



Postpartum depression and its accomplices in Peshawar; a metropolitan city of Pakistan.

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ABSTRACT... Objective: To analyze prevalence and severity of postnatal depression among females of a major but socio-culturally traditional city of Pakistan, with an aim to pinpoint eminent demographic and medical accomplices. **Study Design:** Cross Sectional Study. **Setting:** Combined Military Hospital Peshawar. **Period:** Feb 2016 to Feb 2017. **Material & Methods:** Sample was collected via random probability technique. A self-designed questionnaire was used; encompassing demographic details and information regarding obstetric and family history. Screening tool was Standardized "Edinburgh Postpartum Depression Scale (EPDS)". Descriptive analysis done via SPSS-21. Outcome variable (EPDS) was cross-tabulated with independent variables, correlations were generated by Pearson 2-tailed bivariate analysis; p -value < 0.05 was considered as significant. **Results:** Response rate was 52.2% (n-402). Low, moderate and high risk patients for developing depression were 27.1% (n-109), 15.4% (n-62) & 12.9% (n-52) respectively. There was a strong relation between outcome and age ($p < 0.001$), education ($p < 0.001$), socio-economic class ($p < 0.013$), bad obstetric history (BOH) ($p < 0.009$), age of Last Child Born (LCB) ($p < 0.010$), mode of delivery ($p < 0.011$), postpartum phase ($p < 0.001$) and postpartum complications ($p < 0.003$). Number of sons was negatively correlated with EPDS scores (Pearson correlation co-efficient -0.128 and $p < 0.01$). There was no significant impact of years since married ($p < 0.349$); husband's education ($p < 0.397$), number of children ($p < 0.966$) or daughters ($p < 0.063$) and previous offspring's death ($p < 0.076$). **Conclusion:** Considerable risk of developing postpartum depression was detected among the respondents. Sociodemographic aggravators were identified to be maternal age, less interpregnancy interval, delivery by SVD, gender of children and postpartum complications. Postpartum depression can be detected by screening/diagnosing every postnatal woman and then promptly treating the sufferers. Imperative measures are opined to identify and vigorously address the sociodemographic and medical aggravating factors. Collaboration of psychiatrists/psychologists is highly recommended in obstetric set-ups.

Key words: Female Reproductive Health-Care, Mother-Child Health, Postnatal Period, Prenatal Care, Under-Developed Countries.

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INTRODUCTION

Depression is a great contributor to disease burden worldwide; unfortunately there is substantial treatment gap between developed and developing nations. Like other mental health issues, depression is still a stigma for many, it frequently remains under-diagnosed, denied or even defied by majority. Females are linchpin to any society; they face unique challenges during child-bearing age most of which relate to health and disease. Female reproductive health issues often remain neglected.¹ Situation for

postnatal mental state of women is analogous to other psychiatric problems²⁻⁶, they are seldom screened or treated. Mothers play a pivotal role in raising their children. Depression does not only affect them, it also impedes maternal-infant bonding. Psychological, cognitive and emotional development of offspring of depressed mothers is often hampered. Once mature, such children seldom render their best to any community.⁷ Postpartum period is divided into 3 main phases; immediate, 2-6 weeks and more than 6 weeks postpartum.⁸ Each era fetches its own

physical, mental and socioeconomic challenges. Postpartum depression (PPD) is defined as depressive disorder with onset within 6 weeks of parturition.⁹ Basically, 2 weeks to 6 months after delivery is the most appropriate time to screen for PPD. Several screening tools are available; EPDS is a validated 10-items questionnaire. It is a reasonably accurate with a decent internal consistency; and is one of the most frequently used screening tool.¹⁰⁻¹⁵ An EPDS score of ≥ 12 raises suspicion of PPD. Postpartum Depression Screening Scale is another commonly used self reporting inventory, but it is less precise than EPDS with a higher false-positive rate.⁹

