Prevalence of Postpartum Depression among Mothers who Delivered in a Tertiary Hospital*

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ABSTRACT

General Objective: To determine the prevalence of postpartum depression among mothers who delivered in a tertiary hospital.

Methods: A total of 115 postpartum patients were included in the study. The Edinburgh Postnatal Depression Scale (EPDS) which was developed in 1987 for screening postpartum women was used in this study. It was translated in Filipino language and has been validated. A score of at least 10 points indicates possible postpartum depression. A score of at least 1 point in question # 10 indicates suicidal ideation.

Results: Out of 115 patients, 89 had an EPDS score below 10 points corresponding to 77.39% of the total population studied, while 26 participants had a score of at least 10 points corresponding to 22.61%. There were 9 respondents who scored at least 1 point in question #10 pertaining to 7.83% of the population.

Conclusion: Postpartum depression is a universal dilemma. In this study, the prevalence of postpartum depression among mothers who delivered in a tertiary hospital in Dasmariñas, Cavite from April to May 2013 is 22.61%. Since postpartum depression is a common condition with serious consequences, screening must be done with a multidisciplinary approach from both the obstetricians and psychiatrists.

Keywords: Major Depression, Postpartum Blues, Postpartum Depression

INTRODUCTION

Women are predisposed to depression due to several biological processes including genetically determined vulnerability and hormonal fluctuations related to reproductive function. Pregnancy is a major life stressor that can precipitate or exacerbate depressive tendencies. Hormonal changes and life stressors can markedly influence mental illness. According to Ressler and Nemeroff, studies of depressed patients have found decreased serotonin turnover, decreased 5-HT_{1A} receptor sensitivity and post-mortem binding in limbic areas, and decreased serotonin transporter density in platelets[1].Estrogen modulates serotonergic function, and women who experience postpartum depression often have higher predelivery serum estrogen and progesterone levels and experience a greater decline postpartum[2]. Postpartum depression (PPD) is the most common disorder after childbirth, affecting 10% to 20% of mothers in Western Countries[3]. In studies done in Asia, the overall prevalence of postpartum depression is 21.8%[4]. In the Philippines, it is estimated in that in 2008, 126,826 cases were reported to have this clinical disorder[5]. Although studies conducted worldwide demonstrate that postpartum depression is a universal experience, cultural attitudes, customs, and norms, contribute to the differences in prevalence of this clinical disorder. According to Moses-Kolko, Eydie and Roth, PPD is underdiagnosed and remains the most common complication after giving birth. It is the most common perinatal psychiatric disorder, with women at greatest risk during their first postpartum year[6].

It is estimated that at least 50% of PPD cases are unrecognized[7]. Women attempt to hide their distress and struggle alone in fear of being labelled an unfit parent, or worse, having their baby taken from them. Most mothers will not directly state that they are experiencing postpartum depression, unless screened by physicians.

While psychiatrists are probably equipped to identify and treat PPD, women are more likely to consult their obstetricians especially if trust and rapport has been established. It is thus imperative for obstetricians to familiarize themselves with symptoms, risk factors, and screening techniques of PPD.

The stress of caring for a newborn or even the circumstances surrounding labor and delivery may precipitate the symptoms of PPD.

According to the Diagnostic and Statistical Manual of Mental Disorders (DSM-IV), the criteria for postpartum depression must meet the criteria for major depressive episode and criteria for postpartum onset specifier.

Although PPD is diagnosed for at least two weeks of having depressive symptoms, there are studies stating

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that the simple screening methods such as the use of Edinburgh Postnatal Depression Scale (EPDS) questionnaire as early as day 5 postpartum can reliably predict the diagnosis of PPD at 4 and 8 weeks postpartum[7].

