Nazim R, et al., J Community Med Public Health Care 2020, 7: 073
DOI: 10.24966/CMPH-1978/100073

HSOA Journal of Community Medicine and Public Health Care

Research Article

Postnatal Depression and Associated Factors among Puerperal Women in Lahore City, Pakistan: Analytical Cross-Sectional Study

Rabia Nazim[1]*, Shoaib Muhammad[2], Khunsa Junaid[3], Hassan Ali[1] and Khadija Tahira[1]

[1]Department of Public Health, Institute of Social and Cultural Studies, University of Punjab, Lahore 75500, Pakistan

[2]Department of Urology, Gulab Devi Hospital Lahore, 75500, Pakistan

[3]Department of Community Medicine, King Edward Medical University, Lahore 75500, Pakistan

Abstract

Background: Post-Natal Depression (PND) is an emerging psychiatric issue and a devastating public health problem due to associated morbidity, as it not only effects postnatal lady but her marital relationship, new-born, mother-infant bonding, making infant vulnerable to psychiatric issues in future. The aim of this research was to find frequency of depression and their associated risk factors which play a role in onset or prevention or decreasing severity of Post-natal Depression.

Methods: A descriptive cross-sectional study was conducted in Lahore City. The sample size was 155 women who were in post-partum period from four weeks to one year. Sampling technique was "non-probability convenient sampling". The pre-validated Edinburg Post-natal depression scale was used to detect and categorize the severity of depression. Data was assessed by SPSS version 24. All variables having p-value less than 0.05 were considered significant.

Results: Out of 155 participants 49 (31%) were found to be depressed. The mean age of the sample was 29.37 years (SD=4.237) and range of 20-45 years old. All women in sample were married. It was found that the significant risk factors for depression were the demographic characteristics of age, educational status, residence, place of birth, mode of delivery and gender of children were found to be associated with the prevalence of postpartum depression.

Conclusion: The prevalence of postpartum depression in our setting was 31% which reflected the highest prevalence of depression among women of Lahore, Pakistan. Hence mental health and mother and baby health should be assimilated, and special focus should be given to knowledge, integration, and change in attitude regarding post-partum depression.

Keywords: Lahore city; Pakistan; Post-natal depression; Puerperal women

***Corresponding author:** Rabia Nazim, Department of Public Health, Institute of Social and Cultural Studies, University of Punjab, Lahore 75500, Pakistan. E-mail: rabianazim786@gmail.com

Citation: Nazim R, Muhammad S, Junaid K, Ali H, Tahira K(2020) Postnatal Depression and Associated Factors among Puerperal Women in Lahore City, Pakistan: Analytical Cross-Sectional Study. J Community Med Public Health Care 7: 073.

Received: May 12, 2020; **Accepted:** December 27, 2020; **Published:** December 31, 2020

Introduction

Postnatal Depression (PND) is defined as the presence of at least five of the following symptoms for a continuous period of about two weeks in puerperium: feeling low, sudden increase or decrease in weight, disturbed sleep pattern, irritability, inability to focus, lack of ability to make decisions and suicidal thoughts or tendency to commit suicide [1]. Becoming mother is a complex process and includes remarkable variations in mental, communal and functional domains so is associated with enhanced tendency to suffer from mental diseases [2,3].

In developed countries the frequency of Post-natal depression is found to be approximately 13% [4]. A meta-analysis was done on post-natal depression that included 25 studies, out of which 10 studies were conducted in countries belonged to continent Africa and it concluded that rate of PND was higher in developing countries compared to developed countries. Another review of 35 PND studies done in Africa assessed prevalence of pre-natal depression to be 11.3% while post-natal depression as 18.3% [5,6]. Similarly, another meta-analysis including 13 studies estimated prevalence of PND as 19.8% in developing countries [7,8].

