

POSTPARTUM DEPRESSION PREDICTORS, HELP-SEEKING BARRIERS AND NURSING IMPLICATIONS

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Abstract

Background: Postpartum depression is a serious public health problem because of its demonstrated adverse consequences on the development of maternal confidence and the cognitive, emotional and social development of their infant. **Aim of the study:** was to find out the predicting variables of postpartum depression, determine its help seeking barriers and evaluate the impact of an educational program on upgrading nurses' knowledge pertaining to the assessment and prevention of postnatal depression. **Subjects & methods: Research design:** A case control design and an intervention design. **Setting** at two Maternal and Child Health Centers. at Zagazig University Hospitals. **Subjects:** 400 puerperal women were recruited randomly as a first sample and the second sample included 20 maternity nurses working in antenatal, natal and postnatal units. **Tools of data collections:** an interview questionnaire, Edinburgh Postnatal Depression Scale, Postpartum Depression Screening Scale, Short Explanatory Model Interview, help seeking barriers questionnaire and nurses' knowledge questionnaire. **Results:** postnatal depression was associated with low educational attainment (11.0%), financial difficulties (17.5%), unwanted pregnancy (30.5%), and unsuccessful breast feeding (27.5%). Factors predicting of postpartum depression include, feeling of depression and anxiety during pregnancy (78.0% & 94.0%), lack of social support (55.0%), low self-esteem (77.0%), marriage problems (69.5%). Almost two fifth of cases (57.5%) did not seek help for their depression. Statistically significant improvements were revealed at both the post and follow-up phases in all areas of tested knowledge. **Conclusion:** The implementation of an educational program was associated with high significant improvement in maternity nurse's knowledge in both the post and follow-up phases. **Recommendation:** nurses need to keep abreast of current knowledge and researches to be knowledgeable about postpartum depression and to ensure thorough assessments. They should also know about resources in their communities for treating postpartum depression to promote appropriate referrals. **Key words:** Postpartum depression, Predictors, Help seeking barriers.

Introduction:

Postpartum depression is a non-psychotic depressive episode of mild to moderate severity, beginning in or extending into the first postnatal year. It is described as a thief that steals motherhood⁽¹⁾.

The causes of PPD are unknown; however, the pathophysiology of PPD is thought to involve interactions between biological susceptibility and other risk factors. Genetic factors; declines in reproductive hormone levels (ie, estrogen, progesterone, and testosterone); changes in thyroid, hypothalamic-pituitary-adrenal axis,

and neuro-active steroid functioning; but no single causal factor has emerged⁽²⁾.

A large number of risk factors for PPD have been identified. In general, history of depression or anxiety problems (puerperal or non-puerperal), absent or inadequate support at home, ongoing stressful life events, low income, and emotionally abusive or other relationship problems with the partner appear to have moderate to strong predictive effects for PPD⁽³⁾.

Postpartum depression is associated with impaired mother-infant bonding, negative parenting practices, unsuccessful breast-feeding, and marital discord, as well as worse cognitive and social development in offspring. However, remission of maternal depression reduces the risk of behavioral problems and psychiatric symptoms in offspring^(4,5).

Many postpartum women do not recognize the symptoms of depression which results in an illness that goes undetected. Even when these symptoms become significant and interfere with daily activities, a majority of women do not seek help for their symptoms⁽⁶⁾. There are several explanations reported by postpartum women for a delay in help seeking. These include lack of time, stigma or shame, unavailable resources, childcare issues, decreased satisfaction with health care services, and feelings that they could deal with depression on their own⁽⁷⁾.

The high prevalence and serious consequences of postpartum depression (PPD) make the condition an important clinical issue for maternity nurses worldwide⁽⁸⁾. Using a simple questionnaire, the Edinburgh Postnatal Depression Scale (EPDS), and a brief clinical assessment, the maternity nurses can identify these women and offer help⁽⁹⁾. Supportive counseling has proved effective for women who are not in need of specialist help⁽¹⁰⁾.

Significance of the problem:

Postpartum depression (PPD) is a common, potentially disabling, and, in some cases, life-threatening condition with a prevalence of 17.9% in Egypt⁽¹¹⁾. Fortunately, PPD is also readily detectable in routine practice and is amenable to treatment by a wide variety of modalities that are effective for treating non puerperal major depression. Postpartum depression screening improves case identification and can lead to better

clinical outcomes, although many barriers to receiving adequate PPD treatment must often be overcome⁽¹²⁾. A nurse is the most important supporter of women who has just given birth and nurses also have the responsibility to help mothers cope with psychological problems in postpartum period.