PPD has been extensively studied in many parts of the world. Its prevalence is highest in under-developed countries.^{6,16} In Western literature it varies from 11-19%.^{12,17} Pakistan is a traditional country; Peshawar is one of her most contemporary yet a conventional city; with a sizable population of 3.5 million. In province of Khyber-Pakhtun-Khwah (KPK), lush and vivid cultures are nurtured since ages; which often over-shadow the medical evidence and practices. This frequently results in adversities to health and disease related outcomes. Gender bias against women is unambiguous here. It's an enigma that in many customary areas, provision of medical services to females is often taken as a matter against pride or prestige. Males feel ashamed if reproductive health issues of their ladies are discussed with any outsiders like medical/paramedical staff, embarrassment is even worsened when it comes to psychological/psychiatric problems. It's a dilemma that these women are often entitled to services of local unqualified midwives at the maximum. Postnatal phase makes such women more prone to succumb to mental health challenges, especially depression. In Pakistan, PPD has ranged between 17% to 63%^{4,6}, is thus highest in Asia.⁶ These alarming figures could not yet gather passable attention of researchers, particularly in KPK.

Hence authors up took this study to see incidence and contributing factors of postpartum depression in Peshawar. In this study, it was hypothesized that there must be substantial prevalence of

PPD in target population and very commonly encountered demographic and medical features like advance maternal age, poor socioeconomic status, lower education level, lesser no of male children and post-partum complications like excessive bleeding, wound infection etc were suspected as potential accomplices. It was the first study of its type from Peshawar and was expected to yield interesting results. Basing on these data, researchers may evaluate similar populations of the country and define corrective measures to manage PPD.

MATERIAL & METHODS

This Cross-sectional, descriptive study was conducted at Combined Military Hospital Peshawar, from Feb 2016-Feb 2017. Sample was collected utilizing random probability technique. A self-designed questionnaire was used encompassing demographic details and information regarding mode of delivery and current family members, medical and past history, post-partum complications like PPH, wound infection and sepsis. Standardized "Edinburgh Postpartum Depression Scale (EPDS)" was used as inventory. Formal approval from institutional review board was taken.

All Females who had delivered in subject hospital or those reporting for postnatal follow up were enrolled after endorsing informed consent. Women with severe language barrier, with history of or diagnosed with depression or any other mental health ailment like manic depressive psychosis etc were excluded. Women already diagnosed with debilitating medical illness like liver disease, pulmonary disease or substance abuse were also excluded.

To enhance comfort/confidence only lady doctors fluent in local languages of respondents assisted them to fill the questionnaires. Provision of closed spaces within hospital ensured privacy and confidentiality. Simpler demographic questions preceded obstetric details. Finally EPDS was filled.

Required sample size for 3.5 million was 385 (keeping margin of error 5%, confidence level

95% and response distribution 50%). Catering for a estimated non-response rate of 50%, 770 forms were distributed. Data analyzed via descriptive analysis (SPSS-21), qualitative data expressed as frequencies/percentages; quantitative as mean \pm standard deviation (maximum/minimum). Main outcome variable (EPDS score) was cross-tabulated with independent variables (age, client's education, husband's education, years since married, socioeconomic class, number of children/daughters/sons, age of last child born (LCB), history of offspring's death, bad obstetric history (BOH), mode of delivery (spontaneous vaginal delivery-SVD vs. Caesarean section, days since delivery, postpartum complications including wound infection, postpartum hemorrhage-PPH and fetal/neonatal death or other serious health problems). Cross-tabulation done via Chi-square, while Pearson correlation co-efficient was generated

by 2-tailed bivariate analysis; p-value <0.05 was considered as significant.

RESULTS

Response rate was 52.2% (n-402); all respondents were married as stated; 5.7% (n-23), 30.3% (n-122) and 63.9% (n-257) were interviewed at <2 weeks, 2-6 weeks and >6 weeks of delivery respectively. Quantitative variables were; Age (years) 28.03 ± 5.253 (16/39); Client's Education 7.43 ± 4.956 (0/16); Husband's Education 10.84 ± 2.785 (0/16) and Years since married 7.97 ± 4.730 (1/19).

