

An Epidemiological Study of Paternal Depression Unfocussed Morbidity of Early ParenthoodDivya¹, Nitin Tiwari^{2*}, Prerna Jain³, Mukesh Sharma⁴, Chandramani Yadav⁵¹Assistant Professor, Department of Gynecology & Obstetrics, ASMC Firozabad, UP²Assistant Professor, Department of Community Medicine, ASMC Firozabad, UP³Professor & Head, Department of Gynecology & Obstetrics, ASMC Firozabad, UP⁴Professor & Head, Department of Community Medicine, ASMC Firozabad, UP⁵Statistician, Department of Community Medicine, ASMC Firozabad, UP

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Conflict of interest: Nil

Abstract:

Background: Paternal depression refers to the condition where a father experiences symptoms of clinical depression. However, this area has received relatively little research attention and there are no interventions or programs for routine screening of fathers for depression in the postnatal period. With this background, a study was planned to estimate the prevalence of paternal depression and to find out the association of various determinants with paternal depression among these fathers after childbirth.

Material & Methods: This prospective study was conducted among postnatal parents of age group 18 to 45 years having children of up to 1 year of age. They were selected randomly and among them, fathers were chosen for face-to-face interviews and screened using the Edinburgh postnatal depression scale, a 10-item questionnaire. The main outcome variable was the prevalence of depression among fathers and its associated factors.

Results: The age of fathers ranged from 18 to 45 years with a mean (S.D.) of 28.03±5.01 years and over one-third (n = 240, 36.4%) of the subjects were first-time fathers. The percent of the fathers scoring as severe depression (EPDS score, 20 and above) was 7.6% (50), moderate depression (EPDS score, 14-19) was 28.8% (190), and mild depression (EPDS score, 7-13) was 62.1% (n=410). Depression in the studied father was found highly significant with the age, occupation, education, birth order, and economic conditions (p<<0.00001).

Conclusion: This study focused on an overlooked issue within the community which is paternal depression and found prevalent in society. There is a need to recognize it and address paternal depression for the well-being of father and their families during the postpartum period.

Keywords: Paternal Depression, Postpartum Depression, Unfocussed Morbidity.

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Introduction

Paternal depression refers to the condition where a father experiences symptoms of clinical depression. It is essentially depression that affects fathers, just as maternal depression refers to depression experienced by mothers. Like any form of depression, paternal depression can have a significant impact on a person's mental and emotional well-being, as well as on their ability to function effectively in their daily life.

Depression among fathers in the postnatal period may have an independent adverse effect on child development and family health. In the perinatal period, maternal depression is a public health problem affecting 10-15% of all women and up to 28% of women living in poverty. [1] Approximately 10-20% of women experience depression either during pregnancy or in the first 12

months of postpartum. It is noticed that up to 50% of postpartum mood affliction cases go unperceived. [2,3]

It usually begins within four weeks of childbirth and may continue for several months or even a year. WHO has dedicated the year 2017 to the theme of depression. Postpartum depression is defined as a type of clinical depression that can affect both sexes after childbirth.

Paternal depression can have significant consequences not only for the father's well-being but also for family dynamics. It can affect the father's ability to engage with and support their partner and children, potentially impacting the overall family's mental health and well-being. [4]

Symptoms of paternal depression are:

1. Sadness.
2. Low energy.
3. Crying episode.
4. Change in sleeping and eating patterns.
5. Deeming oneself insubstantial in taking care of the baby
6. Anxiety and Irritability.
7. Guilt
8. Emptiness
9. Social abolition

Depression is known to be a common disorder in women in the postnatal period with an estimated prevalence of 13% and has been shown to impact negatively their infant's cognitive, social, and behavioral development. [5,6] The mental health of women and the need for identification of mental illnesses such as depression during pregnancy and after the birth (postnatal depression [PND]) of their child is well described in the literature but fathers' mental health is often not considered in the pre and postnatal periods. However, various research's suggests that depression can also affect fathers in the postnatal period with suggested prevalence rates at the lower end of this range (1–25%). [7-11]

Fathers are at risk of depression at postnatal time, expressly if their partner becomes depressed, yet they are usually not the focus of screening. Paternal depression has been linked to child psychopathology and it has been suggested that there is an association between depression in fathers and a variety of negative emotional and behavioral outcomes in children.

Depression among fathers in the postnatal period may have an independent adverse effect on child development and family health. [12]

However, this area has received relatively little research attention and there are no interventions or programs for routine screening of fathers for depression in the postnatal period. Currently, this unfocused morbidity after childbirth is the need of an hour. With this background keep in mind study was planned with the following objectives;

1. To estimate the prevalence of paternal depression among study fathers and
2. To find out the association of various determinants with paternal depression

Materials and Methods:

Study Area: This prospective study was conducted in the Gynecology and Obstetrics department with the collaboration of the Department of Community Medicine, Autonomous State Medical College, Firozabad, Uttar Pradesh.

