , or 3 with top box scored as 0 and the bottom box scored as 3 , questions number 3, 5 - 10 are reverse scored , with the top box scored as a 3 and the bottom box scored as 0 . The total score is from 0 to 30.
Scores of 10 or less are considered normal. Scores of 13 or more suggest significant depression, always looked item 10 (suicidal thoughts).

Methods:
1- Permission was obtained from the dean of the faculty of nursing –Assiut University directed to the chairman of the obstetric & gynecological department at the family planning out patient's Clinic, El- Eman Specialty Hospital at Assiut City.
2- The aim of the study was explained to women before starting data collection. Women informed about what was done for them.
3- The investigator will interview the post parturient women at the Family Planning Clinics, El Eman Specialty Hospital. All ethical considerations were clarified to each woman before explanation of the nature of the study.
4- Tool two and three translated into Arabic language. Both the Arabic and English items were submitted to five experts from the English section, Faculty of Art, Assiut University to be reviewed for its translation. A jury of five experts in the psychiatric field examined the content validity. Reliability done by using Crombach alpha coefficient, it was 0.88.
5-The data were collected over three months, January 2011 to March 2011. The investigator started to fill the first sheet after interviewing each postpartum woman at the Family Planning Outpatient Clinic. The sheet included their Sociodemographic characteristics. The 2nd tool Edinburgh Postnatal depression scale (EPDS) 1987 was filled by the investigator to estimate the prevalence and severity of postpartum depression. Finally, the 3rd tool postpartum depression predictors inventory (PDPI) [14].was filled by the investigator for the same women to assess the predictors for postpartum depression; each woman was interviewed individually by the investigator at the Family Planning Clinic. The number interviewed per day was 2-3 women. The average time taken for filling each sheet was around 20-30 minutes depending on the response of the woman. Each woman was reassured that the information obtained was confidential and used only for the purpose of the study.

Statistical analysis
Statistical analysis was done by using SPSS version 16 Software Package. Data collected were coded and analyzed. The results were tabulated and statistically compared using student t-test to compare difference between two mean and chi- square to compare differences in distribution of frequencies among postpartum women. A significant P-value was considered when it is less than or equal 0.05. Construct Validity using Factor Analysis: Exploratory factor analysis yielded nine factors. However, for four of the factors there was no coherent theoretical construct that emerged, and several factors had only one or two items. An examination of the screed plot revealed a six – factor solution. The factor analysis was return, forcing it to 6 factors

3. Results:
Results of the present study showed that:
Table (1) shows that nearly half of women (42.73%) were in the age group 25 to 30 years old, with the mean age 26.50+ 4.73. As regards education, about two thirds of women (61.82%) had secondary school. The highest percentages of women (67.3%) were living in rural areas and the majority of them were housewives (84.5%).

Descriptive statistics for the prenatal version of the PDPI-R are presented in Table 2. Predictors with multiple items indexing the measurement domain tend to have high means. A high mean indicates that this predictors is likely to be associated with PPD. Predictors indicated married marital status (100%), low Sociodemographic data (18.2%), feeling depressed during pregnancy (29.1%), feeling anxious during pregnancy (50%), and previous depression (22.7%) were reported, indicating a higher likelihood of PDD occurrence.

Descriptive statistics for the postnatal version of the PDPI-R are presented in Table 3. Predictors with multiple items indexing the measurement domain tend to have low means. A low mean indicates that this predictors is not likely to be associated with PPD. Predictors indicated feeling maternity blues (44.5%), indicating a higher likelihood of PDD occurrence.

Regards the prevalence of post partum depression, the half of sample had post partum depression (51.8%) Table 4.

Table (5) indicates that the majority of women (80.7%) had the likelihood of postpartum depression.

Table 6 shows the items and their factor loading for each resultant factor. Factor 1 represents Social support contains 4 items and accounted for 15.9% of the variance. Factor 2 (3 items) represents Self-Esteem and accounted for 9.42% of the variance.

Factor 3 is conceptualized as Life stress (7 items), this factor accounted for 7.82% of the variance.

Table 7 shows the items and their factor loading for each resultant factor. Factor 1 represents infant items contains 3 items and accounted for 18.91% of the variance. Factor 2 (3 items) represents child stress and accounted for 42.62% of the variance.