EPDS scores were 7.57 ± 5.563 (0/27); Low, moderate and high risk participants were 27.1% (n-109), 15.4% (n-62) & 12.9% (n-52) respectively. Table-I demonstrates qualitative variables having significant relationship with EPDS grades.

Variable	Category	n (%) ¹	Risk of Developing Depression				P-Value
			Minimal	Low	Moderate	High	
Age (Years)	<19	14(3.5)	14	0	0	0	<0.001
	20-29	210(52.2)	112	54	28	16	
	≥ 30	178(44.3)	53	55	34	36	
Education (Grades)	<5	88(21.9)	54	11	11	12	0.001
	5-10	222(55.2)	88	72	40	22	
	≥ 11	92(22.9)	37	26	11	18	
Socio-economic Class (SEC)	Low	328(81.6)	143	98	49	38	0.013
	Middle	58(14.4)	29	9	7	13	
	Upper	16(4.0)	7	2	6	1	
No of Children	Nil	30(7.5)	16	0	14	0	<0.001
	1-2	164(40.8)	86	43	12	23	
	3-4	164(40.8)	59	61	19	25	
	>4	44(10.9)	18	5	17	4	
No of Daughters	Nil	72(17.9)	58	0	14	0	<0.001
	1-2	254(63.2)	92	83	40	39	
	3-4	46(11.4)	11	21	5	9	
	>4	30(7.5)	18	5	3	4	
No of Sons	Nil	134(33.3)	54	32	26	22	<0.001
	1-2	242(60.2)	113	77	22	30	
	3-4	12(3.0)	12	0	0	0	
	>4	14(3.5)	0	0	14	0	
BOH ²	No	388(96.5)	175	106	61	46	0.009
	Yes	14(3.5)	4	3	1	6	
Age of Last Child Born (Years)	Nil	72(17.9)	34	17	15	6	0.010
	<2	152(37.8)	61	57	17	17	
	3-7	152(37.8)	68	32	28	24	
	>7	26(6.5)	16	3	2	5	
Type of Delivery	SVD ³	242(60.2)	99	64	49	30	0.011
	C- Sec ⁴	160(39.8)	80	45	13	22	
Post-natal Complication (Maternal or Fetal/ Neonatal)	Nil	356(88.6)	154	101	56	45	0.003
	Wound Infection	16(4.0)	4	5	3	4	
	PPH ⁵	14(3.5)	5	3	3	3	
	Others ⁶	16(4.0)	16	0	0	0	

Table-I. Study variables which casted significant impact on risk of developing depression (n-402).

1. n stands for Frequency and % for Percent
2. BOH stands for Bad Obstetric History
3. SVD stands for Spontaneous Vaginal Delivery
4. C-Sec stands for Caesarean section
5. PPH stands for Post-Partum Haemorrhage
6. Others means foetal/neonatal death or serious disease

There was a strong relation between risk of developing depression with age($p < 0.001$); older patients were at higher risk; client's education($p < 0.001$), less educated had lower chances of depression; number of children($p < 0.001$), clients with less than four children were mostly at low risk of depression, bad obstetric history($p = 0.009$), with positive impact of BOH on EPDS scores, age of LCB($p = 0.010$), high risk clients increased with age of LCB; type of delivery(0.011), 32.6% of patients with SVD had moderate to high risk of depression as compared to 21.8% patients with caesarian section done.

There was a significant negative correlation between number of sons and EPDS-scores (Pearson correlation co-efficient -0.128 and

$p < 0.01$). Figure-1 illustrates that that scores of EPDS were higher, more variable and heterogeneous among subjects with lesser sons; whereas the respondents without daughters had least scores, and those with daughters had more scores without considerable difference in invariance or consistency. None of respondents with more than 2 sons or without daughters had severe depression; while 19.4% and 16.4% of those no sons had moderate and severe depression respectively.

