

Proportion and Predictors of Postpartum Depression among Women Attending Fayoum University Hospitals, Egypt

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ABSTRACT

Background: Postpartum depression (PPD) is a major depressive disorder with possible long-term consequences on the mother and her infant. **Objective:** The aim of the current study is to assess the proportion of postpartum depression and its contributing factors among women who give birth and seek medical care at Fayoum University Hospitals. **Patients and methods:** A cross-sectional study was conducted on 400 postpartum women (1-6 months following delivery) who visited Obstetrics-Gynecology, Family Planning, Family Medicine, and Pediatric Clinics at Fayoum University Hospital (FUH) in Fayoum Governorate, Egypt. For data collection, the Arabic version of the Edinburgh Postnatal Depression Scale (EPDS) was used for PPD screening, socio-demographic characteristics of the participants were collected by a pre-designed structured questionnaire. **Results:** PPD was found in 39.5% of the studied women. The multivariate analysis showed that postpartum depression was significantly associated with the educational level, with higher levels of education associated with a decreased likelihood of depression with odds ratio (OR) 0.437 (95% confidence interval [95%CI] 0.248 - 0.768). Female residents of rural areas were more likely to be depressed than females of urban areas, having OR 1.8 (95%CI 1.10-2.98). The female sex of the infant was shown to be a risk factor for PPD with OR 1.76 (95%CI 1.12-2.75), and the women who were not employed had a reduced risk of depression than those who were employed, with OR 0.384 (95%CI 0.233-0.632). **Conclusion:** PPD is a considerable and existing problem among the study group. Many factors may cause PPD to occur. Early detection of such factors can help in early detection of postpartum depression.

Keywords: Postpartum depression, proportion, predictors, cross sectional study, Fayoum University.

INTRODUCTION

Although becoming a mother is joyful, some women may experience mental suffering. Women are more susceptible to mental illnesses like depression during pregnancy and the postpartum period [1]. Four to six weeks after giving birth, postpartum depression (PPD) is often seen [2].

Compared to other times in a woman's life, the chance of postpartum depressive episodes might be up to twice as high, and they often go undiagnosed and untreated [3]. Sadness, loss of interest in activities, a sense of helplessness and hopelessness, diminished energy, trouble making decisions, sleep issues, restlessness, and irritability are common depressive symptoms. Also, changes in eating patterns, suicidal thoughts or attempts, and persistent physical symptoms that don't go away with treatment are considered depressive symptoms [4].

According to 2017 analysis published in the British Journal of Psychiatry, the prevalence of PPD was (13–40%) [5]. Compared to women from industrialized nations, women from underdeveloped countries reported greater PPD levels [6].

There was not much research on PPD prevalence in Arab nations. PPD is present in 21% of the population in Lebanon [7], 22% in the United Arab Emirates [8], 19.2% in Tunisia [9], 22% in Jordan [10], and 37.1% in Bahrain [11].

Women who experience postpartum depression provide their kids poor care, misbehave as parents, and connect with their babies less effectively. Children of depressive mothers have worse sleep habits, stop nursing, and are more likely to have behavioral and developmental issues, stunting, and malnutrition [12].

The most frequent risk factors for PPD include an unhappy marriage, prenatal depression, a child's sickness, low socioeconomic position, a lack of education, an unplanned pregnancy, obesity, a history of postpartum depression, and problems during pregnancy [13]. Women's postpartum depression is also significantly influenced by domestic abuse [14]. Violence substantially impacts women's psychological, emotional, physical, and reproductive health [15]. Some risk variables, such infant's gender, are only present in eastern populations [16].

Long-term severe impacts may result from PPD non-treatment or non-diagnosis. Early identification of PPD helps to enhance maternally and child health outcomes, helps the mother adapt to parenthood more quickly, and avoids later worsening of depression symptoms [17].

This study aimed to assess the proportion of postpartum depression and its contributing factors among women who give birth and seek medical care at Fayoum University Hospitals.

PATIENTS AND METHODS

Study design and setting

A cross-sectional study was conducted on postpartum women who visited Obstetrics-Gynecology, Family Planning, Family Medicine, and Pediatric Clinics at Fayoum University Hospitals (FUH) in Fayoum Governorate, Egypt. The study carried out between the first of October 2021 and the end of March 2022.

