RESEARCH ARTICLE

PREVALENCE AND FACTORS ASSOCIATED WITH DEPRESSIVE SYMPTOMS AMONG POST-PARTUM MOTHERS IN JEDDAH.

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Abstract

Background: Pregnancy and delivery are big events in a woman’s life, it could associated with physiological and psychological problems lead to postpartum depression (PPD) . This study aimed to assess the prevalence rate of post-partum depression symptom among post-partum mother in Jeddah, Saudi Arabia.

Method: This cross sectional study was carried out at five health care centers in Jeddah, Saudi Arabia during the period from January to December 2016, among post-partum mother who admitted to obstetrics & gynecology units. A semi structure questionnaire was used to collect the data.

Result: A total of 512 postpartum females were included in this study, (68.8%) were from group age 25-40 46.5% were housewives and 66.6% had a university education, 65.6% were from group monthly income more than 8000 SR, 25.0% reported medical problem, 43.9% planned for pregnancy. The EPDS mean score was 12.7±5.8 rang (0-30), there was significant association between PPD and the following sociodemographic and medical characteristics (maternal age, maternal education, maternal occupation, monthly income, medical problems, planning pregnancy and previous psychological problems).

Conclusion: The current study showed that advanced age, lower educational level for both mother and father, medical problems were risk factors. Further studies need to be conduct to investigate the relation between PPD and other risk factors in Saudi community.

Key words:- Postpartum depression, risk factors.

Introduction:

Pregnancy and delivery are big events in a woman’s life, it is a blessing and joyful experience in normal situation, however the opposite can happen due to the fact that childbirth could associated with physiological and psychological problems lead to postpartum depression (PPD) , which is defined as “ in the Diagnostic and Statistical Manual for Mental Disorders as major depression with postpartum onset with episodes of depression beginning within 4 weeks of giving birth”. (1) and also as "a non-psychotic depressive state that begins in the postpartum period, after the child birth, it is a mood disorder that can occur at any time during the first year after delivery " . (2) Mental health problem are major public health issue for women in reproductive age in both developing and developed countries, (2) where several studies reported postpartum depression as the most common

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psychological complications among childbearing women, with prevalence rate between 10-20% (1,3,4), this variety in the prevalence due to several factors: time of survey, population characteristics, culture issues. (1) In the first day after delivery mother will be concentrated on her baby and excited about it but after a few days her mood go down and she may feel sad, depressed and had insomnia that we called a baby blouse and it begin from the early days after birth to two weeks later and it would may develop to a postpartum depression, (3,5). The main characteristics of PPD are: tearfulness, anxiety, emotional stress, guilty feelings, loss of appetite, suicidal thoughts, sleep disorders, concentration and memory problems, exhaustion, and irritability, as well as feelings of weakness and incompetence to deal with the baby. (1,3,4).

The post-partum depression is a relatively common disorders with onset between one and six months after delivery and May last six month or longer, (4) and can affects the health of both the mother (poor life quality and death) as well as the child (malnutrition, developmental delay, poor growth, and damaged mother-infant relation). (1,3,4,6)

There are several risk factors associated with PPD: Family history of previous depressive illness or other psychiatric in the patient or her relatives, life stress, (4) labor pain (1) inadequate antenatal care, socio-economic status, (7) chronic illness, cesarean section, (post partum), nutritional deficiency (3), poor social support, (vigod) violence during pregnancy (7), in addition there are few risk factors seen only in developed countries: multiparity, baby gender and multiple births (2,3).

This study aimed to assess the prevalence rate of post-partum depression symptom among post-partum mother in Jeddah, Saudi Arabia and to identify the risk factors associate with PPD in order to help mothers avoiding them.

Method:
This cross sectional study was carried out at five health care centers in Jeddah, Saudi Arabia during the period from January to December 2016, among post-partum mother who admitted to obstetrics & gynecology units. A semi-structure questionnaire was used to collect the data from the mothers, where it divided to three parts: first demographic data (age, education level, occupation and monthly income), second pregnancy and delivery characteristics (delivery place, postnatal care service level, delivery mode, planning pregnancy, labor duration, abortion, gravity of parity, body weight and parity, baby health, medical problem during pregnancy, complications, surgical history, depression history, family history) and the third part is the Edinburgh Postnatal Depression Scale which consists of 10 questions with 4 points scale (8). The data collected was analyzed using SPSS version 20 statistical software. Mean and standard deviations (minimum and maximum) were used to presented parametric data while number (percentage) were used to presented non-parametric data. Comparison for categories variables (sedation drugs and delirium presentation) was done using Chi-square test. Statistically significance was considered at the 0.05 level and extreme significant at the 0.0001 level.