Aim of the Study:

The aim of the present study was to, find out the predicting variables of postpartum depression, determine its help seeking barriers and evaluate the impact of an educational program on upgrading nurses' knowledge pertaining to the assessment and prevention of postnatal depression.

Research questions

- 1-What are the predicting variables associated with postpartum depression?
- 2-What are the postpartum depression help seeking barriers?
- 3-What is the effect of the nursing program in raising nurse's awareness pertaining to the assessment and prevention of postpartum depression?

Subjects and methods

Research Design:

A case control design and an intervention design were used for this study

Study Setting:

Two Maternal and Child Health Centers (Alnahal Medical Centre and Sheba MCH) that are affiliated to the Ministry of Health and Population in Zagazig City and Zagazig University Hospitals (the maternity hospital for the intervention part of this study).

Study Subject

A total of 400 puerperal women were recruited randomly as a first sample during the study period, the second sample included 20 maternity nurses

working in antenatal, natal and postnatal units at Zagazig University Hospitals.

Tools of data collection:

Structured interviewing questionnaire was designed in Arabic language by the researcher and was validated by highly qualified professional professors in the field. The interview was utilized to collect the necessary data about the study subjects. It was constructed use simple language structures, keeping in mind the educational level of each mother and nurse. The interview consisted of seven parts as follows.

I) Structured Interviewing

Questionnaire (Appendix I)

It includes socio-demographic data, obstetrical data and the clinical details of the last delivery.

II) Postpartum Depression

Predictors Inventory Scale

Postpartum depression predictors inventory scale (PDPI) was developed by Beck⁽¹³⁾. It consists of 13 risk factors related to postpartum depression; the nine predictors are prenatal depression, prenatal anxiety, and 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.

Scoring system

Responses to PDPI are made on a four point scales and scores range from strong to small risk factors, with higher scores indicating;

- **Strongest risk factors which include** prenatal depression, prenatal anxiety, stressful life events, lack of social support and history of depression before pregnancy.
- **Moderate risk factors** include poor marital relationship

- **Small risk factors** include low socioeconomic status

The total scores of PDPI scores for each respondent were calculated by summing the responses to each question.

III) Edinburgh Postnatal Depression Scale

The EPDS was developed by Cox et al⁽¹⁴⁾ and most thoroughly researched and modified by Schumacher and Zubaran⁽¹⁵⁾. It is a self-report, quick, and easy screening tool for PPD that consists of 10 questions with 4 possible responses. 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.

Scoring system

The women fill out the tool according to their symptoms over the last 7 days, with each response given a score of 0 to 3 points, creating a maximum score of 30. It was used in the current study to screen PPD from 2 to 6 months. A Score of 10 or less is considered normal and a score of 13 or more suggest significant depression.

The EPDS takes 5 minutes or less to be completed and is easily accessible online at no cost. The tool is written at the 5th grade reading level, yet is effective in identifying women of all socioeconomic status⁽¹⁶⁾

IV) Postpartum Depression Screening Scale

The PDSS was developed by Beck⁽¹⁷⁾, It is a self-report, 35 items with Likert-type response scale divided into 7 conceptual domains: (a) anxiety/insecurity, (b) sleep/eating disturbance, (c) emotional liability, (d) loss of self-esteem, (e) guilt/shame, (f)

cognitive impairment, and (g) suicidal thoughts⁽¹⁸⁾. The scores range from 35 to 175; the scale has 5 symptoms for each domain, and the woman is asked to identify her degree of disagreement or agreement on the basis of her feelings over the last 2 weeks⁽¹⁵⁾. The PDSS takes 5 to 10 minutes to administer and is used during the postpartum period⁽¹⁶⁾.

V) The Short Explanatory Model

Interview

The SEMI was developed by Lloyed et al⁽¹⁹⁾, employs open-ended questions and is semi structured. It includes information related to; the subject's backgrounds, nature of the presenting problem, and help seeking behavior and modified by the researcher based on the available literature.

VI) Help Seeking Barriers

Questionnaire

This was developed by the researcher, based on the available literature. It was a semi-structured interview with open ended questions that are aiming to find out the barriers confronting women and preventing them from seeking medical advice.