Several studies have identified the risk factors for postpartum depression including the age, marital status, educational attainment, socio-economic status, parity, previous psychiatric disorder, manner of delivery, gender of newborn, and breastfeeding status. [8,9,10,11,12]

Postpartum depression is a serious but largely unrecognized condition, therefore, this study aims to determine the prevalence of postpartum depression among mothers who delivered in a tertiary hospital in Dasmariñas, Cavite from April to May 2013. Specifically, it aims to determine the proportion of mothers experiencing postpartum depression on the basis of the following socio-demographic factors: age, marital status, employment status, manner of delivery, parity, age of gestation upon delivery, gender of newborn and breastfeeding status.

Postpartum depression is a curable disease when diagnosed early. As with other psychiatric disorders, patients with PPD are more likely to seek help from their primary care physicians than from mental health professionals. Hence part of the goals of obstetricians is to have a clinical judgement in screening possible patients undergoing this serious condition.

Because of the chronicity of PPD, and the impact it has on a woman and her entire family, anticipatory guidance about PPD risk factors, prevalence, and typical symptoms is recommended to alert women who have one or more risk factors to contact their health care providers if depression or anxiety symptoms appear and persist beyond two weeks postpartum. The earlier patients with PPD are diagnosed; the sooner treatment measures can be implemented to prevent it from worsening into a more severe, and chronic course.

GENERAL OBJECTIVE

To determine the prevalence of postpartum depression among mothers who delivered in a tertiary hospital.

Specific Objective: 1) To determine the proportion of mothers experiencing postpartum depression on the basis of the following socio-demographic factors: age, marital status, employment status, manner of delivery, parity, age of gestation upon delivery, gender of newborn and breastfeeding status.

METHODS

This descriptive cross-sectional study was approved by the Independent Ethics Committee (IEC) of a tertiary hospital in Dasmariñas, Cavite. Written informed consent which was written in Filipino language was sought from all participants prior to distribution of questionnaire. For patients below 18 years of age, consent from the parent or nearest guardian was obtained. This study was conducted at the postpartum clinic of a tertiary hospital in Dasmariñas, Cavite Obstetrics and Gynecology Out-Patient Department (OPD) and included all charity patients who delivered in this institution, and who followed up after at least two weeks from delivery for the month of April to May 2013. A total of 115 postpartum mothers followed up at the clinic and all agreed to participate in the study. Socio-demographic factors such age, marital status, employment status, parity, manner of delivery, age of gestation at the time of delivery, and gender of the newborn, including the medical and psychiatric data were reviewed from the record obtained during the time of admission. The breastfeeding status was assessed upon follow-up at the OPD. In terms of parity, it was divided into primiparous for those who delivered for the first time, and multiparous for those who delivered a viable fetus at least twice. The age of gestation was classified depending on whether the participants delivered at 37 weeks for full term and less than 37 weeks but more than 20 weeks for preterm.

The Edinburgh Postnatal Depression Scale (EPDS) which was developed in 1987 for screening postpartum women was used in this study. It was translated in Filipino language and has been validated. It was translated in Filipino by a linguist from an institution in Dasmariñas, Cavite and was translated back to English by three (3) other people. It was pretested on 20 postpartum patients in the out-patient department of a tertiary hospital in Dasmariñas, Cavite. It is a 10-item self-report questionnaire which has been utilized among numerous populations. Maximum score is 30 points and a score of at least 10 points was used for screening possible cases of postpartum depression. The positive predictive value with a scoring threshold of at least 10 was 79.2 % with 90.5 % sensitivity and 86.1% specificity 13. A score of at least 1 point in question # 10 indicates possible suicidal ideation. Depending on the respondents' EPDS score, the proportion of mothers under each socio-demographic characteristic previously mentioned was determined.

The respondents who obtained higher EPDS score including those who were found out to have suicidal ideation were contacted and were advised to follow up at the OPD. Of the 26 respondents who had an EPDS score of at least 10 points, 20 of them (76.92%) followed up, while 5 respondents out 9 who had suicidal ideation (55.56%) were seen again at the postpartum clinic. The same questionnaire was given to them to re-assess their condition and all the respondents had the same EPDS score on re-evaluation. They were advised to consult at the psychiatry department but none of the affected respondents complied.