Many factors have been identified that are known to play a vital role in onset of PND. Women who undergo difficult labour or suffer from labour for increased length of time, have high intensity pain or need medical aid in delivery(vacuum forceps) are likely to face stress and are more vulnerable to develop Post-natal depression (PND) [9,10]. Women who become mother for first time have less confidence and have ambiguities and fear of unknown in mind and these factor interact to expose her to PPD [10]. Some more factors like less age of mother, have a little or no education and low socio-economic status can lead to development of depression in post-natal period [11,12].

PND has become an emerging issue of community health that needs attention to be addressed and it is estimated that it will be the

disease-causing highest morbidity and death rate due to suicides by year 2020 [13]. It is one of most dreadly consequences of birth of baby and is related to deficiencies in bonding of baby with mother and can have adverse effects on baby in the form of increased visits to hospital, delayed milestones and mental retardation [14]. The present study had objective to find prevalence of PND and factors that are related to its onset in mothers during post-partum period in Lahore, Pakistan.

Methods

Study design, setting and population

This study was conducted as a population based cross sectional study from May to August, 2019 at primary health centres (PHCs) and comprehensive/secondary health facilities in Lahore. The definition of puerperium or post-partum depression according to WHO is the period beginning from one hour after delivery of placenta and continues for a period of six weeks [15]. All women in the study area irrespective of whether they are a resident of the village or accessing postnatal clinics either for immunization services or check-up were enrolled in the study. The present study enrolled women who were at four to twelve weeks post-partum. Many other related studies have also included women at similar duration of post-partum period [16].

Women with already known depressive disorder on history of chronic medical disorders (Diabetes Mellitus, Hypertension, Rheumatoid arthritis and Cancer on history) were excluded from the study.

Sample size and determination procedure: The sample size in this study was estimated using a single proportion approach. Considering 11.3% Post-natal depression prevalence and with 5% margin of error and 95% level of significance, the calculated sample size was 155 [17]. Sampling method used was Non-probability convience sampling. The post-natal mothers who were visiting postnatal clinics either for immunization services or check-up and agreed to participate in our study were interviewed by the researcher.

Data collection

Outcome variables: Depressive symptomatology was assessed in women during puerperium by means of Edinburgh Postnatal Depression Scale (EPDS) [18]. It is a questionnaire that includes 10 questions and estimates depression of the person being assessed for a period of seven days before the evaluation. The answers are given scores within a range of 0-3; higher score shows that person is having more symptoms of depression. The maximum score of EPDS is 30.A number of studies report that EPDS has good mental illness detecting properties and also has got very good sensitivity and specificity. A woman having score 12 or more on EPDS is likely to have depression [19-22]. EPDS has remarkable validity and reliability. In current study we used EPDS score of 13 or more to be indicator of depression. An EPDS score of 13 in hospitals also is a level sufficient to indicate women with PPD [23]. But the women at EPDS score of 13 require additional assessment by psychiatrist. EPDS can be given to participants for filling them individually but interviews with the help of directions of researcher is similarly effective [24].

Measures of associated factors

Based on the findings of previous studies, we assessed the associated factors of depressive and anxiety symptoms in postpartum women [25,26]. Maternal demographic characteristics such as age, marital status, level of education, residence and standard of living. Pregnancy and Birth-related Factors include health facility type attended, parity, no of miscarriages & still-births, Number of live children, gender of child, mode of delivery, wish to have last pregnancy, plan with husband to have last pregnancy and medical care during birth. All were collected through standard questions.

Data analysis

Data was processed and analysed by means of spss 24. Respondent's background characteristics were evaluated by use of percentages, means and standard deviation. A cut-off value of 13 was set for existence of depression. Pearson Chi-square test was applied for evaluating relationship between PPD and relevant risk factors. All variables at p-value of less than 0.05 were considered significant.

Ethical Consideration

Permission was taken for data collection from ethical committee of Punjab University Lahore, Pakistan. The aim of study was told to participants and informed consent was taken from them in written form. Inclusion of participants in our research completely based upon their willingness. Carefulness was observed to sustain Privacy of whole acquired material and names of participants was not mentioned on the questionnaires in order to ensure the confidentiality.