Study participants

The study's target population consisted of all women who gave birth (1-6 months following delivery) and were visited at the FUH clinics previously indicated. After eliminating 20 individuals who took part in the pilot study, there were 400 postpartum women in the overall study group. An algorithmic quota sampling method was used to choose the participants. Using the following assumptions, the sample size was estimated using an open proportion of 50% to get the maximum permitted sample size, confidence interval of 95%, and accuracy level of 5%. A 377-person sample was calculated. In order to combat non-response, the sample size was raised by 5%.

Data collection:

The questionnaire was divided into two sections. The first section evaluated the characteristics of women and potential risk factors such as age, income, place of residence, education, employment, marital status, last child's age, feeding, and sex.

The second component is the well-known, verified Arabic version of the Edinburgh Postnatal Depression Scale (EPDS). The 10-item questionnaire takes a few minutes to finish and is completed by patients. In order to evaluate if individuals are at risk for developing PPD, an EPDS cutoff score of 13 or above was needed [18, 19].

The Edinburgh Postnatal Depression Scale (EPDS) was translated and validated in Arabic and is widely used in many Arab countries [20]. The authors interviewed individuals to get the data.

A total of 20 PPD women pre-tested the questionnaire, and necessary changes were made. Therefore, the final study did not include those 20 samples. The questionnaire's Cronbach's Alpha score was (0.804), indicating strong internal consistency.

Ethical approval:

The Faculty of Medicine Research Ethical Committee at Fayoum University gave its approval to the study. Written informed consent was taken from all participants. This work has been carried out in accordance with The Code of Ethics of the World Medical Association (Declaration of Helsinki) for studies involving humans.

Statistical analysis

The collected data were coded, processed and analyzed using the SPSS (Statistical Package for Social

Sciences) version 20 for Windows® (IBM SPSS Inc, Chicago, IL, USA). Data were tested for normal distribution using the Shapiro Walk test. Qualitative data were represented as frequencies and relative percentages. Chi square test (χ^2) and Fisher's exact test to calculate difference between two or more groups of qualitative variables. Quantitative data were expressed as mean and standard deviation (SD). Independent samples t-test was used to compare between two independent groups of normally distributed variables (parametric data). We performed a multivariate analysis using logistic regression to identify the critical risk variables for postpartum depression and to account for confounders. P value ≤ 0.05 was considered significant.

RESULTS

For this research, 400 women in total were included. Table 1 shows the sociodemographic details of the studied women.

Table 1: Sociodemographic characteristics of postpartum women (n. =400) attending Fayoum University Hospital.

Sociodemographic characteristics		N.	%
Mother age	<25	142	35.5
	25-34	199	49.8
	≥ 35	59	14.8
Residence	Urban	245	61.3
	Rural	155	38.8
Marital status	Married	390	97.5
	Widow	4	1.0
	Divorced	6	1.5
Education	Illiterate & read and write	48	12.0
	Basic education	68	17.0
	Secondary	163	40.8
	University	121	30.2
Working status	Working	131	32.7
	Not-working	269	67.3
Living in a separate house	Yes	224	56.0
	No	176	44.0
Chronic disease	Yes	28	7.0
	No	372	93.0
Feeding	Breastfeeding	220	55.0
	Artificial feeding	60	15.0
	Combine	120	30.0
Type of child	Female	205	51.3
	Male	195	48.8
Number of children	1	126	31.5
	2	108	27.0
	3	86	21.5
	4	63	15.8
	5	17	4.3
Type of delivery	Normal	82	20.5
	C.S	318	79.5

Figure 1 revealed that PPD was found in 158 (39.5%) of the 400 women who underwent screening in this study.

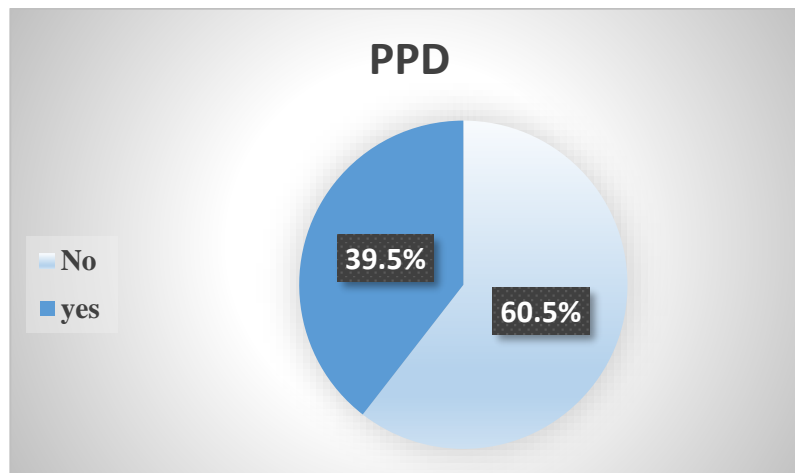


Figure 1: Proportion of Postpartum depression among studied Study participants

There were statistically significant differences between depressed and non-depressive women regarding education level, job, and time since delivery (Table 2).