RESULTS

Of the 115 postpartum charity patients who delivered in a tertiary hospital in Dasmarinñas, Cavitefrom April to May 2013,and who followed up at the Out-Patient Department, all 115 patients participated in the study with a response rate of 100%.

Table 1. Distribution of Respondents as to Edinburgh Postnatal Depression Scale (EPDS) Score

EPDS Score	# of Respondents	%
less than 10 points	89	77.39
at least 10 points	26	22.61
Total (N)	115	100

Table 1 shows that out of 115 respondents, 89 had an EPDS score below 10 points corresponding to 77.39% of the total population studied, while 26 respondents had a score of at least 10 points corresponding to 22.61%.

Table 2. Distribution of Respondents as to Edinburgh Postnatal Depression Scale (EPDS) Score and Age

Age (years)	EPDS Score <10		EPDS Score ≥10		Total Number of Respondents per Age Group	
	n	%	n	%	n	%
Less than 18	2	1.74	2	1.74	4	3.48
18-35	73	63.48	22	19.13	95	82.61
More than 35	14	12.17	2	1.74	16	13.91
Total (N)	**89**	**77. 39**	**26**	**22.61**	**115**	**100**

Table 2 shows that majority of the respondents (82.61%) were 18-35 years old. The mean age of the respondents was 27 years old (standard deviation = 6, range = 21-33 years old).

Table 3. Distribution of Respondents as to Edinburgh Postnatal Depression Scale (EPDS) Score and Marital Status

Marital Status	EPDS Score <10		EPDS Score ≥10		Total Number of Respondents per Marital Status	
	n	%	n	%	n	%
Married	46	40	18	15.65	64	55.65
Single	43	37.39	8	6.96	51	44.35
Total (N)	**89**	**77. 39**	**26**	**22.61**	**115**	**100**

Table 3 shows that most of the respondents (55.65%) were married.

Table 4. Distribution of Respondents as to Edinburgh Postnatal Depression Scale (EPDS) Score and Employment Status

Employment Status	EPDS Score <10		EPDS Score ≥10		Total Number of Respondents per Employment Status	
	n	%	n	%	n	%
Employed	11	9.56	2	1.74	13	11.30
Unemployed	78	67.83	24	20.87	102	88.70
Total (N)	**89**	**77. 39**	**26**	**22.61**	**115**	**100**

Table 4 shows that majority (88.70%) are unemployed.

Table 5. Distribution of Respondents as to Edinburgh Postnatal Depression Scale (EPDS) Score and Parity

Parity	EPDS Score <10		EPDS Score ≥10		Total Number of Respondents per Parity	
	n	%	n	%	n	%
Primiparous	32	27.83	16	13. 91	48	41.74
Multiparous	57	49.56	10	8.70	67	58.26
Total (N)	**89**	**77. 39**	**26**	**22.61**	**115**	**100**

Table 5 shows that most respondents (58.26%) were multiparous.

Table 6. Distribution of Respondents as to Edinburgh Postnatal Depression Scale (EPDS) Score and Manner of Delivery

Manner of Delivery	EPDS Score <10		EPDS Score ≥10		Total Number of Respondents per Parity	
	n	%	n	%	n	%
Vaginal Delivery	62	53.91	19	14.78	79	68.70
Abdominal Delivery	27	23.48	9	7.83	36	31.30
Total (N)	**89**	**77. 39**	**26**	**22.61**	**115**	**100**

Table 6 shows that most respondents (68.70%) delivered vaginally.

Table 7. Distribution of Respondents as to Edinburgh Postnatal Depression Scale (EPDS) Score and Age of Gestation

Age of Gestation	EPDS Score <10		EPDS Score ≥10		Total Number of Respondents per Parity	
	n	%	n	%	n	%
Full Term	85	73.91	24	20.87	109	94.78
Preterm	4	3.48	2	1.74	6	5.22
Total (N)	**89**	**77. 39**	**26**	**22.61**	**115**	**100**

Table 7 shows that almost all respondents (94.78%) delivered full term.