Results

Demographic characteristics of respondents

The mean age of the sample was 29.37 years (SD=4.237) and range of ages was 20 -45 years. According to the study results, more than half of the study participants (96%) were married, 54.2% was belong from rural residence and 24.4% were illiterate. The result of present study showed that 38.7% had secondary education and 63.2% had low standard of living (Table 1).

Variables	Frequency	Percentage
Age (Years)		
20-30	20	12.9
30-40	90	58.1
40 above	45	29
Marital status		
Married	150	96
Single	1	1
Divorced	2	2
Widowed	2	2
Residence		
Urban	71	45.8
Rural	84	54.2
Educational status		
Illiterate	32	20.6
Primary education	50	32.3
Secondary education	60	38.7
Higher education	13	8.4
Standard of living		
Low	98	63.2
Medium or high	57	36.8

Table 1: Demographic Characteristics of respondents.

Pregnancy and birth-related factors

According to the study results, 71.8% deliveries were take place at health facility, 72.9% respondents were multigravida, and 80.1% had no history of miscarriages and still-births while 52.9% of study participants had more male babies. The mode of delivery was SVD in 63.9% women while 58.70% received medical care during birth (Table 2).

Pregnancy & birth history	Frequency	Percentage
No of pregnancy		
Primigravida	41	26.5
Multigravida	113	72.9
No. of births		
Primiparity	35	22.58
Multiparity	120	77.41
No of miscarriages & still-births		
1	24	15.4
2	5	3.2
More than 2	1	0.6
No	125	80.1
Number of live children		
Zero	91	58.7
one	45	29
more than or equal to 2	19	12.3
Pregnancy related problems during last pregnancy		
Yes	30	19.4
No	125	80.6
Place of birth		
Home	39	25
Health facility	112	71.8
Others	3	1.9
Gender of children		
More male babies	82	52.9
More female babies	52	33.5
Equal number of male and female babies	7	4.5
No babies	14	9
Number of live children		
Zero	91	58.7
one	45	29
more than or equal to 2	19	12.3
Mode of Delivery		
SVD	99	63.9
C-section	56	36.1
Wish to have last pregnancy		
Yes	115	74.19
No	40	25.8
Plan with husband to have last pregnancy		
Yes	127	81.93
No	28	18.06
Medical care during birth		
Yes	91	58.7
No	64	41.29

Table 2: Pregnancy and Birth-related Factors.

Prevalence of post-natal depression among the women

The prevalence of depression among the study women (an EPDS score of 10 and above) was found to be 48.3% (75/155). The prevalence of major depression (a score 13 and above) was found to be 31.6% (49/155) (Table 3).

EPDS score	Frequency (%)
1 9	80(51.61)
10-12	26(16.77)
13 and above	49(31.61)

Table 3: Edinburgh postnatal depression scale score of the study women (n=155).

The demographic characteristics of age (p-value=0.001), educational status (p-value=0.001) and residence (p-value=0.001) were found to be associated with the prevalence of postpartum depression (Table 4).

Background Characteristics	Total women	Number with postpartum depression (%)	χ^2	p-value
Age				
20-30	20	0(0.0)	137.32	0.001
30-40	90	4(2.6)		
40 and above	45	45(29.0)		
Educational status				
Illiterate	32	0(0.0)	88.392	0.001
Primary education	50	0(0.0)		
Secondary education	60	36(23.2)		
Higher education	13	13(8.4)		
Residence				
Urban	72	0(0.0)	62.15	0.001
Rural	83	49(31.6)		
Standard of living				
Low	98	27(17.4)	2.034	0.154
Medium or high	57	22(14.2)		

Table 4: Prevalence of postpartum depression based on demographic characteristics.

Based on delivery characteristics, place of birth, mode of delivery and gender of children were found to be associated with the prevalence of postpartum depression section ($p < 0.05$) (Table 5).

Discussion

Psychiatric illnesses were highest contributor adding to Global Burden of Disease (GBD) as evident from 1990 and 2000 studies. As said by World Health Organization (WHO) psychiatric diseases would be second highest contributor to global burden of disease by 2020.PND is affecting ladies of low income countries more badly because of reduced focus on psychiatric problems and culture and traditions of these areas. In low-income countries reasons of maternal deaths are being stressed but factors leading to physical and mental illnesses are being ignored [27,28].