The study commenced after approval from the institutional ethical committee.

Study Population: This study was conducted among postnatal parents of age group 18 to 45 years having children of up to 1 year of age and was selected randomly.

Exclusion criteria:

1. Parents of one year and above children.
2. Parents on anti-depression drugs.
3. Parents suffering from any psychiatric illness.
4. Any Documented CNS disorders.

Methodology:

Informed verbal consent has been taken from chosen all study parents by explaining the purpose. To maintain anonymity strict confidentiality about records has been assured. Face-to-face interviews were conducted with the study fathers and a pre-designed performance was used to record their responses. Pre-designed performance included the following sections.

In section A, descriptive information of socio-demographic components including age, gender, birth order of the child, type of birth, gender of the child, family size, etc.

In section B, questions about spouse health and relationships were asked.

In section C, all study subjects were further screened using the Edinburgh postnatal depression scale {in the local language}. It gave information on how subjects have been feeling in the past week and included a 10-item questionnaire. Subjects were asked to answer each question in terms of the past seven days. Items were scored from 0 to 3 with a resulting range of 0 to 30 and a score of >13 were taken as likely to be suffering from depression.

Data analysis:

The questionnaire responses were retrieved and entered in MS Excel for further analysis using Epi-info 7.1.3.0 version software. The frequency presentation has been done in the form of tables and graphs. The main outcome variable was the prevalence of depression among fathers.

The Chi-square test and odds ratio have been used to test the statistical significance of the association with various variables. The strength of association has been calculated with Odds ratios (OR) & their respective 99% confidence intervals (CIs).

Observation & Results:

Socio-demographic characteristics:

In our study, a total of 660 parents were enrolled during the study period. The Sociodemographic and descriptive characteristics of the fathers are listed in Table 1. The majority of fathers in the study were Hindu (n = 465, 70.5%) by religion, educated up to high school (n=190, 28.8%), and

semi-skilled workers (n = 278, 82.7%) by occupation. The age of fathers ranged from 18 to 45 years with a mean (S.D.) of 28.03±5.01 years

and over one-third (n = 240, 36.4%) of the subjects were first-time fathers. Most of the fathers belonged to joint families (n = 390, 59.1%).

Table 1: Socio-demographic determinants of study fathers

Variables	Sub-category	Number of Study Subjects (n=660)	Percent (%)	Number of Depressed (n=500)	Percent (%)
Age of father	18-24	160	24%	100	15.5%
	25-30	350	53%	290	43.9%
	31-35	100	15%	70	10.6%
	36-45	50	8%	40	6.1%
Occupation	Skilled	100	15%	70	10.6%
	Semi-skilled	300	45%	260	39.4%
	Unskilled	260	39%	170	25.7%
Education	Illiterate	130	20%	100	15.2%
	Primary	150	23%	140	21.2%
	High School	190	29%	150	22.7%
	Intermediate	90	14%	40	6.1%
	Graduation & above	100	15%	70	10.6%

The gender of children was predominantly male 370 (56.1%) and the rest 290 (43.9%) were females, with birth type 560(84.8%) of normal delivery and the rest 100 (15.2%) by Cesarean section. [Table 2]

Table 2: Various other determinants related to the studied fathers

Variables	Sub-category	Number of Study Subjects (n=660)	Percent (%)	Number of Depressed (n=500)	Percent (%)
Gender of Child	Male	370	56%	280	42.4%
	Female	290	44%	220	33.3%
Birth Order	1	240	36%	180	27.3%
	2	230	35%	150	22.7%
	3 and above	190	29%	170	25.7%
Family Class	Class-II	80	12%	40	6.1%
	Class-III	120	18%	60	9.1%
	Class-IV	380	58%	330	50%
	Class V	80	12%	70	12.1%
Birth Type	Normal	560	85%	410	62.1%
	Cesarian	100	15%	90	13.6%
Family type	Nuclear	7	1%	3	0.45%
	Joint	39	6%	28	4.2%
	3rd Gen.	20	3%	19	2.8%

Prevalence of Paternal Depression: The percent of the fathers scoring as severe depression (EPDS score, 20 and above) was 7.6% (50), moderate depression (EPDS score, 14-19) was 28.8% (190), and mild depression (EPDS score, 7-13) was 62.1% (n=410). There was no depression found in (EPDS score<7) ten subjects (1.5%). [Figure 1]