Table 8. Distribution of Respondents as to Edinburgh Postnatal Depression Scale (EPDS) Score and Gender of Newborn

Gender of Newborn	EPDS Score <10		EPDS Score ≥10		Total Number of Respondents per Gender of Newborn	
	n	%	n	%	n	%
Male	52	45.22	14	12.17	66	57.39
Female	37	32.17	12	10.43	49	42.61
Total (N)	**89**	**77. 39**	**26**	**22.61**	**115**	**100**

Table 8 shows that majority of the mothers (57.39%) delivered to male babies.

Table 9. Distribution of Respondents as to Edinburgh Postnatal Depression Scale (EPDS) Score and Breastfeeding Status

Breastfeeding status	EPDS Score <10		EPDS Score ≥10		Total Number of Respondents per Breastfeeding status	
	n	%	n	%	n	%
Purely Breastfeeding	19	16.52	6	5.22	25	21.74
Mixed Feeding	70	60.87	20	17.39	90	78.26
Total (N)	**89**	**77. 39**	**26**	**22.61**	**115**	**100**

Table 9 shows that most of the babies are mixed fed with breastmilk and formula milk (78.26%).

Majority of the respondents who scored at least 10 in the EPDS questionnaire belong to age 18-35 years old (19.13%), married (15.65%), unemployed (20.87%) and primiparous (13.91%). Most of the mothers delivered vaginally (14.78%) to a term (20.87%) baby boy (12.17%), and most babies are mixed feeding (17.39%).

There were 9 respondents who scored at least 1 point in question # 10 pertaining to 7.83% of the population.

Table 10 shows that of the 9 respondents (7.83%) who had at least 1 point in question #10, nearly all belong to the same socio-demographic factors as those who have an EPDS score of at least 10 points except for the gender of the baby. Majority of mothers (4.35%) who were noted to have suicidal ideation delivered to a baby girl.

DISCUSSION

Puerperium is a period of profound physical and emotional changes, and therefore associated with onset or exacerbation of mental disorders such as depression[14,15,16]. This study found out that the prevalence of postpartum depression among charity patients who delivered in a tertiary hospital in Dasmariñas, Cavite from April to May 2013 was 22.61%.

Most of the previously established risk factors played a role in screening for postpartum depression. According to O'Hara MW, there were studies that showed young maternal age to be a risk factor for postpartum depression since they could not easily adapt to the changes brought by motherhood[17]. In this study, most respondents (19.13%) who experience postpartum depression belonged to age 18-35 years old.

In 1995, a study done by Jadresic E and Araya R, have reported that unmarried women are twice more likely than their married counterparts to have PPD[18]. According to Roomruangwong C and Epperson C, one of the unique Asian cultural-related factors for PPD is premarital pregnancy which is considered to be unacceptable in Asian countries. This is probably related to the conservative outlook of most Asians, especially the elderly, toward premarital sex compared to Western countries. Some Asian countries even consider premarital sexual relationship as a shame or taboo which makes involved women experience postpartum depression[19, 20, 21, 22, 23]. In this study, the prevalence of married women (15.65%) having postpartum depression was higher compared with unmarried mothers (6.96%). This may be attributed to the greater proportion of married respondents involved in this study which is 55.65% compared to unmarried respondents (44.35%). And also, the status of the respondents' relationship with their partners was not assessed in this study. It may be possible that although some mothers who participated in this study were unmarried, their partners have a strong emotional assistance during and after their

Table 10. Distribution of Respondents with EPDS score of at least 1 point in question #10 as per Socio-Demographic Factor

Socio-demographic Factor	# of Respondents	%
Age (years)		
Less than 18	2	1.74
18-35	7	6.09
More than 35	0	0
Marital Status		
Married	7	6.09
Single	2	1.74
Employment Status		
Employed	1	0.87
Unemployed	8	6.96
Parity		
Primiparous	7	6.09
Multiparous	2	1.74
Manner of Delivery		
Vaginal Delivery	5	4.35
Abdominal Delivery	4	3.48
Age of Gestation		
Full Term	8	6.96
Preterm	1	0.87
Gender of Baby		
Male	4	3.48
Female	5	4.35
Breastfeeding Status		
Purely breastfeeding	4	3.48
Mixed Feeding	5	4.35
Total (n)	**9**	**7.83**

pregnancy leading to a decrease in prevalence of PPD among them.