Background Characteristics	Total women	Number with postpartum depression	χ^2	p-value
Place of birth				
Home	54	9(5.8)	80.56	0.001
Health facility	71	10(6.5)		
Others	30	30(19.4)		
Number of live children				
Zero	91	34(21.9)	4.101	0.129
One	45	12(7.7)		
more than or equal to 2	19	3(1.9)		
Mode of delivery				
SVD	99	26(16.8)	3.62	0.05
C-section	56	23(14.8)		
Gender of children				
More male babies	82	19(12.3)	12.56	0.006
More female babies	52	25(16.1)		
a) Equal number of male and female babies	7	0(0.0)		
No babies	14	5(3.2)		

Table 5: Prevalence of postpartum depression based on delivery characteristics.

Depression is in constituent of global burden of diseases in developing countries. PND is a critical illness and is disturbing because it develops at stage when mother requires special and additional look after and care and this along with anxiety of memory of pain of birth expose her to threat of onset of depression. PND require focus because if it occurs mother becomes dependent for her care and also for look after of baby on others. Frequency of depression found in present research is 31% which is same as in other studies done in South Asian countries but very high compared to developed countries. The prevalence of depression in this study was different from that found in the studies done in Pakistan (23%), Bangladesh (22%), North Gonder (24.1%) and Bahir Dar (21.5%) [29-33].

The mean age of the sample was 29.37 years (SD=4.237) and range of ages was 20 -45 years. According to the study results, more than half of the study participants were married, belong from rural residence and were illiterate and 63.2% had low standard of living [34-37]. It may be because of design of current study which is cross-sectional and change in methodology, period in which data was collected in relation to delivery and also variations in living circumstances of women being studied. In reference to demographic characteristics, our results showed a strong association between age, educational status and residence and possibility to develop the prevalence of postnatal depression. These findings are consistent with the previous studies who reported an association between mothers' sociodemographic factors and depressive disorders [38-40]. This can be explained on the basis of low levels of education in women living in villages, exploitation and misconduct by health-care providing staff in the course of delivery and obstructions to good quality health centres in Pakistan.

With respect to delivery characteristics, place of birth, mode of delivery and gender of children were found to be associated with the high prevalence of postpartum depression [41-44]. Different geographic regions and cultures have variable priorities for desired gender of the new-born. Researches done in India and China indicated that risk of PPD increase if the newborn is female by gender [45,46]. Some studies show that mode of delivery is also linked to risk of onset of depression like ladies who underwent vaginal delivery were more prone to suffer from depression compared to ladies who gave birth by C-section. This may be explained by the fact that women with vaginal births started their household chores and took responsibilities earlier compared to ladies with c-section who enjoyed longer rest periods.

Many researchers suggest that increase in provided care and look after reduces frequency of PND and aids in detection of PND at initial stage. PND results in reduced collaboration of mother with baby, husband, family and society. The above-mentioned factors need to be addressed drastically to decrease prevalence of disease. Because of recent distressing frequency and assumed enhanced increase disease burden in coming days community must be made alert of the indications of the PND for diagnosis at an early stage to improve outcome.

Study Strengths and Limitations

The current study puts stress on postnatal depression which is a neglected issue of our society. The strength of study is that all the tests, scales and instruments used for evaluation of study variables have good ability to detect psychiatric issues. There are a few confines faced by our research. Medical therapy within 42 days of birth of baby is received commonly by women of low- and middle-income groups. So, the results of present study cannot be generalized to upper class as there can be a difference of social, psychological and life-style. EPDS was used for evaluation and detection of depression in ladies during post-natal period. It is a standard questionnaire. Though EPDS is having high sensitivity and specificity and can easily be applied by a health care personnel yet depression should be confirmed by clinical assessment once a participant is suspected by EPDS to be suffering from depression. Being a cross-sectional study, number of women with depression was small we, cannot generalize the result of present study.