Table 2: Proportion of depression among postpartum women according to their sociodemographic characteristics.

Women Characteristics		PPD -n. (%)		P-value
		No 242 (60.5%)	Yes 158 (39.5%)	
Women age at last pregnancy	<25	85 (59.9)	57 (40.1)	0.325
	25-34	126 (63.3)	73 (36.7)	
	≥ 35	31 (52.5)	28 (47.5)	
Education level	Illiterate and, read and write	16 (33.3)	32 (66.7)	<0.001*
	Basic education	48 (70.6)	20 (29.4)	
	Secondary	110 (67.5)	53 (32.5)	
	University education	68 (56.2)	53 (43.8)	
Occupation	Working	61 (46.6)	70 (53.4)	<0.001*
	Not-working	181 (67.3)	88 (32.7)	
Residence	Urban	156 (63.7)	89 (36.3)	0.103
	Rural	86 (55.5)	69 (44.5)	
Living house	Separate	132 (58.9)	92 (41.1)	0.468
	Extended	110 (62.5)	66 (37.5)	
Chronic diseases	Yes	14 (50.0)	14 (50.0)	0.239
	No	228 (61.3)	144 (38.7)	
Marital status	Married	238 (61.0)	152 (39.0)	0.202
	Widow/Divorced	4 (40.0)	6 (60.0)	
Type of feeding	Breastfeeding	138 (62.7)	82 (37.3)	0.549
	Artificial feeding	36 (60.0)	24 (40.0)	
	Combined	68 (56.7)	52 (43.3)	
Duration since delivery	1through 1 month	22 (37.3)	37 (62.7)	<0.001*
	>1m up to 6 months	125 (62.5)	75 (37.5)	
	> 6 months	94 (67.1)	46 (32.9)	
Type of baby	Female	117 (57.1)	88 (42.9)	0.151
	Male	125 (64.1)	70 (35.9)	

Logistic regression analysis predicted associated factors for PPD; duration from delivery was risk factor of depression, with probability of having depression was higher in females within one month of delivery. Also educational level was revealed risk factor, with probability of depression was lower in higher educational level (secondary or universality education). Rural Resident females had higher probability of being depressed than urban females. Women who were not employed had a lower risk of depression than those who were, and female sex of baby was detected to be risk factors for PPD (Table 3).

Table 3: Predictors of postpartum depression among the study participants.

Predictors	B	P-value	OR	95% CI for OR
Age	.019	.361	1.019	.979 - 1.061
Resident (rural)	0.594	0.019	1.812	1.101 - 2.980
Living house (extended)	-0.157	.540	.855	.518 - 1.411
Occupation (not working)	-0.958	<0.001	0.384	0.233 - 0.63
Marital status (widow or divorced)	0.584	0.428	1.792	0.424 - 7.577
Sex baby (female)	0.564	0.013	1.758	1.124 -2.751
Duration of delivery (> 6 months)		<0.001		
Duration of delivery (less than one month)	1.381	<0.001	3.979	2.00 - 7.914
Duration of delivery (1-6 m)	0.148	0.553	1.159	0.712 -1.888
Chronic diseases (no)	-0.120	0.779	0.887	0.383 - 2.053
Feeding, Breastfeeding	Reference 0.486		---	
Feeding(artificial)	0.278	0.400	1.320	0.692 - 2.518
Feeding(combined)	0.269	0.286	1.308	0.798 - 2.143
Mother education (secondary and university education)	-0.828	<0.001	0.437	0.248 - 0.768
Constant	0.467	0.773	1.595	---

DISCUSSION

Women are more vulnerable to emotional instability and depressive symptoms during pregnancy and postpartum because of the biological, psychological, and social changes that occur throughout these stages of life [21]. The present research included 400 women who visited the clinics at Fayoum University Hospitals in Egypt. The study's goals were to assess the proportion of postpartum depression in postpartum women and the determinants of its occurrence among the women under study. Nearly two-fifths (39.5%) of the 400 women who had PPD screening between the first day after delivery and the sixth month after giving birth were found to have the condition, according to the EPDS, with a cutoff point of 13. This is more than the global prevalence of women of 10-15% and the prevalence of 20-30% in other Arabic populations [22].