Meanwhile, in a study done by Patel, Rodrigues and Desqueza, it was found that maternal unemployment was a predictor of postpartum depression[24]. In comparison, the result of this study noted that majority of mothers who have postpartum depression were unemployed (20.87%). Financial difficulty or poverty was found to be related with prevalence of PPD both in Asian and Western Countries due to increase expenses for a new family member[25, 26].

In a study done by Bergant and co-authors, it was noted that cesarean section was one of the several variables considered to be a significant risk factor for patients with postpartum depression and maybe related to the post-operative pain experienced by mothers[27]. However in this study, it was noted that vaginal delivery has a higher proportion (14.78%) in patients who have postpartum depression compared to those who delivered by cesarean section (7.83%). It may again be attributed to the large difference between the number of respondents who participated in this study who mostly delivered vaginally (68.70%).

According to Cunningham, et al. postpartum depression has been associated with preterm birth[28]. In contrast, majority of those diagnosed with postpartum depression in this study delivered full term (20.87%).

It was also found out that the risk of postpartum depression was higher in mothers who delivered to a baby girl[24]. In some Asian cultures dominated by Confucianism, married couples are expected by their family to have at least one son to maintain the continuity of bloodline[29]. In some other Asian countries consider a baby boy as a source of income. Women who cannot give birth to a baby boy may be considered incapable, leading in turn to serious marital problems[30]. However in this study, there is a slight increase in the number of respondents who have postpartum depression and delivered to a baby boy (12.17%) in contrast to those who delivered to a baby girl (10.43%). This is probably because in the Philippines, gender of the newborn is not really an issue since even women can work and earn for their families.

In a study done by Labbok in 2001, it was found out that the peak incidence of PPD in countries where exclusive breastfeeding is a norm, PPD peaked at 9-months after delivery while in those countries where formula feeding is a custom, the incidence of PPD peaks at 3-months postpartum[9]. In another study by Misri S, Sinclair D, and Kuan A in 1997, it was found out that there is an association between patients with PPD and cessation of breastfeeding[10]. Also in a study conducted by Fergesson SS, Jamieson DJ, and Lindsay M in 2002, it was found out that early cessation of breastfeeding was significantly associated with higher patient scores on EPDS[11]. In a similar study done by Abou-Saleh and colleagues in 1998, it was reported that women who breastfed their infants had significantly lower scores than non-lactating mothers on the EPDS[12]. These findings were supported in this study. It was noted that majority of the respondents who had higher EPDS score were not purely breastfeeding their babies (17.39%).

Although suicidal ideation tended to correlate with high overall scores, some women reported suicidal ideation even with lesser total scores. Regardless of total score, any positive response to the suicidal ideation item on EPDS indicates an urgent need to be treated seriously, and clear systems for evaluation or referral should be taken in consideration.

CONCLUSIONS AND RECOMMENDATIONS

Postpartum depression is indeed a universal dilemma. In this study, it was noted the prevalence of

postpartum depression among mothers who delivered in a tertiary hospital in Dasmariñas, Cavite from April to May 2013 is 22.61%.

It was noted that majority of those who have postpartum depression were 18-35 years of age, married, unemployed, primiparous, and delivered vaginally to a full term baby boy and were mixed feeding their babies.

Like any screening tool, the Edinburgh Postnatal Depression Scale must not be a substitute for full clinical evaluation of depression, and instead high scores warrant further assessment.

It is recommended to have a follow up analytic study to assess if there is really an association between these socio-demographic factors and the prevalence of postpartum depression.

Since postpartum depression is a common condition with serious consequences and readily available treatments, a routine screening program is appropriate. It is recommended that screening must be done with a multidisciplinary approach from both the obstetricians and psychiatrists.

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