Conclusion

The results of present study concluded that PND is highly prevalent issue which indicates that it is a problem of public health importance. It is suggested that gynae department should be equipped with trained midwives; nurses etc that can guide mother and attendants about initial symptoms of PND and about danger signs that need medical intervention. MCH programme should screen depression routinely in expecting ladies (by collaboration with psychiatry department) as researches show that women who develop PND are at high risk of having prenatal depression.

Authors' Contribution

Drafting of the manuscript: Rabia Nazim, Khadija Tahira, Khunsa Junaid, Hassan Ali, Concept and design of study or acquisition of data or analysis and interpretation of data: Shoaib Muhammad, Taimoor Akram Khan, Aabish Mehreen Khan, Ali Akram Khan. Critical revision of the manuscript for important intellectual content and final approval of the version to be published: all authors.

Ethical Considerations

Ethical issues (Including plagiarism, informed consent, misconduct, data fabrication and/or falsification, double publication

and/or submission, redundancy, etc.) have been completely observed by the authors.

Acknowledgements

The authors are grateful to the women for their participation in the study, and to their teachers for their assistance with collecting the data. There were no funding sources.

Conflict of Interest

The authors declare that there is no conflict of interest.

References

1. Turkcapar AF, Kadıoğlu N, Aslan E, Tunc S, Zayifoglu M, et al. (2015) Sociodemographic and clinical features of postpartum depression among Turkish women: a prospective study. BMC Pregnancy Childbirth 15:108.
2. Guo N, Bindt C, Te Bonle M, Appiah-Poku J, Hinz R, et al. (2013) Association of ante- partum and postpartum depression in Ghanaian and Ivorian women with febrile illness in their offspring: a prospective birth cohort study. Am J Epidemiol 178: 1394-1402.
3. Chowdhary N, Sikander S, Atif N, Singh N, Ahmad I, et al. (2014) The content and delivery of psychological interventions for perinatal depression by non-specialist health workers in low- and middle-income countries: a systematic review. Best Pract Res Clin Obstet Gynaecol 28:113-33.
4. O'Hara MW, Swain AM (1996) Rates and risk of postpartum depression -a meta-analysis. Inter Rev Psychiatry 8: 37-54.
5. Sawyer A, Ayers S, Smith H (2010) Pre- and postnatal psychological wellbeing in Africa: a systematic review. J Affect Disord 123:17-29.
6. Parsons CE, Young KS, Rochat TJ, Kingelback ML,Stein A (2012) Postnatal depression and its effects on child development: a review of evidence from low- and middle-income countries. Br Med Bull 101:57-79.
7. Fisher J, Cabral de Mello M, Patel V, Rehman A, Tran T, et al. (2010) Prevalence and determinants of common perinatal mental disorders in women in low- and lower-middle-income countries: a systematic review. Bull. World Health Organ 90: 139-149.
8. Villegas L, McKay K, Dennis CL, Ross LE (2010) Postpartum depression among rural women from developed and developing countries: a systematic review. J Rural Health 27: 278–288.
9. McCoy SJB, Beal JM, Shipman SBM, Payton ME, Watson GH (2006) Risk factors for postpartum depression: A retrospective investigation at 4-weeks postnatal and a review of the literature. J Am Osteopath Assoc 106: 193-208.
10. Porter CL, Hsu H (2003) First-time mothers' perceptions of efficacy during the transition to motherhood: links to infant temperament. J Fam Psychol 17: 54-64.
11. Davis L, Edwards H, Mohay H, Wollin J (2003) The impact of very premature birth on the psychological health of mothers. Early Hum Dev 73:61-70.
12. Rubertsson C, Waldenstrom U, Wickberg B (2003) Depressive mood in early pregnancy: prevalence and women at risk in a national Swedish sample. J Reprod Infant Psychol 21: 113-123.
