Prevalence of Parental Postnatal Depression in Fathers and Its Relationship with Demographic Characteristics

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Article info:
Received: 01 Mar. 2015
Accepted: 30 Jun. 2015

Keywords:
Parental postpartum depression, Iran

ABSTRACT

Background: Childbirth brings many changes to family and fathers who are at risk of depression. During this period, fathers face a lot of challenges and several new roles. Negative effects of paternal postpartum depression (PPND) affect marital/partner relationships, infant bonding, and child development. This study aimed to investigate the prevalence of PPND and its relationship with some individual characteristics.

Methods: This research is a descriptive cross-sectional study. The statistical population was all literate men whose wives had recently given birth to a child. The method of sampling was consecutive technique. A total of 328 men were recently become fathers. All samples completed the demographics questionnaire during their wives' hospitalization after delivery. Then 8 weeks later, they completed Edinburgh questionnaire at home or hospital. Data were analyzed by Chi-square test (using SPSS software version 14).

Results: The findings revealed that 59.8% of the fathers had postpartum depression, and depression rate was higher in the age range of 30-39 years (65.5%) (P=0.202). The depression was more in men who were low-educated (61.8%) and whose partners were housewives (59.4%). There is a significant correlation between men's employment and depression (P=0.018). The depression was more in unemployed men; therefore, bad economic situation can be a reason for severe depression (65.5%).

Conclusion: Considering high prevalence parental postpartum depression and its multifactorial nature, dealing with each effective factor can decrease the probability of parental postpartum depression. Also, its prompt diagnosis and treatment decreases the consequences of this problem in mother, infant, and family and improves family performance and quality of life.

1. Background

Depression is a prevalent psychological disorder associated with substantial and wide-ranging negative effects on individuals' functioning (Wilson & Durbin 2010). Recent studies show significant number of fathers who experience depressive symptoms in the postnatal period (Bergström 2013). Childbirth brings many changes to family and fathers who are at risk of depression. The prevalence of parental postnatal depression (PPND) within 2 months after childbirth is different and ranges from 24% to 50% (Goodman 2004). Postnatal depression affects a significant proportion of newly fathers, with a prevalence rate ranging from 1% to 49% in Western

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societies (Lai et al. 2010) and 31% in a group of Chinese fathers from Taiwan (Wang & Chen 2006).

It was long believed that PPND is limited to mothers and does not include fathers. Fathers accept new and difficult roles after the birth of newborn and this is deeply dependent on parents' cooperation (Tannous 2008). However, about 4.8% of newly become fathers suffer from depression; 4.8% will suffer 3 months after childbirth, and 23.8% will suffer almost 12 months after childbirth (Posmontier 2008). In a study carried out in Copenhagen University during 2004-2006 on postpartum depression in men, it was revealed that 3% to 5% of men ranged 20 to 50 years old had depression. Other studies revealed that about 41% of women and 10% of men will suffer from PPND (Christian 2008).

Men deny their sadness because they think they are the stronger sex. Men instead of showing symptoms related to excitement, probably talk about symptoms such as fatigue (Leigh 2008) trihe postpartum period, such as change in marital relationship, financial concerns, and Stressors in the postpartum period such as changes in marital relationship, financial concerns, and sleep deprivation are risk factors of depression that affect fathers (Hossain, Field, Gonzales, & Malphurs 1994). Depressed or sad mood, marked loss of interest in almost any activity, significant weight loss or gain, insomnia or hypersomnia, psychomotor agitation or retardation, fatigue or loss of energy, feelings of worthlessness or guilt, diminished ability to think or concentrate, and recurrent thoughts of death are some changes experienced by fathers at this time (Melrose 2010). Fathers may withdraw from social situations and present with indecisiveness, cynicism, avoidance, anger attacks, affective rigidity, self-criticism, and irritability (Schumacher, Zubaran, & White 2008). These symptoms as well as other behaviors may be present in depressed newly become fathers (Pilyoung & Swain 2007).

Research has shown that depression is not only correlated with low energy and lack of pleasure, but also with impaired growth and development in the children (Paulson & Bazemore 2010). New fathers are vulnerable, and their symptoms can also affect the mother and child (Bergström 2013).