A U-shaped trend was observed on comparing outcome with SEC ($p = 0.013$) and postpartum phases ($p < 0.001$); maximum and minimum risks were disclosed by middle-class and 2-6 weeks postpartum respectively (Figure-2), 34.8% participants who reported in first postpartum phase had severe depression. Similarly, only 3.48% and 11.4% clients documented BOH and postpartum complications respectively, nevertheless, 50% of former ($p = 0.009$) and 28.2% of later had depression ($p = 0.003$). 32.6% of those who underwent SVD ($p = 0.011$) were more susceptible.

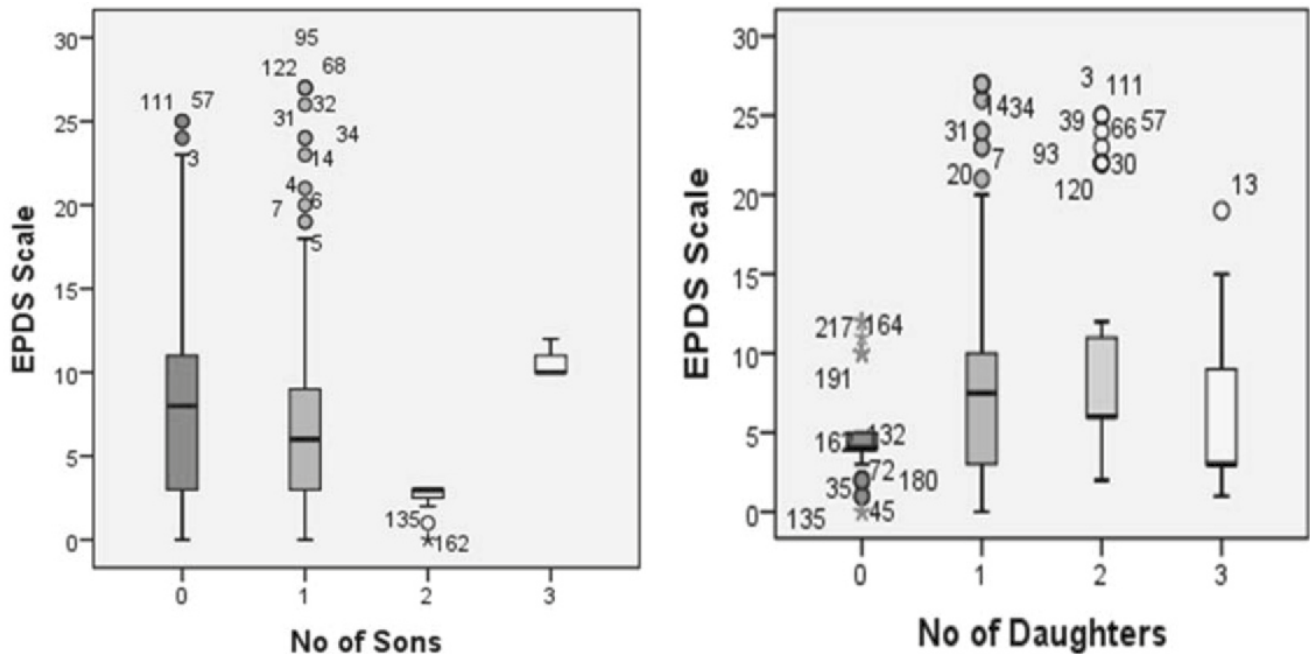


Figure-1. Boxplots illustrate that subjects without sons or no daughters showed highest and lowest EPDS scores respectively.