13. Husain N, Mukherjee I, Notiar A, Alavi L (2016) Prevalence of common mental disorders and its association with life events and social support in mothers attending a well-child clinic. SAGE Open 6.
14. Prince M, Patel V, Saxena S, Mario Maj (2007) No health without mental health. Lancet 370:859-77.
15. World Health Organization (1998) Postpartum Care of Mother and Newborn: A Practical Guide. WHO/RHT/MSM/98.3. Geneva: WHO.
16. Langlois EV, Miszkurka M, Zunzunegui MV, Ghaffar A, Ziegler D, et al. (2015) Inequalities in postnatal care in low-and-middle-income countries: A systematic review and meta-analysis. Bull. World Health Organ 93: 259-270.
17. Dow A, Dube Q, Pence BW, Van Rie A (2014) Postpartum depression and HIV infection among women in Malawi. J Acquir Immune Defic Syndr 65: 359-365.
18. Tesfaye M, Hanlon C, Wondimagegn D, Alem A (2010) Detecting postnatal common mental disorders in Addis Ababa, Ethiopia: validation of the Edinburgh postnatal depression scale and Kessler scales. J Affect Disord 122: 102-108.
19. Cox JL, Holden JM, Sagovsky R (1987) Detection of postnatal depression: development of the 10-item Edinburgh depression scale. Br J Psychiatry 150: 782-788.
20. Matthey S, Henshaw C, Elliott S,Barnett B (2006) Variability in use of cut-off scores and formats on the Edinburgh postnatal depression scale: implications for clinical and research practice. Arch Women's Ment Health 9: 309-315.
21. Brouwers EP, van Baar AL, Pop VJ (2001) Does the Edinburgh postnatal depression scale measure anxiety? J Psychosom Res 51: 659-663.
22. Boyce P, Stubbs J, Todd A (1993) The Edinburgh postnatal depression scale: validation for an Australian sample. Aust N Z J Psychiatry 27: 472-476.
23. Sawyer A, Ayers S, Smith H (2010) Pre- and postnatal psychological wellbeing in Africa: a systematic review. J Affect Disord 123:17-29.
24. Kaminsky LM, Carlo J, Muench MV, Nath C, Harrigan JT (2008) Screening for postpartum depression with the Edinburgh Postnatal Depression Scale in an indigent population: does a directed interview improve detection rates compared with the standard self-completed questionnaire? J Matern Fetal Neonatal Med 21: 321-325.
25. O›Hara MW (2009) Postpartum depression: What we know. J clin psychol 65: 1258-1269.
26. Norhayati MN, Hazlina NN, Asrenee AR (2015) Magnitude and risk factors for postpartum symptoms: a literature review. J affective Disorders 175: 34-52.
27. Ferrari AJ, Charlson FJ, Norman RE, Patten SB, Freedman G, et al (2013) Burden of depressive disorders by country, sex, age, and year: findings from the global burden of disease study 2010. PLoS medicine 10.
28. Saligheh M, Rooney RM, McNamara B, Kane RT (2014) The relationship between postnatal depression, sociodemographic factors, levels of partner support, and levels of physical activity. Front psychol 5: 1-8.
29. Klainin P, Arthur DG (2009) Postpartum depression in Asian cultures: a literature review. Int J Nurs stud 46:1355-1373.
30. Goyal D, Gay C, Lee KA (2010) How much does low socioeconomic status increase the risk of prenatal and postpartum depressive symptoms in first-time mothers? Women›s Health 20: 96-104.
31. Cantilino A, Zambaldi CF, Albuquerque TLCD, Paes J, Montenegro ACP, et al. (2010) Postpartum depression in Recife-Brazil: prevalence and association with bio-socio-demographic factors. J Bras Psiquiatr 59: 1-9.
32. Sadiq G, Shahazad Z, Sadiq S (2016) Prospective study on prevalence and risk factor of post-natal depression in Rawalpindi/Islamabad, Pakistan. Rawal Med J 41: 64-67.
33. Baumgartner JN, Parcesepe A, Mekuria YG, Abitew DB, Gebeyehu W, et al. (2014) Maternal mental health in Amhara region, Ethiopia: a cross-sectional survey. Glob Health Sci Pract 2: 482-486.
34. Chandran M, Tharyan P, Muliyil J, Abraham S (2002) Postpartum depression in a cohort of women from a rural area of Tamil Nadu, India. Incidence and risk factors. Br J Psychiatry 181: 499-504.