V) Nurses ' Knowledge

Questionnaire

The researcher designed a self-administered questionnaire as pre and post follow up test tool to assess nurse's knowledge about the assessment and management of patients with PPD.

Content Validity and Reliability

Tools were reviewed by a panel of five experts in the field of Obstetrics and Gynecological Nursing and Psychiatric Nursing to test its content validity. Modifications were done accordingly based on their judgment. Reliability was done by Cronbach's Alpha Coefficient Test which revealed that each item of the utilized tools

consisted relatively homogeneous items.

Field of the work: The field study of this work was carried out on two phases:-

First phase: data collection took a period of 6 months, from the first of July 2014 to the end of November 2014. After getting the official permission the pilot testing of the study tools was done and analyzed. The researcher started the data collection for 3-5 days per week in the morning from 8 AM to 1 PM during the 6 months. The data collection was done according to the following phases:-

1-Interviewing Phase:

The first tool was applied to collect women's data such as socio-demographic characteristics, obstetric profile, and previous medical and surgical history. Data related to PPD scales (PDPI, EDPS, PDSS ,SEMI) and help seeking barriers questionnaire were all collected and a code number was given to every woman to ensure confidentiality. The interview took nearly 15-20 minutes for every woman to complete the designed forms.

2-The Second part which is the

education program, its construction included 4 phases:

1-planning phase:

The researcher prepared the contents and methods according to the objectives and guidelines. It was reviewed by experts in the same specialty. A pretest self-administered questionnaire was prepared and distributed to nurses, and then the same questionnaire was used after the program implementation for post assessment (posttest).

2-Program development phase:

A self learning booklet was prepared by the researcher and its

contents was validated and then distributed to nurses to be used as a guide for self learning to upgrade their knowledge and practice pertaining to the assessment and prevention of postpartum depression. The theoretical and training session were conducted together with a demonstration and re-demonstration for each assessment tool using the role playing technique.

The program consisted of 3 sessions and the total time of the sessions was 2 hours. The number of nurses in each session was only 7 nurses in order to facilitate the learning process and allow every nurse to participate in the discussion as well as ensure adequate supervision. Sessions were conducted for nurses during the morning or the afternoon shift. The session started at 11AM. and end at 1 PM. or started at 12PM. and end at 2 PM. It was the most suitable time for the nurses after they have completed their duties.

At the beginning of the first session an orientation to the program was done, this include; the rationale, purpose, importance of the problem, contents, activities, time and location were elaborated in order to establish good communication. The program was conducted in Arabic language to be easily understood. The sessions were conducted in the postnatal unit utilizing the available resources.

The general objective; of the program was to upgrade nurse's knowledge pertaining to the assessment and prevention of postpartum depression.

The specific objectives; at the end of the sessions, the nurses should be able to;

- Be aware of the problem of PPD, risk factors, symptoms, differential diagnosis, complications and its prevention and management.

3- Implementation phase

The researcher explained the purpose of the educational program to the nurses, and obtained their verbal

agreement. The pretest knowledge questionnaire was distributed and self administered. Observation was done for every nurse three times and the average was obtained.

1- Pretest

2- Post-test (immediately after implementation of the program)

3- Follow-up (after one month)

The following teaching methods were used: lecture, discussion, demonstration and re-demonstration. Suitable teaching aids were utilized as; pictures, educational model and a learning guide were prepared and distributed to all participants.

4- Program evaluation phase:

All nurses were tested using the same format of the pretest "Posttest and follow up test" and the result was obtained using the above mentioned score.

Pilot study:

A pilot study was conducted on a sample of 10% of cases who were not included in the total sample size. It was done to test the study tools in terms of clarity and feasibility, and the time required to be applied and to assess the degree of nurses' understanding of the questionnaire and acceptance to be involved in the study. Following the pilot study the questionnaire was reconstructed and necessary modifications were done to reach the final form.

Administrative & Ethical considerations.

All ethical issues were taken into consideration during all phases of the study; the research maintained an anonymity and confidentiality of the subjects. The researcher introduced herself to the women and briefly explained the nature and aim of the study to every woman before participation and women were enrolled voluntarily after the written informed consent process. Women were also

assured that the information obtained during the study will be confidential and used for the research purpose only.

