

Prevalence of Paternal Postpartum Depression in Anuradhapura District in Sri Lanka and Its Association With Maternal Postpartum Depression as a Risk Factor

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Abstract

Objective: This study aimed to determine the prevalence of PPPD in Anuradhapura district, its association with maternal PPD, and relevant risk factors.

Materials and methods: Cross sectional study was conducted among fathers in Anuradhapura district having infants 1-5 months by giving questionnaire specifically developed for the study with Edinburgh postnatal depression scale (EPDS) and self-constructed questions. Out of 6324 fathers, 435 fathers and their partners were randomly selected and proportionately allocated to 5 Medical Officer of Health (MOH) areas. R Program and SPSS have used for the data analysis.

Results: Our results revealed that the PPPD prevalence is approximately 11% (95%CI: 8.08-14.67) based on cut off score of 7 points in the EPDS. PPPD was correlated with maternal PPD (OR 19.16, 95%CI 5.0473-85.1203), income decrement (OR 8.1571, 95%CI 2.4621-32.6289), increased time stayed at home in postpartum period (OR 3.7775, 95%CI 1.2365-13.8175). But other parameters such as infant's age, work time and number of children were not significantly influenced risk factors for PPPD.

Conclusion: PPPD is prevalent in the Anuradhapura district and maternal postpartum depression has positively influenced. But currently, screening programmes for PPPD is lacking in Sri Lanka. Thus, these deficiencies urgently need to be addressed and should provide information and instructions to fathers regarding this new transition. However, these results need replication in more expanded case control study. Since the prevailing covid-19 pandemic at the time of data collection may have impacted the mental health of the fathers specially in countries like Sri Lanka, where mental health support is limited.

Keywords: Depression; Maternal Post-Partum Depression; Paternal Post-Partum Depression

Introduction

Paternal postpartum depression is an emerging global

health issue which often goes undiagnosed and undertreated specially in low- and middle-income countries. "Postpartum depression defined as an episode of non-psychotic depression according to standardized diagnostic criteria with onset within 1

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year of childbirth” (1). Recent studies suggest an overall 17% prevalence of maternal postpartum depression with a 12% incidence among mothers without a prior history of mental disorder (2). Prevalence rates are widely varied between countries (3, 4). A meta-analysis including 40 countries has reported a wide range of paternal postpartum depression prevalence ranging from 0% to 60% with a high prevalence in Brazil, Guyana, Costa Rica, Italy, Chile, South Africa, Taiwan, and Korea while Singapore, Malta, Malaysia, Austria, and Denmark report only a few cases (5). Paternal postpartum depression is higher in the early months after delivery, commonly in 3- 6 months (3, 6) Sometimes depressive symptoms gradually decline (6) and spontaneously recover when reaching later months of the postpartum period but the damage it causes to the father, partner and child may persist for a long period (7). Postpartum depression may increase suicidal risk among fathers (8) and it can cause adverse effects on the mental health of pregnant women and new mothers (9). Also, paternal depression during the first year of infant`s life is a significant predictor of social, emotional and behavioral development of the child (7, 10, 11). This problem has led to a condition which some countries have make their policies to offer paid paternity leaves. Japan, South Korea and Portugal are in the top of the list (12). Therefore, assessing the paternal postpartum depression status is crucial to a country.

Materials and methods

A cross sectional study was conducted among fathers in Anuradhapura district, Sri Lanka having infants 1-5 months by giving questionnaire specifically developed for the study with Edinburgh postnatal depression scale (EPDS) and self-constructed questions. Out of 6324 fathers, 435 fathers and their partners were randomly selected and proportionately allocated to 5 Medical Officer of Health (MOH) areas. R Program and SPSS have used for the data analysis.

Results

The prevalence of paternal postpartum depression is approximately 11% (95 % CI: 8.08, 14.67) as in the Table 1.

The chi-square test of independence was used to evaluate whether there is a significant association between the PPD, and the other related variables. This shows that only, homestay increased (homestay inc [1]), partner`s maternal postpartum depression (PMPD [1]) (table 2), income decreased (income

dec[1]) (table 3), alcohol usage decreased (alcoholic dec[1]) (table 4) have a significant positive influence on PPD at 95% confidence level.

Table 1: Prevalence of Paternal Postpartum Depression (PPD)

	Number of parents	Percentage
PPD negative	309	89.05
PPD positive	38	10.95
Total	347	100

While the other parameters such as infants age (age), homestay decreased (homestay dec), work time increased (work time inc), work time decreased (work time dec), income increased (income inc), and number of children (children) were not significantly influence risk factors for the PPD (Table 5).