35. Bhatia JC, Cleland J (1996) Obstetric morbidity in South India: Results from a community survey. Soc Sci Med 43:15071516.

36. Dubey C, Gupta N, Bhasin S, Muthal RA, Arora D (2011) Prevalence and associated risk factors for postpartum depression in women attending a tertiary hospital, Delhi, India. Int J Soc Psychiatry 58: 577580.

37. Glazener CM, Abdalla M, Stroud P, Naji S, Templeton A, et al. (1995) Postnatal maternal morbidity: Extent, causes, prevention and treatment. Br J Obstet Gynaecol 102: 282287.

38. Brown S, Lumley J (2000) Physical health problems after childbirth and maternal depression at six to seven months postpartum. BJOG 107: 11941201.

39. Bener A, Gerber LM, Sheikh J (2012) Prevalence of psychiatric disorders and associated risk factors in women during their postpartum period: A major public health problem and global comparison. Int J of Womens Health 4: 191-200.

40. Agbaje OS, Anyanwu JI, Umoke PIC, Iwuagwu TE, Iweama CN, et al. (2019) Depressive and anxiety symptoms and associated factors among postnatal women in Enugu-North Senatorial District, South-East Nigeria: a cross-sectional study. Arch Public Health 77: 1-16.

41. Beck CT (2001) Predictors of postpartum depression: an update. Nurs Res 50: 275-285.

42. Matthey S, Barnett B, Howie P, Kavanagh DJ (2003) Diagnosing postpartum depression in mothers and fathers: whatever happened to anxiety? J Affect Disord 74:139-147.

43. Fiala A, Svancara J, Klánová J, Kasparek T (2017) Sociodemographic and delivery risk factors for developing postpartum depression in a sample of 3233 mothers from the Czech ELSPAC study. BMC Psychiatry 17: 2-10.

44. Xiea G, Hea A, Liua J, Bradwejn J, Walker M, et al. (2007) Fetal gender and postpartum depression in a cohort of Chinese women. Soc Sci Med 65:680-684.

45. Patel V, Rodrigues M, DeSouza N (2002) Gender, poverty, and postnatal depression: a study of mothers in Goa, India. Am J Psychiatry 159: 43-47.

46. Prost A, Lakshminarayana R, Nair N, Tripathy P, Copas A, et al. (2012) Predictors of maternal psychological distress in rural India: A cross-sectional community-based study. J Affect Disord 138: 277286.