Result:
A total of 512 postpartum females who completed the demographic, obstetric variables section and the EPDS questionnaire were included in this study. The majority of them (68.8%) were from group age 25-40 and 19.9% were less than 25 years, 73.4% were Saudi. The females who participated in the study included housewives (238, 46.5%), those employed outside the home (205, 40.0%), those with a university education or higher (341, 66.6%), and those who attend high school education (126, 33.6%). The majority of the participants (90.8%) were non-smokers and (65.6%) from group monthly income more than 8000 SR, more than two third reported that their husband were employed (68.8%) with university degree or higher (69.9%). (Table 1)

Out of the 512 postpartum females 128 (25.0%) reported medical problem, 40 (7.8%) reported Previous psychological problems and 143 (27.9%) reported family history of PPD. (Table 2)

Out of the 512 postpartum females 225 (43.9%) planned for pregnancy, 190 (37.1%) reported medical problems during pregnancy, those who had Marital problems numbered 99 (68.3%), those who suffered from depression during last pregnancy at least for one semesters numbered 314 (61.3%). Out of the 512 postpartum females 368 (71.9%) delivered in private hospital and 136 (26.6%) delivered in governmental hospital, those who spent Puerperal duration in her family house numbered 215 (42%), most of the female delivered Spontaneously and from them only 93 (25.8%) received epidural analgesia, 407 (79.5%) reported that baby gender not as they wish, 102 (19.9%) reported medical problems during delivery and 91 (178%) had complications after delivery. Half of the
women (253-50.4%) had baby girl, 252 (49.2%) had baby boy and 2 (0.4%) had both, only 15 (2.9%) baby reported medical problem, 46.1% reported both kind of feeding. (Tables 3,4&5)

The EPDS mean score was 12.7±5.8 rang (0-30) and was divided into two categories with cut off > 13 , of the 512 mothers, 257 (50.5%) had depressive symptoms (EPDS score > 13), and 255 (49.5%) did not have depressive symptoms (EPDS scores ≤13). (Table 6)

The results showed significant association between PPD and the following sociodemographic and medical characteristics (maternal age, maternal education, maternal occupation, monthly income, husband occupation and education level, medical problems, baby health, planning pregnancy, Medical problem during pregnancy and delivery, complication and semester depression, family history of PPD and previous psychological problems) where advanced age, lower level of education, working mother, lower monthly income, husband level of education, working husband, positive medical problems before-during pregnancy and during and after delivery, positive family history of PPD and previous psychological problems and unplanning pregnancy showed higher scores in EPDS (p=0.02, p<0.0001, p<0.0001, p<0.0001, p<0.0001, p=0.04, p=0.03, p=0.03, p=0.04, p=0.01, p=0.04, p=0.01 and p=0.006) respectively. (Table 7)

Discussion:
Several studies were conduct about the prevalence of PPD and the associated risk factors, where PPD had big influence on the baby emotional and social development and this influence continue during teenage and adult years. (3,9) In industrial countries there is rapid screening for PPD so an early intervention can be done to decrease the negative effects of PPD on mothers and babies lives. (3,10,11) The current study showed that almost the half of participants mothers (49.5%) had depressive symptoms during post-partum period. Previous studies in Nepal and Saudi Arabia reported the prevalence of PPD 30-33% with cut off score ≥10, (2,3) also the results from Pakistan and India studies the prevalence was between 11%-40%, while in other studies with cut off ≥12 the prevalence was 6%-12%. (2,12,13) and 15.4% in Turkish study with cut off ≥13,(7) this Varity in the prevalence rate could be due to the difference cut off, multi-cultural and multi-social factors, sample size and methods. (2,3,7,12,14,15)

The findings of current study showed that mother aged more than 40 years are more likely to develop PPD than younger mother, similar results were found in Singapore Nepal and Canada studies the authors reported high prevalence of PPD among women aged 35-40, (1,2,16) in contrast in Turkey and Canada studies the authors reported high prevalence of PPD among young mother, (2,7,17,18,19) while in Saudi Arabia study the association was between older and younger age. (3)

Several studies investigated the association between PPD occurrence and sociodemographic data (mother's education and occupation, monthly income and father's education and occupation), (6,20-26) where the results showed contradictory evidence (1,2,3,7), in Nepal, Singapore, turkey and Saudi Arabia study there was no association between mother's education level, occupation and low monthly income and PPD. (1,2,3,7) while in other studies there was positive association between PPD and mother's lower education, being a housewife, and lower monthly income, (2,3,7,27-32) also in 2007 study the authors reported significant association between lower partner education and occupation and PPD. (7,33) the current study showed consistent with previous study regarding mother low educational level and controversial result regarding mother occupation and monthly income, where the high prevalence of PPD was between working mothers and high monthly income.