Statistical analysis:

After data was collected, it was revised, coded and fed to statistical software SPSS (statistical package for social science) version 20. The given graphs were constructed using Microsoft excel software. All statistical analysis was done using two tailed tests and alpha error P value less than or equal to 0.05 was considered to be statistically significant. Categorical data were expressed in the form of frequencies and percentages, mean and standard deviation (SD). Pearson's chi square test, Mont Carlo exact and Fishers exact test, Mc-Nemar test were also used.

Results:

Figure 1 illustrates that the majority of puerperal women (84.5%) were suffering from mild PND, while less than one fifth (15.5%) were exposed to moderate PND.

Table (1) reveals that the range of women's age in the two studied groups was very close with a mean of age partially similar (27.1 ± 4.6 and 27.3 ± 4.6 respectively).. Meanwhile, they were more likely to be housewives (83.0% vs. 72.0% respectively) and resident of the urban areas (70.5% vs. 30.5% respectively). Differences observed are statistically significant ($p= 0.008$ and 0.001 respectively). As for the income, the same table points to statistically significant difference in monthly income between the two groups ($p=0.000$), where women in the PND group had more insufficient income compared to the control group (17.5% vs. 5.0% respectively).

Tables (2) describe Edinburgh postnatal depression scale (EPSC) among the studied sample. As manifested, the vast majority (90.5%) of women in the study group felt

anxious or worried for no good reason most and all times compared to the control group (14.5%) with statistical significant difference ($p=0.001$). Meanwhile, nearly half of them they were always blaming themselves unnecessarily when things went wrong and had sense of scared or panicky for no good reason compared to women in the control group (49.0% & 48.5% vs. 19.0% & 6.0% respectively). Differences observed are statistically significant ($p=0.001$).

Table (3) points to nearly half of women in the study group agreed that they had the feeling of being irritable and of difficulty in focusing on a task compared to the control group (55.5% & 46.0% vs. 0.0% & 0.0 % respectively), with statistical significant difference ($p=0.001$). Moreover, 40.0% vs. 1.0% of them agreed that they lost their appetite and have thought that death seemed like the only way out of this living nightmare (28.0% vs. 4.5% respectively), with statistical significant difference ($p=0.000$)

Table (4) reveals that women in the PND group had lesser proportion of self-satisfaction, self-proudness, compared to the control group (77.0% & 72.5% vs. 90.0% & 85.5% respectively).

Table (5) indicates that women in the PND were more likely to experience depression during their antenatal period compared to the control group (78.0% & 36.5% respectively). The same table shows that the vast majority of women in the PND group (94.0%) were exposed to antenatal anxiety compared to 47.0% in the control group, with statistical significant difference ($p=0.001^*$). Meanwhile, more mean duration of antenatal depression was noticed in PND group than in control group (5.4 ± 2.8 vs. 3.6 ± 1.6 respectively) with statistical significant difference ($p=0.001^*$).

Table (6) clear that nearly two thirds (57.5%) of women in the PND

were exposed to financial problems compared to 26.0% in the control group. Moreover, they also reported other life stressors such as; the presence of death and serious illness in their families, or the experience of being exposed to unemployment (57.0%, 37.5% & 79.5% vs. 36.0%, 24.0% & 64.0% respectively).

Table (7) revealed that 57.5% obtain help in contrast to 42.4% who did not ask for medical advice. The main helper was the family, followed by traditional healer and an equal percentage of health workers and friends (18.8%). Help seeking barriers were due to women denial, and their inability to disclose their feeling to husbands and friends (52.0% and 55.7% respectively). Meanwhile, a great number 47 (40.8%) had less awareness about the problem and felt that they could be unfit mothers and showed fear of stigma or that their babies may be taken away from them (30.4%, 1.7% , 7.8% and 0.9% respectively).

Table (8) shows that more nurses (75.0%) were able "after implementation of the study intervention" to provide care for women suffered from symptoms denoting PND.

Of those the majority were able to listen to women, giving recommendations and explaining to them how to cope with their problem (86.7% and 100.0% respectively). Meanwhile, lesser proportion (66.7%) were noticed at the post-test facing and counseling women about health seeking barriers and referring them to psychiatrist (40.0%), but with a statistical significant differences ($p=0.001^*$)

Post-partum depression, a cause of significant psychiatric morbidity in mothers (Patel et al)⁽²⁰⁾ and malnutrition in infants (Anoop et al)⁽²¹⁾, has been extensively discussed in the international literature (Cline and Decker)⁽²²⁾. It is generally considered a biomedical psychiatric category,

attributed to genetic, hormonal and biological factors and treated with antidepressant medication

Postpartum depression (PPD) is a common, potentially disabling, and in some cases, life-threatening condition with a prevalence of 17.9 % in Egypt⁽¹¹⁾. Fortunately, it is readily detectable in routine practice and is amenable to treatment by a wide variety of modalities that are effective for treating non puerperal major depression. Postpartum depression screening done by the health provider and maternity nurses can improve case identification and can lead to better clinical outcomes, although many health seeking barriers to receiving adequate PPD treatment must often be overcome (William et al.)⁽¹²⁾.