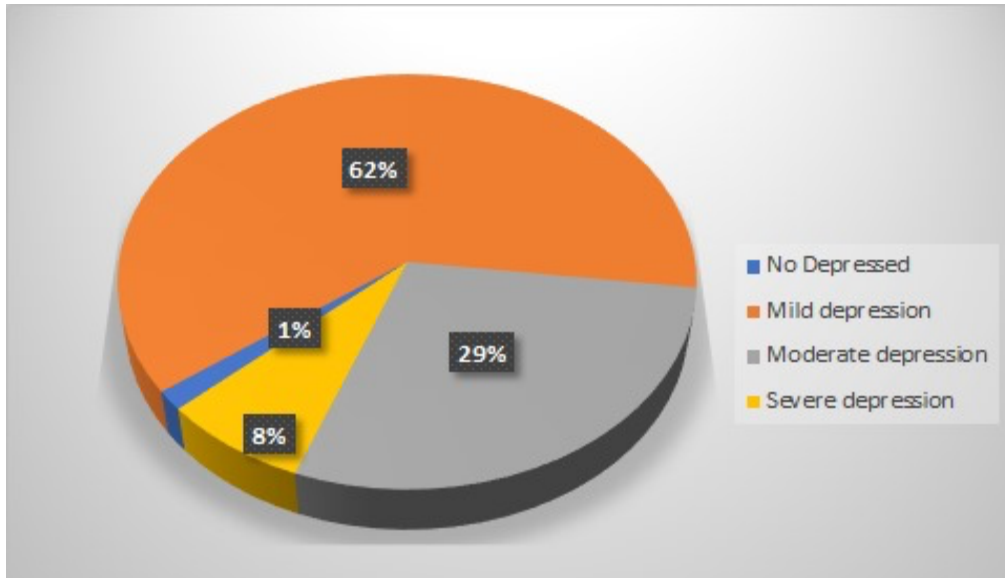


Figure 1: Prevalence of Paternal depression among study subjects

In forty-five participants (6.8%) medical history of adverse mental health problems including anxiety, stress, depression, obsessive-compulsive disorder (OCD), bipolar disorder, and not specified disease was found. Five respondents stated that their spouse had different mental health problems including OCD and postnatal depression. There were couples 28(4.2%) where both the father and his spouse had a history of adverse mental health problems in the past.

Relationship of paternal depression with various determinants:

On observing the relationship of paternal depression with various determinants among study subjects by using a chi-square test, depression in the studied father was found highly significant with the age, occupation, education, birth order, and economic conditions($p < 0.00001$).

Factors like birth type and family socioeconomic class were found significant ($p < 0.00001$).

Rest determinants related to study subjects like family type and gender of child were found insignificant. [Table 3]

Table 3: Various determinants about paternal depression

Variables	Sub-Category	Chi-Square value	p-value	Significance at 99% level
Age of father	18-24	27.2132	<0.00001	Highly Significant
	25-30			
	31-35			
	36-45			
Occupation	Skilled	36.477	<0.00001	Highly Significant
	Semi-skilled			
	Unskilled			
Education	Illiterate	76.23	<0.00001	Highly Significant
	Primary			
	High School			
	Intermediate			
	Graduation & above			
Gender of Child	Male	0.0031	0.9557	Insignificant
	Female			
Birth Order	1	33.4512	<0.00001	Highly Significant
	2			
	3 and above			
Economic Class	Class-II	103.6786	0.00001	Highly Significant
	Class-III			
	Class IV			
	Class V			
Birth Type	Normal	13.01	0.000309	Significant
	Cesarian			

Family type	Nuclear	8.4914	0.014326	Insignificant
	Joint			
	3rd Gen.			

This study showed that paternal depression among fathers is related to their age, occupation, education, mother's higher parity, and lower income of the family.

Discussion:

In the present study majority of fathers were Hindu (n = 465, 70.5%) by religion, educated up to high school (n=190, 28.8%), and semi-skilled workers (n = 278, 82.7%) by occupation. The age of fathers ranged from 18 to 45 years with a mean (S.D.) of 28.03±5.01 years and over one-third (n = 240, 36.4%) of the subjects were first-time fathers. Most of the fathers belonged to joint families (n = 390, 59.1%). The gender of children was predominantly male 370 (56.1%) and the rest 290 (43.9%) were females, with birth type 560 (84.8%) of normal delivery and the rest 100 (15.2%) by Cesarean section.

In forty-five participants (6.8%) medical history of adverse mental health problems including anxiety, stress, depression, obsessive-compulsive disorder (OCD), bipolar disorder, and not specified disease was found. Five respondents stated that their spouse had different mental health problems including OCD and postnatal depression. There were couples 28 (4.2%) where both the father and his spouse had a history of adverse mental health problems in the past.