Advances In Industrial Biotechnology | ISSN: 2639-5665

Advances In Microbiology Research | ISSN: 2689-694X

Archives Of Surgery And Surgical Education | ISSN: 2689-3126

Archives Of Urology

Archives Of Zoological Studies | ISSN: 2640-7779

Current Trends Medical And Biological Engineering

International Journal Of Case Reports And Therapeutic Studies | ISSN: 2689-310X

Journal Of Addiction & Addictive Disorders | ISSN: 2578-7276

Journal Of Agronomy & Agricultural Science | ISSN: 2689-8292

Journal Of AIDS Clinical Research & STDs | ISSN: 2572-7370

Journal Of Alcoholism Drug Abuse & Substance Dependence | ISSN: 2572-9594

Journal Of Allergy Disorders & Therapy | ISSN: 2470-749X

Journal Of Alternative Complementary & Integrative Medicine | ISSN: 2470-7562

Journal Of Alzheimers & Neurodegenerative Diseases | ISSN: 2572-9608

Journal Of Anesthesia & Clinical Care | ISSN: 2378-8879

Journal Of Angiology & Vascular Surgery | ISSN: 2572-7397

Journal Of Animal Research & Veterinary Science | ISSN: 2639-3751

Journal Of Aquaculture & Fisheries | ISSN: 2576-5523

Journal Of Atmospheric & Earth Sciences | ISSN: 2689-8780

Journal Of Biotech Research & Biochemistry

Journal Of Brain & Neuroscience Research

Journal Of Cancer Biology & Treatment | ISSN: 2470-7546

Journal Of Cardiology Study & Research | ISSN: 2640-768X

Journal Of Cell Biology & Cell Metabolism | ISSN: 2381-1943

Journal Of Clinical Dermatology & Therapy | ISSN: 2378-8771

Journal Of Clinical Immunology & Immunotherapy | ISSN: 2378-8844

Journal Of Clinical Studies & Medical Case Reports | ISSN: 2378-8801

Journal Of Community Medicine & Public Health Care | ISSN: 2381-1978

Journal Of Cytology & Tissue Biology | ISSN: 2378-9107

Journal Of Dairy Research & Technology | ISSN: 2688-9315

Journal Of Dentistry Oral Health & Cosmesis | ISSN: 2473-6783

Journal Of Diabetes & Metabolic Disorders | ISSN: 2381-201X

Journal Of Emergency Medicine Trauma & Surgical Care | ISSN: 2378-8798

Journal Of Environmental Science Current Research | ISSN: 2643-5020

Journal Of Food Science & Nutrition | ISSN: 2470-1076

Journal Of Forensic Legal & Investigative Sciences | ISSN: 2473-733X

Journal Of Gastroenterology & Hepatology Research | ISSN: 2574-2566

Journal Of Genetics & Genomic Sciences | ISSN: 2574-2485

Journal Of Gerontology & Geriatric Medicine | ISSN: 2381-8662

Journal Of Hematology Blood Transfusion & Disorders | ISSN: 2572-2999

Journal Of Hospice & Palliative Medical Care

Journal Of Human Endocrinology | ISSN: 2572-9640

Journal Of Infectious & Non Infectious Diseases | ISSN: 2381-8654

Journal Of Internal Medicine & Primary Healthcare | ISSN: 2574-2493

Journal Of Light & Laser Current Trends

Journal Of Medicine Study & Research | ISSN: 2639-5657

Journal Of Modern Chemical Sciences

Journal Of Nanotechnology Nanomedicine & Nanobiotechnology | ISSN: 2381-2044

Journal Of Neonatology & Clinical Pediatrics | ISSN: 2378-878X

Journal Of Nephrology & Renal Therapy | ISSN: 2473-7313

Journal Of Non Invasive Vascular Investigation | ISSN: 2572-7400

Journal Of Nuclear Medicine Radiology & Radiation Therapy | ISSN: 2572-7419

Journal Of Obesity & Weight Loss | ISSN: 2473-7372

Journal Of Ophthalmology & Clinical Research | ISSN: 2378-8887

Journal Of Orthopedic Research & Physiotherapy | ISSN: 2381-2052

Journal Of Otolaryngology Head & Neck Surgery | ISSN: 2573-010X

Journal Of Pathology Clinical & Medical Research

Journal Of Pharmacology Pharmaceutics & Pharmacovigilance | ISSN: 2639-5649

Journal Of Physical Medicine Rehabilitation & Disabilities | ISSN: 2381-8670

Journal Of Plant Science Current Research | ISSN: 2639-3743

Journal Of Practical & Professional Nursing | ISSN: 2639-5681

Journal Of Protein Research & Bioinformatics

Journal Of Psychiatry Depression & Anxiety | ISSN: 2573-0150

Journal Of Pulmonary Medicine & Respiratory Research | ISSN: 2573-0177

Journal Of Reproductive Medicine Gynaecology & Obstetrics | ISSN: 2574-2574

Journal Of Stem Cells Research Development & Therapy | ISSN: 2381-2060

Journal Of Surgery Current Trends & Innovations | ISSN: 2578-7284

Journal Of Toxicology Current Research | ISSN: 2639-3735

Journal Of Translational Science And Research

Journal Of Vaccines Research & Vaccination | ISSN: 2573-0193

Journal Of Virology & Antivirals

Sports Medicine And Injury Care Journal | ISSN: 2689-8829

Trends In Anatomy & Physiology | ISSN: 2640-7752