Table 2: Incidence of maternal postpartum depression

		PPD Negative fathers	PPD Positive fathers	X ²	p-value
Maternal PPD	No	189	17	32.1590	<0.0001
	Yes	11	11		

The partner`s MPD ($p < 0.0001$) is a significant risk factor on paternal postpartum depression.

Table 3: Incidence of decreased income

		PPD negative	PPD Positive	X ²	P value
Income decrease	Yes	39	15	15.7750	<0.0001
	No	161	13		

It has a statistically significant effect for paternal postpartum depression (PPD), and the odds ratio is 19.16 (95% CI: 5.0473, 85.1203) implies that the husband of a maternal postpartum depression (PMPD=1) positive mother is 19.16 times more likely to develop paternal postpartum depression (PPD=1) than the husband of the maternal postpartum depression (PMPD=0) negative mother.

Table 4: Incidence of decreased alcohol use

		PPD negative	PPD Positive	X ²	P value
Alcohol use decreased	Yes	48	11	2.9920	0.0837
	No	152	17		

Paternal PPD during 6 months period of time was associated with decrement of income (8.1571, 95% CI 2.4621-32.6289). Although it was revealed

that income decrement has affected on paternal PPD, it is possible that this was affected by prevailing COVID-19 pandemic at the time of data collection.

Table 5: Incidence of decreased work time in two groups

		PPD negative	PPD Positive	X ²	P value
Work time decreased	Yes	38	14	13.4070	0.0003
	No	162	14		

The alcohol use decreased group 1 (alcoholic dec=1=yes) has 3.44 (95% CI: 1.1824, 10.5599) times the odds of the group 2 (alcoholic dec=0=no) of having PPD (PPD=1=positive).

Paternal PPD during 6 months period of time was associated with decrement of work time. (2.483 95% CI 0.8511- 7.2193)

Discussion

Paternal depression during the first year of infant's life is a significant predictor of social, emotional and behavioral development of the child (7,10,11). This problem has led to a condition which some countries have made their policies to offer paid paternity leaves. Japan, South Korea and Portugal are in the top of the list (12). Therefore, assessing the paternal postpartum depression status is crucial to a country. Sri Lanka – In Sri Lanka, there is growing evidence indicating the high prevalence of maternal postpartum depression (13). Maternal and paternal postpartum depression correlates significantly (14-17). Therefore, it is important to assess the maternal postpartum depression with the prevalence of paternal postpartum depression to detect whether there is a direct relationship even within Sri Lanka. Surprisingly, no any study on paternal postpartum depression has been done in Sri Lanka. Usually, mental illnesses are associated with a high economic burden of a country (18). Concerning depression, improvement of symptoms after the treatments has increased workplace productivity which has ultimately led to substantial cost saving for the economy of the country (19). Thus, detecting and treating depression in fathers in the postpartum period may have a good impact on the economy of a country. For Sri Lanka also, it is important since the majority of economically active individuals are males (20). Socioeconomic factors such as low family income, father's unemployment (21), low education (22) and living in rented accommodation are significant risk factors of paternal postpartum

depression (17, 23). Poor sleep (24), maternal depressive symptoms, poor marital relationships (21, 25), previous history of a mental disorder, poor social support and child temperament (17) are other major predictors (23). More than 90% of residents in Anuradhapura district belong to rural sector with low educational level and income which may be major forces of paternal postpartum depression (26).

Our study findings have confirmed that PPPD is prevalent in Anuradhapura district. But currently, screening programmes for PPPD is lacking in Sri Lanka. Thus, these deficiencies urgently need to be addressed and should provide information and instructions to fathers regarding this new transition, as PPPD can have detrimental effect on the wellbeing of the family unit.

However, these results need replication in more larger case control study. Since the prevailing covid-19 pandemic at the time of data collection may have affected the mental health (4) and economic status of the fathers specially in lower middle-income countries like Sri Lanka (5), where mental health support is limited and unemployment rates increased during the pandemic.

Conclusion

This cross sectional study showed that PPPD is prevalent in Anuradhapura district. But currently, screening program for PPPD is lacking in Sri Lanka and needs to be urgently addressed. However, these results need replication in more larger case control study.

Conflict of Interests

Authors have no conflict of interests.

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