In this study, the percentage of the fathers scoring as mild depression (EPDS score, 7-13) was 62.1% (n=410), moderate depression (EPDS score, 14-19) was 28.8% (190), and severe depression (EPDS score, 20 and above) was 7.6% (50). There was no depression found in (EPDS score < 7) 10 (1.5%). In a study done by Philpott et al. [14] the prevalence of minor or major depressive symptoms (EPDS score ≥ 9) was 23.8% (95% CI 19.4–28.7) and the prevalence of major depressive symptoms (EPDS score ≥ 12) was 13.4% (95% CI 9.9–17.5). Two systematic reviews have been undertaken to assess paternal depression symptoms by Paulson and Bazemore [15] and Cameron et al. [16]

Based on screening tools, both Paulson and Bazemore and Cameron reported the 3–6-month postnatal period as having the highest prevalence estimate of depression; however, Cameron et al. reported a much lower prevalence rate of 13.0% compared to Paulson and Bazemore who reported a rate of 25.6%. Another study by Philpott and Corcoran [17] assessed depression symptoms in 100 fathers up to 1 year postnatally and reported prevalence rates of 12% for major depression [Edinburgh Postnatal Depression Scale (EPDS)

cut-off score of ≥ 12) and 28% for minor depression (EPDS cut-off score of ≥ 9).

Studies assessing paternal perinatal mental health have reported wide variations in reported prevalence rates. This wide variation may be attributed to diverse settings, sample size, recruitment strategies, inclusion and exclusion criteria, assessment time points, cut-off scores, the use of different measurement tools, and the cultural setting of the study. The sociocultural context of fatherhood can potentially have an impact on perinatal mental health. For example, in cultures where patriarchy is the dominant ideology, and emphasis is placed on the father's role as a 'breadwinner' and provider by Firouzan et al. [18], fathers are more susceptible to stress and anxiety. For fathers in patriarchal societies, worry about family finances and the cost linked with having a baby can act as a catalyst for increased stress and anxiety as stated by Genesoni and Tallandini [19]

On observing the relationship of paternal depression with various determinants among study subjects by using a chi-square test, depression in the studied father was found highly significant with the age, occupation, education, birth order, and economic conditions ($p < 0.00001$).

A study conducted by Nath et al. [20] found that there is a significant association between paternal depression and lower age as well as lower income. Eastwood, Phung, & Barnett, 2011 [21], Rosenthal, Learned, Liu, & Weitzman, 2013 [22] in their studies also suggested the association between depression and low income. Low income and depression may mutually affect each other and have a reciprocal causal relationship Williams & Cheadle, 2016 [23]. The study conducted by Nath et al. [20] and Bergström M. [24] showed that there is a significant association between paternal depression and less educated fathers just like our study.

The increased risk for depression associated with basic education for adults may also be related to an early debut of depression and thus an increased risk for recurrent depression in a lifetime perspective (Paulson & Bazemore, 2010). [25]

A vast literature has pointed to a correlation between mental ill health (including depression) and lower school grades (Schulte-Korne, 2016). [26] The study done by Carlberg et al. [27] showed that a low income was associated with depression in all groups and fathers detected by EPDS were at higher risk if they had three or more children or lower education. Increasing evidence suggests that

depression in fathers after the birth of the child is associated with an adverse impact on child development, independently of the mother's mood (Ramchandani and Psychogiou, 2009).[27] This suggests that successful detection and treatment of depression in both mothers and fathers in the postnatal period could be critical for ensuring the best possible outcome for the child.

Limitations of the study kept in mind that it was a snapshot taken at a point in time and interviewed fathers once a time which is not suitable to assess the causal relationship. Hospital-based settings only represent a small sample of the population so further community-based studies would be planned to find exact morbidity. Despite the limitations, the study is crucial to estimating the prevalence of paternal depression and identifying determinants, allowing to design of future strategies for policymakers and stakeholders for family health.

Conclusion:

This study focused on an overlooked issue within the community which is paternal depression and found prevalent in society. Findings revealed that paternal depression is related to the father's age, occupation, education, mother's higher parity, and income of the family. There is a need to recognize and address paternal depression for the well-being of father and their families during the postpartum period. It is recommended to further evaluate and plan appropriate interventional measures for the father's mental well-being in addition to maternal health. If someone is experiencing the symptoms of depression, it's essential to seek help from a healthcare professional or mental health provider. Depression is a treatable condition, and early intervention can lead to better outcomes for better family health.

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