The present study finding reveals that, the mother's age is a predictor of PND where, the older the mother the lower their levels of PND. This could be potentially attributed to increased levels of maturity and life experience. Older mothers may be able to cope with the emotions associated with motherhood more so than younger women. These findings are consistent with other studies (Vernon et al)⁽²³⁾. Meanwhile, the current study indicates that the mean age of women in the PND group was 27.1 ± 4.6 years; this finding is consistent with Petrosyan et al⁽²⁴⁾ in Yerevan, Armenia who found that the mean age for puerperal women in the PND group was 27 years. This may be attributed to younger age of marriage in Egyptian society especially in rural areas. Wolffe et al⁽²⁵⁾ considered young age as a risk factor for PND, however,^(26,27) O' Hara & Swain, and Beck, did not show the same results.

In the current study, urban residences were more prevalent in the PND group than the control group with statistical significant difference ($P=0.001^*$). This is matching with Ibrahim et al⁽²⁸⁾ study in Sohag- Egypt who found that the majority of women in the PND group (86.2%) were living

in urban areas. Conversely, Villegas et al^(29,11) and Salah et al in Mansoura-Egypt, have emphasized that rural residences were more prevalent in the PND group than in the control group with a highly statistically significant difference ($\chi^2 = 48.632$; $P = 0.001$).

There was significant association between the PND and job status in the current study, where housewives were more likely to have PND ($P = 0.008$). This supports the finding of Al-Shami et al⁽³⁰⁾ at Riyadh Saudi-Arabia and Mohamed et al⁽³¹⁾ in Sohage-Egypt who found that housewives were more at risk of PND. However, Ibrahim et al⁽²⁸⁾ failed to find an association between the job status and PND.

The discrepancies between the above mentioned findings might be due to the religious and cultural restriction that prevents women from working outside their homes, they experience a great responsibility and less quality of life caused by taking care of their children, assuming the role of both males and females in the family, since males are always working outside the country.

The present study finding suggests that family income is a predictor for PND, where women in the PND group had more insufficient income compared to the control group ($P = 0.001^*$). This is consistent with Ibrahim et al⁽²⁸⁾ who found that the average monthly income per couple was less than 500 pounds in the PND group (85.5% vs. 14.5% respectively).

Saleh et al⁽¹¹⁾ reported that socioeconomic status was significantly correlated with PPD ($r = 0.758$; $P < 0.001$) and can be considered as predictor for PPD ($B = -0.225$; $t = -2.694$; $P < 0.01$). This was consistent with Chandra, (2004)⁽³²⁾ who highlighted the importance of social factors, especially poverty, as a risk factor for antenatal depression and PPD.

On the assessment of anxiety state using the Edinburgh Postnatal Depression Scale, the researcher found a very high significant levels of anxiety for no good reason in

comparison with the control group ($p = 0.001$). Meanwhile, nearly half of them were always unnecessarily blaming themselves when things went wrong, had sense of scared or panicky for no good reason and the sense of overload, insomnia, and crying most or all the time. As well as they felt sad or miserable and having always the thought of harming themselves

This finding is partially in agreement with Ibrahim et al⁽²⁸⁾ who found that the most frequent psychological problem was the feeling that woman in the PND group always blame herself when things went wrong and have always the thought of harming herself.

Antenatal anxiety was significantly more common among women with PND. This result is somewhat in line with Nimisha⁽³³⁾ who found that feeling tense during pregnancy was also identified as a predictor of post-partum depression. Moreover, Mott et al⁽³⁴⁾, who conducted a study about depression and anxiety among postpartum and adoptive mothers in the USA and Yamamoto⁽³⁵⁾ who had screened mental health problems and influencing factors in Japanese women 4 months after delivery had reported that, high level of anxiety during pregnancy is a predictive of post-partum depression.