According to our research, the rate of PPD was higher than that of the Sohag study, which found that the total incidence of PPD was 7.32%. However, the prevalence was different in the other areas in Egypt, with studies in Gharbia Governorate and El-Minia showing a greater frequency of 20%. The frequency in the Mansoura study was likewise 17.9%. However, the Assiut study had the highest frequency, at 51.7% [23]. The sociodemographic characteristics of the examined groups may cause this variance in PPD rates.

Additionally, the disparity in the reported prevalence of PPD may be attributable to the different diagnostic standards. Further, variances in the participants' capacity to recognize and report symptoms may have contributed to the discrepancy. This issue has been reported when studies use self-administered techniques to assess PPD, particularly the EPDS [24].

Age and PPD do not seem to be related in our research. This result was in line with **Salah et al.** [25] findings that there was no age difference between

women who were depressed and those who weren't. However, some research has shown a strong association between PPD and younger age [26].

Similar to research done in Saudi Arabia [27], the current investigation did not identify any relation between chronic illnesses and marital status with PPD. But according to other research [23-27], women with gestational disorders or chronic illnesses are more likely to have PPD than those without.

According to our findings, there is no relation between PPD and the kind of feeding (breastfeeding or artificial feeding). This is comparable to **Kossakowska et al.** [28] argument that postpartum depression may not always be increased by nursing. Contrarily, research by **Hamdan et al.** [29] demonstrates that breastfeeding mothers had a lower incidence of PPD.

The findings of this research demonstrated that maternal education is a risk factor for postpartum depression, with depression being lower at higher educational levels (secondary or universal education). Research in Minia, Egypt [30], which found that postpartum depression incidence is highly influenced by education level, provided further support for this study. The efficiency of the coping mechanism chosen is influenced by educational level. People with higher levels of education will approach challenges with more realism and initiative than those with lower levels of education. Higher-educated individuals are assumed to be more adaptable. According to **Elrassas et al.** [31] and **Alharbi et al.** [32] reported that education is not a factor in the development of postpartum depression.

The results of the current study indicate that housewives have a lower risk of PPD than working women. This finding is consistent with research done in Ethiopia by **Gebregziabher et al.** [24] and may be related to work characteristics like overall workload and a lower sense of control over work and family. According to the results of research conducted in Ismailia, Egypt,

housewives seem to be more likely than working moms to experience depression [33].

In the current research, women who gave birth to female infants were more likely to experience postpartum depression. This result indicates a favorable attitude toward boys, who are seen as preferable to girls, particularly in rural settings. The predilection for male offspring is firmly ingrained in Egyptian culture, and mothers who already have female children experience higher stress due to their desire for a boy to be the kid. The likelihood of the kid developing depression is higher if she is a female. The birth of a female child may be held responsible by mothers. Comparable research has been done in Palestine [22] and in Ismailia, Egypt [33]. In contrast, a research by **Abdelaziz et al.** [23] that was conducted in Egypt found no connection between PPD and the kind of infant (male or female).

According to our research, women who lived in rural areas were more likely to experience depression than women who lived in urban areas. This finding could be explained by the fact that remote regions tend to have more familial and social issues, such as early marriage, immaturity of these young mothers (a mentally taxing element), residential chore demands, low education possibilities, and some fewer job opportunities. In a research conducted in Uganda by **Atuhaire et al.** [34], it was shown that living in a rural area was a risk factor for PPD. In contrast, research from Egypt found no relationship between PPD and place of living (rural or urban) [23].

A risk factor for PPD was the time since birth, which was greater in women within one month after labor. This might be because of hormonal changes, which, particularly in the first week after delivery, make changes in mood and sadness more likely than at other times. It could also be because of the worry of having a new baby, taking on new obligations, and struggling to adjust to the circumstance. This research is comparable to one carried out in Tunisia by **Cherif R et al.** [35].

CONCLUSION AND RECOMMENDATIONS

PPD is a considerable and existing problem among the study group. Many factors may cause PPD to occur. Early detection of such factors by opportunistic screening of mothers at well-child visits by family physicians can help in early detection of postpartum depression.

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