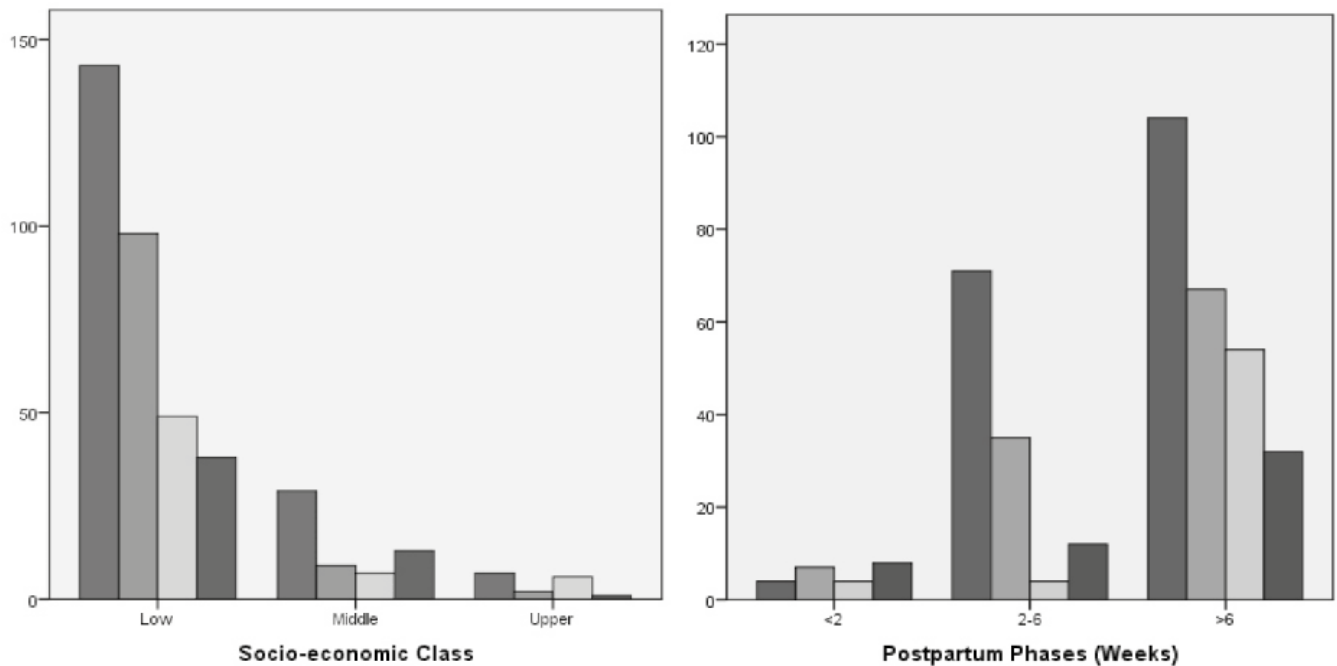


Figure-II: U-shaped trend of post-partum depression in respondents reporting from various socio-economical classes and in different postpartum phases.

There was no significant impact of years since married ($p=0.349$); husband’s education ($p=0.397$) and any previous offspring’s death ($p=0.076$).

DISCUSSION

Health is a state of comprehensive physical, mental and emotional wellbeing. Healthy individuals validate efficacious nations. Health-care facilities are not a prerogative of women in many conventional communities; they are rather the prime victim to impose socio-cultural practices.^{1,18} Reproductive health matters of women are no exception.¹ A mother is the nucleus of every family. Majority of females, especially in under-developed countries, opt for motherhood, which inevitably taxes their health for particular durations. Postpartum phase is described as the fourth stage of labour.⁸ It’s one of the most demanding periods for every woman. Postnatal depression (PPD) is a common mental health phenomenon.^{4,6,19} Patients having physical complications as an aftermath to pregnancy or delivery accede more to psychological trauma.⁸ Psychosomatic insults of PPD may manifest as mere inability to perform daily activities of life to even suicidal tendency.^{12,20-22} Spectrum of behavioral effects of PPD may persist up to 5

years or more.²³ A mother’s role in up-bringing of her children can never be over-emphasized. PPD may cast explicit effects on mother-child health. Physical and mental growth of children especially the infants of depressed mothers is inexorably jeopardized.^{4,6,19,22-25}