Postnatal depression was greatly observed among mothers with low social support, low self-esteem and life stress. This finding is congruent with the results of Kozinszky and Mohamed^(36,31). They reported that social support or chronic and acute stress factors play a key role in the development of postnatal psychological distress.

In this respect, Webster et al⁽³⁷⁾ had investigated the impact of social support on quality of life and depression following childbirth in Australia. Also, Mustaffa et al⁽³⁸⁾ had studied the influence of social support during pre-natal and post-natal stage on maternal depression and mental

well-being in Malaysia. All the above mentioned studies had concluded that social support was positively correlated with mothers' postnatal physical and psychological health and the reduction of PND.

The present study clearly pointed out that more than two fifths of the respondents did not ask for medical advice and the rest sought help (professional or non-professional) for their depressive symptoms. This finding is similar to that of (Bina)^(39,40) in Israel, and Edge & McKian who agreed that stressed women's self-coping and turning to family and friends not as a first resort but rather only when their symptoms worsened but unlikely most of them did not turn to professional help for their PPD.

Concerning nurses practice with woman having PND, the present study shows that more nurses were able "after implementation of the study intervention" to provide care for women suffered from symptoms denoting PND. Of those the majority were able to listen to women, giving recommendations, clear up their myths and explaining to them how to cope with their problem. Meanwhile, lesser proportion were noticed at the post-test facing and counseling women about health seeking barriers and referring them to the psychiatrist.

These findings are consistent with Isik and Bilgili⁽⁴¹⁾ who found that 71.5% of the nurses and midwives stated that they did not encounter anyone with PND. Those who have experience with PND cases did the following things: Firstly, referring to psychiatrist (51.1%), talking with the spouse (47.6%) listening and making recommendations (39.5%). The clinical implication of the above mentioned finding will assist nurses in addressing the problem of PND and its help seeking barriers and in assisting with the development of prevention and treatment interventions that are in accord with maternal preferences.

CONCLUSION

Based on the study present findings, it can be concluded that, post natal depression among the study subject was associated with low educational attainment, financial difficulties, and unsuccessful breast feeding. Factors predicting of postpartum depression include, the feeling of depression and anxiety during pregnancy, lack of social support, low self-esteem and stressful life events. The most common mentioned help seeking barriers were lack of knowledge about the postpartum depression and tendency to minimize symptoms. Implementation of an educational program was associated with improvement in nurses knowledge regarding PND.

RECOMMENDATIONS

Based on the present study findings, the following recommendations were suggested:

- Nurses need to keep abreast of current knowledge and researches to be knowledgeable about postpartum depression and to ensure thorough assessments. They should also know about resources in their communities for treating postpartum depression to promote appropriate referrals.
- Continuing in-service training program for all nurses working in maternity departments and primary health care centers about life stressors which has effect on reproductive health and how family and mother can manage.
- Mass media could help in enlightening puerperal women about factors predisposing to PND and how to cope with them.
- Replication of, the present study on a large scale including all the available districts in sharkia governorate to validate the study finding.