The current study findings showed that any medical problems in any time before or during pregnancy, during or after delivery had a strong effect on developing PPD (p=0.03p=0.004.p=0.03,p=0.01), this consistent with previous studies, (1-7, 34-36) in Saudi Arabia study the authors reported significant association between anemia during pregnancy and PPD(3), in Singapore study there was significant association between medical problem during pregnancy such as GDM and hypertension and PPD. (1,37,38)

In addition to that the current studies confirmed previous studies findings that stressful life such as family problem, week relation with husband or his family, previous psychological problems specially anxiety, exhaustion, pregnancy depression, tearful and lake of sleep, and family history of PPD either first degree relative or second degree relative, (1-7) in Nepal studies the authors reported that there is relation between PPD and early contractions during pregnancy and maternity blues after seven days from delivery, (2,39) in Turkey study the authors confirmed the relation between PPD and antepartum depressive symptoms which assessed byHADS-D, and they reported that thinking in committing suicidal during pregnancy is a high risk factors in developing PPD (odds ratio 6.99, CI 2.08–
23.49). (7,40,41) similar results were found in Singapore study where the authors reported high prevalence of PPD among women with previous psychological problems. (1,37,38)

Regarding planning pregnancy and baby gender, the results of the current study showed significant association between developing PPD and unplanned pregnancy (p=0.01), this consistent with Turkey study. (7)

Pain during delivery considered as the most severe pain could be experience by some women during their entire life, it is not life-threatening, however it has association with the risk of development post-traumatic stress disorder, mood disorders, weakness of cognitive function and causing post-partum depression. Epidural analgesia was addressed in several studies as an effective way to reduce delivery pain and decreasing the incidence rate of PPD on the Edinburgh Postnatal Depression Scale (EPDS). The new guidelines recommended to use epidural analgesia when mothers ask if there is no medical contraindication, this use affected by several factors such as labor progress, mother condition and preferring. (1,42-44)In Singapore study the authors reported significant association between the using of epidural analgesia and decreasing the score of Edinburgh Postnatal Depression Scale (P=0.0078), (1) similar result was found in Hiltunen et al study (odds ratio [OR] 0.25, 95% confidence interval [CI] 0.09–0.72), (45) and Ding T et al study (OR 0.32, 95% CI, 0.11–0.89, P = 0.029), (43) although the current study couldn't establish this relation.

There was no significant difference in the prevalence rate of PPD regarding mode of delivery, smoking and baby gender wishing.

### Table (1): Demographic data:

| Variables                   | N   | %   |
|-----------------------------|-----|-----|
| **Age**                     |     |     |
| Less than 25                | 102 | 19.9|
| 25-40                       | 342 | 66.8|
| More than 40                | 68  | 13.3|
| **nationality**             |     |     |
| Saudi                       | 376 | 73.4|
| Non Saudi                   | 136 | 26.6|
| **Education level**         |     |     |
| Postgraduate                | 34  | 6.6 |
| University degree           | 307 | 60.0|
| High school                 | 126 | 33.6|
| Intermediate                | 29  | 5.7 |
| Elementary or lower         | 16  | 3.1 |
| **Occupation**              |     |     |
| Student                     | 69  | 13.5|
| Employee                    | 205 | 40.0|
| House wife                  | 238 | 46.5|
| **Smoking**                 |     |     |
| Yes                         | 47  | 9.2 |
| No                          | 465 | 90.8|
| **Monthly income**          |     |     |
| Less than 5000              | 62  | 12.1|
| 5000-8000                   | 114 | 22.3|
| More than 8000              | 336 | 65.6|
| **Husband occupation**      |     |     |
| Employee                    | 352 | 68.8|
| Business man                | 134 | 26.1|
| Retired                     | 26  | 5.1 |
| **Husband education level** |     |     |
| University degree           | 336 | 65.6|
| Postgraduate                | 22  | 4.3 |
| High school                 | 109 | 21.3|
| Intermediate                | 29  | 5.7 |
| Elementary or lower         | 16  | 3.1 |
| **Variables**               |     |     |
| Mean± SD                    | 5.0±2.0 | (3.0-9.0) |
Table (2): Medical characteristics obstetrics (pregnancy and delivery) characteristics