Table (1): Sociodemographic Characteristics of postpartum women

Sociodemographic Data	N (110)	%	Mean $\pm$ SD
Age			
< 25	39	35.45%	
25-30	47	42.73%	26.50$\pm$ 4.73
> 30	24	21.82%	
Education			
Illiterate	16	14.55%	
Basic education	12	10.91%	
Secondary School	68	61.82%	
University	14	12.73%	
Residence			
Rural	74	67.3%	
Urban	36	32.7%	
Occupation			
Housewife	93	84.5%	
Employer	17	15.5%	

Table (2): Descriptive Results for the prenatal version of the PDPI-R

Prenatal predictor	# Item (Score range)	Mean Score * (Mean+ SD)	Frequencies N (%)
Marital status	1 item (1-1)		Married 110 (100%)
Socioeconomic status	1 item (0-1)		Low** 20 (18.2) Middle/high 90 (81.8)
Self-esteem	3 item (0-3)	2.49+0.88	
Prenatal depression	1 item (0-1)		No 78 (70.9) Yes** 32 (29.1)
Prenatal anxiety	1 item (0-1)		No 55 (50.0) Yes** 55(50.0)
Unplanned pregnancy	1 item (0-1)		No** 36 (32.7) Yes74 (67.3)
unwanted pregnancy	1 item (0-1)		No 82 (74.5) Yes** 28 (25.5)
History of Previous depression	1 item (0-1)		No **85 (77.3) Yes 25(22.7)
Social support	4 item (0-4)	3.21+1.22	
Marital satisfaction	3 item (0-3)	2.10+0.52	
Life stress	7 item (0-7)	1.13+1.11	

Note. * Higher scores are more predictive of PPD; ** this answer is more predictive of PPD.

Table (3): Descriptive Results for the postnatal version of the PDPI-R

Postnatal predictor	# Item (Score range)	Mean Score * (Mean+ SD)	Frequencies N (%)
Child Care Stress	3 item (0-3)	1.20 +1.14	
Infant Temperament	3 item (0-3)	1.76+1.26	
Maternity Blues	1 item (0-1)		No 61 (55.5) Yes** 49(44.5)

Note. * Higher scores are more predictive of PPD; ** this answer is more predictive of PPD.

Table (4): The prevalence of postpartum depression

Total	Depressed	Non depressed	Prevalence
110	57	53	51.8%

Table (5): The severity of postpartum depression n=57

	No	%	P.V
>12 the likelihood of depression	46	80.7	0.00001**
≥14 the likelihood of major depression	11	19.3	

Table (6): Exploratory Factor analysis of the Prenatal Version of the PDPI-R

Item	Factor 1	Factor 2	Factor 3	Factor 4	Factor5	Factor 6
Socioeconomic	-0.019	0.153	0.071	0.12	0.035	0.013
Self esteem1	0.276	**0.788**	0.017	0.148	-0.049	0.014
Self esteem2	0.207	**0.768**	0.091	0.203	-0.105	-0.106
Self esteem3	0.03	**0.621**	0.08	-0.173	-0.182	-0.11
Prenatal depression	-0.155	-0.292	0.122	0.007	**0.722**	-0.083
Prenatal anxiety	0.015	-0.009	-0.059	0.041	**0.86**	0.011
Unplanned1	0.004	0.018	0.074	0.116	-0.034	**-0.836**
Unplanned2	-0.06	-0.108	-0.043	0.274	0.077	**0.638**
Previous depression	-0.174	-0.036	-0.096	-0.261	**0.603**	0.253
Social support1	**0.645**	0.338	-0.053	0.096	-0.134	-0.211
Social support2	0.176	0.218	0.095	**0.796**	-0.042	0.025
Social support3	**0.742**	0.358	0.062	0.209	-0.065	-0.055
Social support4	**0.665**	0.272	0.127	0.289	-0.062	-0.011
Maritalsatisfaction1	0.372	-0.105	0.135	0.001	-0.08	0.059
Maritalsatisfaction2	**-0.687**	0.099	0.025	0.185	0.054	0.29
Maritalsatisfaction3	**0.79**	0.183	-0.02	-0.07	-0.137	0.125
Life stress1	-0.354	-0.099	0.144	-0.183	-0.067	**0.469**
Life stress2	**-0.761**	-0.008	0.105	-0.333	-0.009	0.032
Life stress3	-0.019	0.021	**0.402**	-0.052	-0.026	0.057
Life stress4	-0.026	-0.014	**0.783**	0.063	-0.025	-0.139
Life stress5	0.172	0.079	**0.63**	-0.447	0.096	0.12
Life stress6	-0.272	-0.055	0.069	**-0.594**	0.077	-0.082
Life stress7	-0.109	0.099	**0.697**	0.093	-0.049	0.005
Percent of variance	15.97	9.42	7.82	7.76	7.65	7.02

Note. Boldface indicates highest factor loadings

Table (7): Exploratory Factor analysis of the Postnatal Version of the PDPI-R

	Factor 1	Factor 2
Childstress1	-0.028	**0.868**
Childstress2	0.243	**0.751**
Childstress3	**0.432**	**0.565**
Infant tem1	**0.79**	0.201
Infant tem2	**0.814**	0.103
Infant tem3	**0.903**	0.125
Maternity	0.094	**0.497**
Percent of variance	42.62	18.91

Note. Boldface indicates highest factor loadings

4- Discussion:

Post partum depression is a crippling mood disorder, historically neglected health care, leaving mothers to suffer in fear, confusion and silence. Undiagnosed it can adversely affect the mother – infant relationship and lead to long – term emotional problems for the child [19].