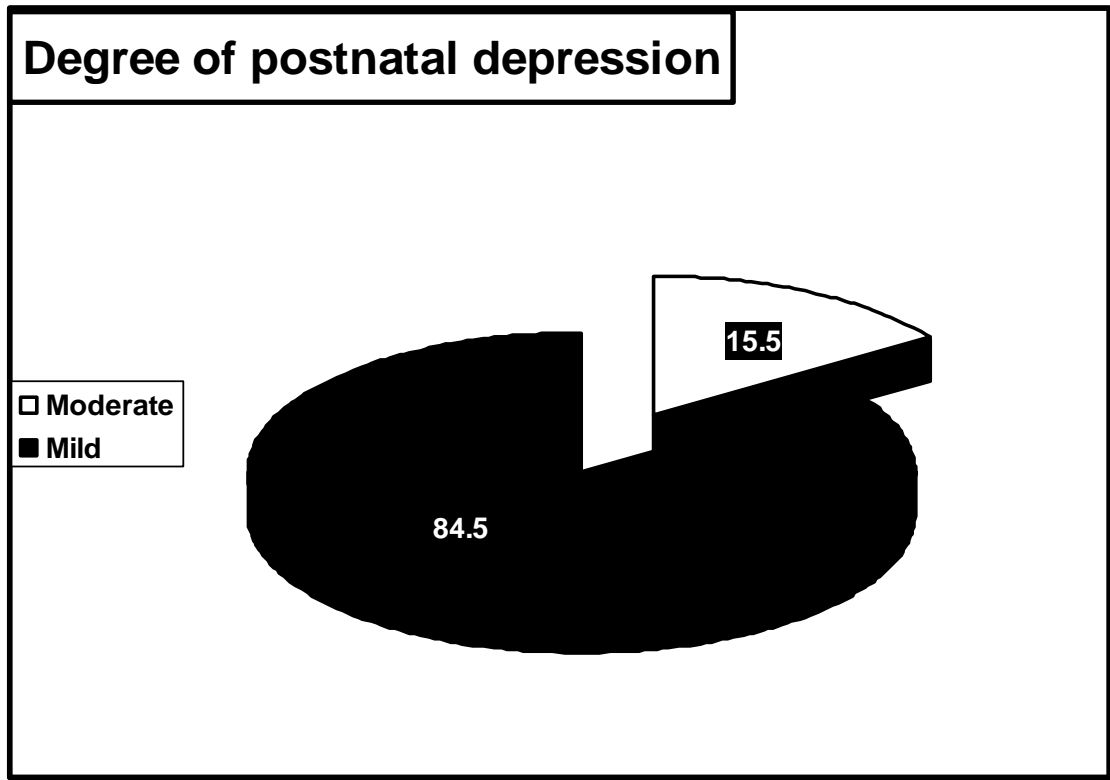


Figure 1: Degree of Postnatal Depression among the Studied Subjects (n=200).

Table 1. Distribution of the Studied Women According to their Socio-demographic Characteristics (n=400)

Socio demographic data	Groups				X ² (P)
	Study n=200		Control n=200		
	No	%	No	%	
Age (years)					1.5 (0.483)
▪ <25	65	32.5	54	27.0	
▪ 25-	83	41.5	89	44.5	
▪ 30-40	52	26.0	57	28.5	
▪ Range	18-40		19-40		
▪ Mean ±SD	27.1± 4.6		27.3 ± 4.6		
Residence					47.1 (0.001)*
▪ urban	141	70.5	61	30.5	
▪ Rural	59	29.5	139	69.5	
Occupation					6.9 (0.008)*
▪ House wife	166	83.0	144	72.0	
▪ Working	34	17.0	56	28.0	
Monthly income					21.6 (0.001)*
Indebt	48	24.0	92	46.0	
Just meet life expenses	117	58.5	98	49.0	
Insufficient	35	17.5	10	5.0	

^: P value based on Mont Carlo exact probability *P < 0.05 (significan

Table 2 : Distribution of the Studied Women According to Edinburgh Postnatal Depression Scale (n=400).

Edinburgh postnatal depression scale		Group				MCP
		Cases		Controls		
		No	%	No	%	
Able to laugh and see the funny side of things	Never	27	13.5	13	6.5	0.003*
	Sometimes	116	58.0	97	48.5	
	Most and all times	57	28.5	87	45.0	
look forward with enjoyment to things	Never	23	11.5	12	6.0	0.005*
	Sometimes	113	56.5	100	50.0	
	Most and all times	64	32.0	88	44.0	
Blamed herself unnecessarily when things went wrong	Never	28	14.0	57	28.5	0.001*
	Sometimes	32	16.0	105	52.5	
	Most and all times	140	70.0	38	19.0	
Feeling of being Anxious or Worried for no Good Reason.	Never	0	0.0	56	28.0	0.001*
	Sometimes	19	9.5	115	57.5	
	Most and all of times	181	90.5	29	14.5	
Sense of scared or panicky for no good reason	Never	16	8.0	87	43.5	0.001*
	Sometimes	27	13.5	101	50.5	
	Most and all of times	157	78.5	12	6.0	

* P < 0.05 (significant)

MCP: P value based on Mont Carlo exact probability

Table 3. Distribution of the Studied Women According to postpartum depression screening scale

PDSS items		Group				MCP
		Cases		Controls		
		No	%	No	%	
Felt like was not the mother she wanted to be	Disagree	100	50.0	176	88.0	0.001*
	Neutral	60	30.0	19	9.5	
	Agree	40	20.0	5	2.5	
Have thought that death seemed like the only way out of this living nightmare	Disagree	97	48.5	178	89.0	0.001*
	Neutral	47	23.5	13	6.5	
	Agree	56	28.0	9	4.5	
Lost her appetite	Disagree	25	12.5	163	81.5	0.001*
	Neutral	95	47.5	35	17.5	
	Agree	80	40.0	2	1.0	
Have been very irritable	Disagree	25	12.5	165	82.5	0.001*
	Neutral	64	32.0	35	17.5	
	Agree	111	55.5	0	0.0	
Had difficulty focusing on a task	Disagree	16	8.0	126	63.0	0.001*
	Neutral	92	46.0	74	37.0	