| Variables                              | N  | %    |
|----------------------------------------|----|------|
| Medical problems                       |    |      |
| Yes                                    | 128| 25.0 |
| No                                     | 385| 75.0 |
| Specify                                |    |      |
| Diabetes                               | 21 | 16.4 |
| Hypertension                           | 27 | 21.1 |
| Hypothyroidism                         | 28 | 21.9 |
| Anemia                                 | 4  | 3.1  |
| Others                                 | 48 | 37.5 |
| Family history of PPD                  |    |      |
| Yes                                    | 143| 27.9 |
| No                                     | 369| 72.1 |
| Who                                    |    |      |
| Sister                                 | 76 | 51.4 |
| Mother                                 | 47 | 20.4 |
| Aunt                                   | 20 | 28.2 |
| Previous psychological problems        |    |      |
| Yes                                    | 40 | 7.8  |
| No                                     | 472| 92.2 |
| Specify                                |    |      |
| Depression                             | 10 | 25   |
| Tearful                                | 1  | 2.5  |
| Anxiety and uncomfortable              | 2  | 5    |
| Un mention                             | 27 | 67.5 |

Table (3): Obstetrics (pregnancy) characteristics

| Variables                              | N  | %    |
|----------------------------------------|----|------|
| Prenatal care level                    |    |      |
| Excellent                              | 166| 32.4 |
| Very good                              | 184| 36.0 |
| Good                                   | 99 | 19.3 |
| Average                                | 52 | 10.2 |
| Poor                                   | 11 | 2.1  |
| Planning pregnancy                     |    |      |
| Yes                                    | 225| 43.9 |
| No                                     | 276| 53.9 |
| Un mention                             | 11 | 2.1  |
| Medical problems during last pregnancy |    |      |
| Yes                                    | 190| 37.1 |
| No                                     | 322| 62.9 |
| Personal problems                      |    |      |
| Marital problems                       | 99 | 68.3 |
| Traffic accidents                      | 12 | 8.2  |
| Losing family member                   | 34 | 23.5 |
| Depression during current pregnancy    |    |      |
| First semester                         | 172| 33.5 |
| Second semester                        | 63 | 12.3 |
| Third semester                         | 64 | 12.5 |
| Two semesters                          | 9  | 1.8  |
| All semesters                          | 6  | 1.2  |
| No                                     | 198| 38.7 |
| Variables                              | Median quartile (25-75) |
| Gravidity                              | 2.0| 0.0-4.0 |
| Abortion                               | 1.0| 0.0-2.0 |
### Table (4): Obstetrics (delivery) characteristics

| Variables                                      | N   | %   |
|------------------------------------------------|-----|-----|
| **Birth place**                                |     |     |
| Governmental hospital                          | 136 | 26.6|
| Private hospital                               | 368 | 71.9|
| Polyclinics                                    | 4   | .8  |
| Home                                           | 4   | .8  |
| **Puerperal duration place**                   |     |     |
| My home                                        | 215 | 42.0|
| My husband family house                        | 21  | 4.1 |
| My family house                                | 276 | 53.9|
| **Postnatal care level**                       |     |     |
| Excellent                                      | 154 | 30.1|
| Very good                                      | 181 | 35.4|
| Good                                           | 110 | 21.5|
| Average                                        | 53  | 10.2|
| Poor                                           | 14  | 2.8 |
| **Delivery mode**                              |     |     |
| Spontaneous                                    | 360 | 70.3|
| Cesarean                                       | 152 | 29.7|
| **Epidural**                                   |     |     |
| Yes                                            | 93  | 25.8|
| No                                             | 267 | 74.2|
| **Gender baby did not consistent with the wishes of the family or you** | | |
| Yes                                            | 95  | 18.6|
| No                                             | 407 | 79.5|
| Un mention                                     | 10  | 2.0 |
| **Medical problems during last delivery**      |     |     |
| Yes                                            | 102 | 19.9|
| No                                             | 410 | 80.1|
| **Complication after last delivery**           |     |     |
| Yes                                            | 91  | 17.8|
| No                                             | 420 | 82.0|
| **Surgical history**                           |     |     |
| Yes                                            | 41  | 8.0 |
| No                                             | 471 | 92.0|
| **Labor duration**                             |     |     |
| Median                                         | 5.0 |     |
| quartile (25-75)                               |     |     |
| **Table (5): Neonatal section**                |     |     |
| **Variables**                                  |     |     |
| **Baby gender**                                |     |     |
| Boy                                            | 252 | 49.2|
| Girl                                           | 253 | 50.4|
| Both                                           | 2   | .4  |
| **Baby health**                                |     |     |
| Healthy                                        | 497 | 97.1|
| Sick                                           | 15  | 2.9 |
| Specify                                       | 2   | 14.3|
| Jaundice                                       | 6   | 42.7|
| Congenital anomalies                           | 7   | 43.0|
| Others                                         |     |     |
| **Feeding**                                    |     |     |
| Breastfeeding                                  | 186 | 36.3|
| Bottle                                         | 90  | 17.6|
| Both                                           | 236 | 46.1|
Table (6): EDP scale:

| Variables | Mean±SD | Rang (Min-Max) |
|-----------|---------|----------------|
| *I have been able to laugh and see the funny side of things | 1.0±0.8 | (0-3) |
| *I have looked forward with enjoyment to things | 1.0±0.8 | (0-3) |
| I have blamed myself unnecessarily when things went wrong | 1.6±0.9 | (0-3) |
| *I have been anxious or worried for no good reason | 1.5±0.9 | (0-3) |
| have felt scared or panicky for no very good reason | 1.5±0.9 | (0-3) |
| Things have been getting on top of me | 1.8±0.9 | (0-3) |
| I have been so unhappy that I have had difficulty sleeping | 1.7±1.0 | (0-3) |
| I have felt sad or miserable | 1.3±1.0 | (0-3) |
| I have been so unhappy that I have been crying | 1.3±1.0 | (0-3) |
| The thought of harming myself has occurred to me | 1.0±0.7 | (0-3) |
| Total | 12.7±5.8 | (0-30) |

Table (7): The relation between PPD and demographic data and medical characteristics:

| Variables | Mean±SD | P value |
|-----------|---------|---------|
| Age | | |
| Less than 25 | 11.71±6.29 | 0.02* |
| 25-40 | 12.76±5.69 | |
| More than 40 | 13.91±5.50 | |
| Education level | | |
| Postgraduate | 12.64±5.63 | 0.0001* |
| University degree | 12.83±5.98 | |
| High school | 14.00±5.38 | |
| Intermediate | 9.89±5.32 | |
| Elementary or lower | 14.81±4.44 | |
| Occupation | | |
| Student | 14.52±4.16 | 0.0001* |
| Employee | 13.26±5.46 | |
| House wife | 11.70±6.29 | |
| Monthly income | | |
| Less than 5000 | 9.85±7.52 | 0.0001* |
| 5000-8000 | 11.76±5.78 | |
| More than 8000 | 13.56±5.23 | |
| Husband educational level | | |
| University degree | 13.06±5.39 | 0.0001* |
| Postgraduate | 14.09±5.07 | |
| High school | 11.86±6.41 | |
| Intermediate | 9.31±6.00 | |
| Elementary or lower | 9.56±7.30 | |
| Husband occupation | | |
| Employee | 13.14±5.40 | 0.04* |
| Business man | 11.17±6.23 | |
| Retired | 11.95±7.64 | |
| Medical problem | | |
| Yes | 13.67±5.18 | 0.03* |
| No | 12.35±5.97 | |
| Medical problem during pregnancy | | |
| Yes | 13.68±5.02 | 0.004* |
| No | 12.15±6.16 | |
| Medical problem during delivery | | |
| Yes | 13.93±5.32 | 0.03* |
| No | 12.43±6.06 | |
| Complications | | |
| Yes | 14.13±5.03 | 0.01* |
| No | 12.41±5.92 | |
| Baby health | | |
| Healthy | 12.61±5.82 | 0.04* |
| Sick | 15.66±5.40 | |
| Planning pregnancy | | |
| Yes | 12.00±5.87 | 0.01* |
| No | 13.32±5.77 | |
| Family history of PPD | | |
| Yes | 13.89±5.16 | 0.004* |
| No | 12.24±6.00 | |
| Yes | 15.10±4.41 | 0.006* |
| No | 12.48±5.88 | |
| Semester depression | | |
| 1st | 14.63±5.10 | 0.03* |
| 2nd | 13.96±4.52 | |
Conclusion:
This study highlighted the high prevalence rate of PPD symptoms. Whenever the early detection of the risk factors for PPD, the easier for the doctor to intervene to treat and remedy it and prevent it from getting worse. The current study showed that advanced age, lower educational level for both mother and father were risk factors, however there are many other risk factors couldn’t be detect in the current study. Further studies need to be conduct to investigate the relation between PPD and other risk factors in Saudi community, more awareness-camping need to be held to raise the awareness about PPD among mothers and community, also psychiatrist and social worker should attend a postnatal care unit on a regular base to talk with mothers, advise them and help them in facing their fear.

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