In this study, 27.1%, and 28.3% respondents carried low and moderate/severe risk of PPD respectively. Globally prevalence of PPD has persisted as 10-15%^{11,13,23,26}, ranging from 0-60%.¹¹ Literature supports its high occurrence in underdeveloped countries.^{25,27-29} In Asia, PPD is 3.5-63.3%;¹⁴ being reported as 17.3%⁵, 28.8%⁴ and 28-63%⁶ by researchers from Pakistan. Among Asian countries, it is highest in Pakistan and lowest in Malaysia.¹⁴ In India, one research documented 44.6% and 46.9% depression in immediate postpartum and 6-8 weeks postpartum women respectively;³ another endorsed its prevalence as 23%.³⁰ In Bangladesh and Nepal it was 22%³¹ and 12%¹⁵ respectively; while in China and USA it is as low as 8.2%¹⁰ and 11.4% respectively.¹² Halbreich et al proclaimed quite low PPD in Austria, Denmark and Singapore; and a much higher incidence in Brazil. Italy and South Africa.¹¹

In this study, 52.1% and 33.5% of patients reporting in first and third postpartum stages were more depressed. Depression scores were positively correlated with maternal age, education and age of LCB. More predisposed belonged to middle class, had BOH/postpartum complications or had underwent SVD. There was no significant impact of husband's education, years since marriage or death of any previous offspring.

Researchers have described impacts of various demographic and medical features on PPD.^{4,14,16,21,32-34} Poverty is a major association;^{11,14,20} with a surge of PPD in low/middle income countries.^{4-6,16,21,32,33} In South-east Asia, 18-30% of urban and 28-36% rural populations harbor it.^{32,33} Unplanned pregnancy as well as verbal abuse and domestic violence of the mother/ children augmented it.^{4,30} Breast feeding problems^{4,5,13,25} limited social support^{5,11,26,36} and stressful events during pregnancy^{26,34,36} are other contributory factors. Scientists have also compared the effects of SVD to C-section on physical and mental statuses of women.⁸

In Pakistan, socio-cultural and environmental factors magnify PPD;^{6,11} Pakistani women living in countries other than Pakistan also harboured exacerbated levels.⁶ In India, lower socioeconomic status, multi-parity and congenital anomalies are major risk factors.^{20,27,30} Confrontational relations, adverse events during pregnancy and lack of physical also intensify it.^{30,37} Scientists from China negated any significant impacts of maternal age or education, per capita income, unplanned pregnancy or pregnancy/delivery related associations on PPD.¹⁰

This study asserted relation between son preference and severity of depression. Ironically, there were no high risk women among those who had no daughters or had 3 or more sons; while 35.8% of those without a son revealed moderate/severe depression. Penchant for sons is quite apparent in many societies of the world³⁸, especially in Pakistan.¹⁸ Daughters have been claimed to enhance PPD on their arrival.^{27,30}

It was never advisable to confine the management of female reproductive health issues by midwives or gynecologists alone. A multidisciplinary approach to manage gestational and postpartum issues has been considered by many clinicians. Screening and treatment of PPD are becoming obligatory in every obstetric set-up.¹⁷ Electronic and social media have been utilized at limited scales. Interventions like psycho-pharmacotherapy are well investigated; internet based psychotherapy for PPD is an upcoming module.³⁹

This research carried few limitations. Generalizability of results is questionable due to integration of a single health-care institution. Incorporation of additional variables and interviews of spouse/family members of respondents could alter the interpretations. Pre-pregnancy/antenatal screening and serial postpartum scores could yield better inferences.

Nevertheless, this study is distinctive and first of its kind as no similar study has yet been carried out in Peshawar or other cities of relevant province as per the meager knowledge of the authors. Questions posed were proved to be precise and considerable glance of pertinent influential factors was acquired. It was unique to incorporate EPDS; a user-friendly and precise inventory. The study unmasked the tip of a probable iceberg; and as a pioneer report from the concerned region, it provided with a way-forward to carry out similar researches with better modules locally or globally.

CONCLUSION

PPD casts perpetual and detrimental effects on individuals, their families as well as societies. Obstetric management can hardly suffice without psychological mediation. It is mandatory to prevent and preclude PPD by paying due attention to every possible responsible factor in all pregnancies. Screening for depression using standard inventories like EPDS shall be made customary in antenatal and postpartum packages. Multidisciplinary psychosocial interventions for PPD must be advocated in maternal welfare programmes. To temper socio-cultural pressures on females, evidence based medical practices must be preached in every health care set-up.






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