The present study aimed to estimate the prevalence and severity of postpartum depression among women at El Eman's Specialized Hospital and examine the main predictors for postpartum depression among these women during the first three months postpartum.

Related to sociodemographic characteristics of the studied group, the present study showed that 42.73% were aged from 25 to 30 years old, the majority of them were house wives and 67% were living in rural areas. This finding was consistent with

Chandran *etal*. [20] Who stated that the mean age of the 384 women was 22.8 years (S.d. 3.7, range 17-37), the majority of the women were house wives and only 9% were in paid employment. Moreover, **Des Rivières *etal.*** [3] Found that significant differences between the samples for the group of women aged from 25 to 34 years. A similar, a higher frequency of distress in Quebec also fond the group of women aged 35 years and over. However, differences were not significant for the younger women; according to educational level revealed significant differences between countries for women with low educational level. Also **O, Hara *et al.*,** [21] found that women were suffering from postnatal depression were common in rural communities in India. While these results do not go with others, **Watt *et al.*,** [22] reported that there was no difference in age, parity, or length of stay and there was no stastically significant difference in the

Sociodemographic characteristics of women **Patel et al.,** [23] found that low educational attainment was not a significant risk factor for depression in the incident cases. Also, **Schmidt et al.,** [24] Stated that one study of adolescent mothers found that over 50% experienced symptoms of a major depressive episode during the first twelve months post partum.

Regarding predictors of postpartum depression, the present study revealed that low socioeconomic status, feeling of depression and anxiety during pregnancy and previous depression among the studied group. This findings do not go with the results of **Robertson et al.,** [25] who stated that lower socioeconomic status including such variables as unemployment, mother's occupation, maternal education, income and social status were weakly associated with postpartum depression. While other studies concordance with results, **Chandran et al.,** [20] found that the prevalence of depression rose from 16% before delivery to 19.8% in the postpartum period. Also, **Robertson etal.** [25] Found that higher level of anxiety during pregnancy predicted the level of postpartum depression. In another review, [26] found that having a personal history of depression or any psychiatric disorder predisposes one to greater risk of developing postpartum depression.

Concerning the prevalence of postpartum depression, the present study showed that the majority of women (80.7%) were had postpartum depression. This result consistent with the study of [27] who reported that up to 80% of women experience some form of depressive symptoms following childbirth, commonly referred to as "baby blues".

According to predictors of postpartum depression, the present study showed that social support, self-esteem and life stress as a factors which a greater risk of postpartum depression. This finding goes to the results of **O'Hara et al.,** [21] who stated that postpartum depression as a causal role of lack of social support. **Beck,** [14] stated that mothers suffering from inadequate social support and stressful circumstances leading to postpartum depression. Also, **Des Rivières et al.,** [3] reported that social support or chronic and acute stress factors play a key role in the development of postnatal psychological distress. **Robertson et al.,** [25] stated that moderate to strong risk factor related to postpartum depression is having endured stressful life events such as divorce, job loss and death of a loved one. Further, **Ryan and colleagues** [26] found that the following stressful life events may increase one's risk of developing postpartum depression as childhood abuse, single parenting, marital conflict, domestic violence, unemployment, inadequate social support and smoking. Also, **Logsdon and Usul,** [28] reported that

low self-esteem has been implicated in the development of postpartum depression.

Conclusion:

Based upon the study results, it is concluded that low level of socioeconomic status, feeling of depression and anxiety during pregnancy, and presence of a history of depression, lack of social support, low self-esteem and stressful life events as a factors predicting of postpartum depression among women.

Recommendation:

In the light of the study findings, it is recommended to:

- Help women to improve their outcome by learn them the signs and symptoms of postpartum depression
- Give new mothers permission to speak their feelings and let go of their guilt
- Providing support early intervention , screening and education may be beneficial in reducing effects of post partum depression
- Preventive measures to reduce or eliminate risk of postpartum depression as developing support group during antenatal period, enhancing her self-esteem and focusing on improving partner relationship.

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