Agree 92 46.0 0 0.0

* P < 0.05 (significant)

MCP: P value based on Mont Carlo exact probability

Table 4. Distribution of the Studied Women According to their Self Esteem during Pregnancy (n=400).

Self Esteem	Groups				X ² (P)
	Study n=200		Control n=200		
	No	%	No	%	
Feeling of Self satisfaction					
▪ yes	154	77.0	180	90.0	12.3 (0.001)*
▪ no	46	23.0	20	10.0	
Feeling of Self proudness					
▪ yes	145	72.5	171	85.5	10.2 (0.001)*
▪ no	55	27.5	29	14.5	

* P < 0.05 (significant)

Table 5. Distribution of the Studied Women According to Occurrence of Prenatal Depression & anxiety during Pregnancy

Prenatal Depression	Groups				MCP
	Study n=200		Control n=200		
	No	%	No	%	
Exposure to antenatal depression					
▪ Yes	156	78.0	73	36.5	0.001*
▪ No	44	22.0	127	63.5	
Being anxious during pregnancy					
▪ Yes	188	94.0	94	47.0	0.001*
▪ No	12	6.0	106	53.0	
Duration of AND(months)					
▪ Range	3-9 5.4 ± 2.8		3-9 3.6 ± 1.6		0.001*

- Mean \pm SD(moths)

MCP: P value based on Mont Carlo exact probability

* P < 0.05 (significant)

Table 6: Distribution of the Studied Women According to the Life Stresses during Pregnancy

Life stressors	Groups				X ² (P)
	Study n=200		Control n=200		
	No	%	No	%	
Financial Problems					
Yes	115	57.5	52	26.0	0.001*
No	85	42.5	148	74.0	
Death in the family					
Yes	114	57.0	72	36.0	0.001*
No	86	43.0	128	64.0	
Unemployment					
Yes	158	79.0	128	64.0	0.001*
No	42	21.0	72	36.0	

- P < 0.05 (significan

Table 7: Distribution of the Studied Women According to Help Seeking Barriers

Help seeking barriers(n=200)	No	%
Obtain help for depression		
▪ Yes	85	42.5
▪ No	115	57.5
Sources of helping women (n=85)#		
▪ Family	67	78.8
▪ Traditional healer	64	74.5
Reasons for not seeking help? (n=115)#		
▪ Unable to disclose their feelings to partners, family	64	55.7
▪ Women denied that they were experiencing depression and tendency to minimize symptoms is a normal part of motherhood	60	52.2
▪ Lack of knowledge about postpartum depression	35	30.4
▪ Lack of transportation, cost of the care and child care (too busy)	12	10.4
▪ Fear of stigma and sense of shame	9	7.8
▪ Fear of being unfit mothers	2	1.7
▪ Fear from their baby may be taken away from them	1	0.9

Table 8: Distribution of the Studied Nurses According to Their Practice with Patients Having PND (n=20).

Variables	Provide care for women suffered from symptoms denoting PND (n=20)						Mc P Pre-post	Mc P Pre-FU
	Pre		Post(immediately after the program)		FU(one month)			
	No.	%	No.	%	No.	%		
Meeting women suffered from symptoms denoting PND								
▪ Yes	10	50.0	15	75.0	11	55.0	0.966	0.998
▪ No	10	50.0	5	25.0	9	45.0		
Actions taken when confronting this woman #								
Listening and giving recommendations								
Correct answer	5	50.0	13	86.7	7	63.7		
Talking with the family members								
Correct answer	2	20.0	7	46.7	4	36.7	0.001*	0.050*
Explaining to the women how to cope with her problem								
Correct answer	2	20.0	15	100.0	8	72.7		

Facing and counseling woman about health seeking barriers

Correct answer	3	30.0	10	66.7	4	36.7
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Refer women to the psychiatrist

Correct answer	2	20.0	6	40.0	4	36.7
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(more than one answer)

^{Mc} P: Mc-Nemar test

* P (significant)

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