Depression in fathers in the postnatal period may have an independent adverse effect on child development. There is a relationship between depression in fathers and a variety of negative emotional and behavioral problems in children (Ramchandani, Stein, Evans, & O'Connor 2005).

PPND can negatively affect infant care and bonding, is stressful to the family unit, and has been linked to later child psychopathology such as conduct and emotional disorders, hyperactivity, anxiety and depression, as well as language delays (Edoka, Petrou, & Ramchandani 2011).

PPND is associated with higher community care costs, which entails more research concerning cost-effective prevention and treatment options (Edoka et al. 2011). Providing anticipatory guidelines such as signs, symptoms, and risk factors may help fathers recognize their new feelings after the birth of their babies and know when to seek help.

When a person needs help for treatment, in most cases there is some possibility for effective treatment. If the depression continued, referring to the doctor must not be postponed because earlier diagnosis helps patient prevent from complications of disease. Thus, screening is necessary for diagnosis of this disease. In this regard, early diagnosis of PPND in fathers could be one of the applied purposes of this research.

2. Materials and Methods

This research is a descriptive cross-sectional study, conducted in Akbarabadi Hospital Tehran, Iran in 2013. The statistical population was all literate new fathers. The sampling method was consecutive technique. Having obtained the required permits, the researchers attended the hospital on morning and evening shifts. The samples had the minimum literacy of writing and reading. The researchers explained the purpose of the study and obtained the participants' written consent forms. Then, the researchers ensured the fathers that they can leave the study whenever they desire. Confidentiality and anonymity of the participants were guaranteed throughout the study.

All samples completed the demographics questionnaires during their wives' hospitalization after childbirth. Sampling took a period of 6 months from February 2013 to July 2013. After 8 weeks, they completed Edinburgh questionnaire at home or hospital (in order to study men's depression). The sample size was estimated at 328 subjects (Confidence internal of 95% and power of 80%). The instruments for data collection were demographic questionnaire, including information on age, sociodemographic characteristics, and economic status; Edinburgh postnatal depression scale; and the employment validated screening tool. The Edinburgh postnatal depression is a 10-item questionnaire that was developed in 1987 by Cox et al.

Table 1. Frequency distribution of newly become fathers regarding postpartum depression (n=328).

Men's depression	No.	Percent
Yes	196	59.8
No	132	40.2
Total	328	100

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Each item scores from 0 to 3. In items 1, 2, and 4, option (D) has the highest score and option (A) the lowest score. This was vice versa in other items, i.e. the highest score goes to option (A) and the lowest score to option (D). If the samples of study did not answer even one question, the questionnaire will be discarded. The minimum score is 0 and the maximum is 30. The lower score shows the better status of a person and score over 12 indicates probable existence of depression disorder. The scientific validation of questionnaire was studied and confirmed by the method of content validity. This questionnaire was given to 10 experts and their opinion was considered. The reliability of the Edinburgh questionnaire was determined by internal consistency (The Cronbach α=0.92).

Many researchers have used Edinburg questionnaire in postpartum depression. The validity of this questionnaire has been confirmed in many countries such as Italy, Portugal, and Sweden. The reliability of the Edinburg questionnaire has been determined by Abadian Sharif as 90%. The validity of questionnaire was specified by Cox et al. on 87 samples in 1987. Its sensitivity, specificity, and positive predictive value were 86%, 78%, and 73%, respectively. The personal information sheet was completed by samples at the presence of researcher and Edinburgh postnatal depression scale was completed 8 weeks after childbirth. The obtained information was analyzed by Chi-square statistical test (using SPSS software version 14).

3. Results

Table 1 shows that 196 (59.8%) men had depression. Depression is higher (65.5%) in age group of 30-39 years compared to other age groups (Table 2), but the Chi-square test did not reveal a significant correlation between these two variables (P=0.202). The relationship between depression in men and level of education revealed that men with elementary education had 61.8% depression. Those with guidance school education had 58.6% depression. Fathers with high school education had 62.6% depression. Finally, those with university degree had 42.1% depression. The Chi-square test did not reveal a significant statistical correlation between these two variables (P=0.457).

The study on employment status of wives revealed that depression was higher in men (59.4%) whose wives were not employed. The result of Chi-square test showed no significant correlation between these two variables (P=0.457). The results indicated that the highest rate of depression was in unemployed men. There was significant correlation between type of job and depression

Table 2. Frequency distribution of study participants according to individual characteristics and depression status.

Individual characteristics		Healthy	Depressed	Statistical test results
Age range, y	19-29	69	81	X^2=4.624, df=3, P=0.202
		45%	54	
	30-39	48	91	
		34.5%	65.5	
	40-49	11	25	
		41.2%	58.8	
	50 and over	0	3	
		0%	100	
	Total	128	200	
		40.0%	59.6	

Individual characteristics		Healthy	Depressed	Statistical test results
Level of education	Elementary	29	48	X^2=3.051, df=3, P=0.384
		38.2%	61.8%	
	Guidance school	48	68	
		41.4%	58.6%	
	High school	43	72	
		37.4%	62.6%	
	University degree	48	8	
		41.4%	42.1%	
	Total	132	196	
		40.2%	59.8%	
Employment status of mothers	Employed	10	10	X^2=0.552, df=1, P=0.457
		50%	50%	
	Housewife	119	189	
		40.6%	59.4%	
	Total	129	199	
		41.1%	58.9%	
Employment status of fathers	Unemployed	9	16	X^2=15.015, df=3, P=0.18
		20%	80%	
	Worker	46	89	
		34.1%	65.9%	
	Employee	20	20	
		50%	50%	
	Self-employed	61	67	
		47.7%	52.3%	
	Total	136	192	
		40.6%	59.4%	
Economic Status	Good	14	7	X^2=8.26, df=2, P=0.18
		73.3%	26.7%	
	Average	85	121	
		41.5%	58.5%	
	Poor	37	64	
		34.5%	65.5%	
	Total	136	192	
		41%	59%	

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(P=0.18). Unsuitable economic condition could increase men's depression (65.5%). The results of Chi-square test statistically confirmed this correlation (P=0.018).

4. Discussion

In this study, the prevalence of depression in newly become fathers was 59.8%. In another study, the depres-

sion rate in recently become fathers after childbirth was reported as 1.2% to 25.5% (Leigh 2008). In an analytical study in American School of Medicine, it was revealed that out of 28000 men whose wives had recently given birth, almost 10% had depression since 3 months before birth to one year thereafter (Paulson, Dauber, & Leiferman 2006). In the present study, most men had depression.

In this study, there was no correlation between depression and demographic variables (age, level of education, and wife's employment status). Lashgaripoor et al. (2011) reported that there was a significant correlation between depression and level of education in such a way that depression was higher in men with lower education. Low educational level is a known risk factor for depression in men (Kessler et al. 2005). The results of another study revealed that there was a significant statistical correlation between wife's education and PPND. It seems that higher level of education brings about better job, better income, and increase in awareness regarding wife's mental and physical needs. Education has not only is influenced by factors such as cultural and economic status, it also impacts on these factors. (Khadiv Zadeh et al. 2009). However, in the present study, there was no significant correlation between education and postpartum depression.

This study revealed that there was a significant correlation between type of the job and depression. The study of (Khorrami Rad et al. 2011) revealed that there was a significant correlation between family economic status and postpartum depression. Social vulnerability, including unemployment, financial concerns, and low educational level are known risk factors for depression in men (Kessler et al. 2005). They considered family economic status as an important factor in postpartum depression (Khorrami Rad et al. 2011).

Since PPND as a social and family problem has a high prevalence and several factors are involved in its development, paying attention to each of these effective factors might decrease the probability of postpartum depression. Also, early diagnosis and treatment reduces its consequence in mother and baby and improves family performance and quality of life.

Conflict of interests

The authors declared no conflict of interests.

Acknowledgements

We appreciate the cooperation of Center for Nursing Care Research of Iran University of Medical Sciences, respectable personnel of Shahid Akbarabadi Hospital, and all fathers who assisted us in this research.

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