

## The Effect of Expectant Fathers' Training on Paternal-fetal Attachment

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### ARTICLE INFO

*Article type:*  
Original article

*Article History:*  
Received: 24-Sep-2016  
Accepted: 17-Dec-2016

*Key words:*  
Attachment  
Paternal-fetal attachment  
Training

### ABSTRACT

**Background & aim:** Paternal-fetal attachment develops an emotional relationship between father and his infant which can affect their future interactions. Therefore, the present study aimed to determine the effect of expectant father's training on paternal-fetal attachment.

**Methods:** This clinical trial was conducted in two health centers in Mashhad, Iran in 2015. The participants consisted of 60 randomly-selected expectant fathers whose wives' gestational age was 28 to 32 weeks. The intervention group received three 120-minute sessions of attachment training once a week as group discussion, lecture, video and educational booklet. Data collection was performed by means of two questionnaires including questionnaire for personal characteristics and fertility-related data and Weaver Cranley paternal-fetal attachment questionnaire. Two groups were assessed before, immediately after, and 3 weeks following intervention (follow-up) by paternal-fetal attachment questionnaire. Data analysis was performed in SPSS (version 22) using the Chi-square, independent t-test, Fisher's exact test, Mann-Whitney U test, and repeated measure ANOVA.

**Results:** The results of repeated measures showed that mean scores of paternal-fetal attachment was not significantly different between the control and intervention groups before training ( $P=0.527$ ). However, paternal-fetal attachment significantly increased at post-test ( $P=0.069$ ) and follow-up ( $P=0.006$ ) measurement in the experimental group compared to the control group.

**Conclusion:** Attachment training increases paternal-fetal attachment; therefore, pregnancy care programs should include training sessions for expectant fathers.

#### ► Please cite this paper as:

Nosrati A, Mirzakhani K, Golmakani N, Esmaeili H, Asghari Nekah SM. The Effect of Expectant Fathers' Training on Paternal-fetal Attachment. Journal of Midwifery and Reproductive Health. 2019; 7(2): 1594-1601. DOI: 10.22038/jmrh.2019.19194.1199

## Introduction

Paternal-fetal attachment is a kind of father's deep feeling of love and interest toward the unborn child, which is the basis of the paternal identity (1). The World Health Organization (WHO) reported that the assessment and identification of appropriate strategies for fathers' involvement in the process of pregnancy and childbirth is necessary. Moreover, WHO

emphasizes on the role of fathers in safe maternal programs (2). Despite the emphasis of the International Conference on Population and Development (1994) on promoting the participation of men in performing their responsibilities, including paternal role (3), in some cultures, there is a belief that the reproductive issues are specific to women and

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there is no need for men involvement (4). In fact, the main barriers for men involvement in pregnancy preparedness includes the traditional approach to the role of father, lack of pattern (5), little knowledge about their roles and responsibilities, and lack of information about the needs of pregnant mothers (6, 7).

There is contradictory evidence regarding different ways that parents interact with their fetus (8). Candon (1985) was the first researcher who performed a study among the couples about their thoughts, feelings, and behaviors toward the fetus by attachment tool. The obtained results of the study showed that thoughts and feelings of couples toward the fetus were the same. However, there was a significant difference between fathers and mothers in terms of attachment behaviors. For instance, fathers speak less with their fetus, and seek less information about their neonates. It is worth mentioning that attachment formation began at the same time, following the first movement of the fetus (9).

The results of the study by Teitler (2001) showed that fathers who have more attachment to the fetus become more sensitive to the onset of their pregnancy and adherence to prenatal care of their wife in terms of nourishment and sleep. Moreover, they also have a better relationship with their child after birth (10). In contrast, Zachariah (1994) found that there was no association between father's attachment and his relationship with mother or child (11). Astaraki et al. (2012) also did not observe any significant relationship between fathers' participation in childbirth preparation classes and fetal attachment behaviors (12). Finally, little information is available on psychological changes, the role of father, and the paternal-fetal attachment behaviors (13).

There is much evidence that education is related to healthy behaviors, and trained people perform more healthy behaviors (14). As WHO reported, education is a key component of prenatal care (15). The support for this refers to the training of fathers in Indonesia, which increased their knowledge and readiness for the delivery of their spouse (16). In another study in Nepal, the presence of husbands in pregnancy educational classes increased the maternal

mental health and knowledge levels of mothers compared to the control group (17).

With regard to the above-mentioned studies on the responsibility of a father for the health and survival of the family, low level of spouse participation, and few studies on the paternal-fetal attachment, it is necessary to carry out comprehensive studies focusing on paternal attachment. Therefore, given the important role of fathers during pregnancy and postpartum period, it seems that there is a dearth of research addressing this in Iran. Accordingly, this study aimed to determine the effect of attachment training on paternal-fetal attachment.

## Materials and Methods

This clinical trial study was performed on 60 spouses of primiparous women referring to the two healthcare centers of Karmandan and 22 Bahman (supervised by health center district No. 5 in Mashhad) in 2015. Subjects were selected by convenience sampling method and were randomly allocated to two equal groups of intervention (n=30) and control (n=30). The mean comparison formula was used to determine the sample size. The sampling procedure was performed after the approval of the study by the Ethics Committee (Ethical code: 940546) of Mashhad University of Medical Sciences. In line with ethical consideration, the participants were informed of the purpose of the study. Furthermore, written informed consent was obtained from all participants.

The inclusion criteria for fathers were a) Iranian and resident of Mashhad, b) literacy of reading and writing, c) single spouse, and d) first-time fatherhood. The exclusion criteria were unwillingness to continue cooperation, absence of more than one training session, unpleasant and stressful events during the study. The data collection was performed by means of research unit selection form, the questionnaire of personal and fertility characteristics, and the questionnaire of Weaver Cranley paternal-fetal attachment (1983). Personal and fertility characteristics questionnaire consisted of two parts, namely personal characteristics (including age, education, occupation, income level, status of residence) and fertility (including wife's age of pregnancy, wanted pregnancy, fetus gender,

satisfaction from fetus gender, father's feeling about wife's pregnancy, effects of pregnancy on couples' relationship).

The Weaver Cranley paternal-fetal attachment questionnaire consisted of 5 subgroups including interaction with fetus (5 statements), the distinction between themselves and fetus (4 statements), acceptance of parental role (4 statements), the attribution of characteristics to fetus (6 statements) and self-sacrifice (5 statements) in 24 statements. This questionnaire is rated on a five-point Likert ranging from always (score 5) to never (score 1). Therefore, the higher score, the more attached the father is. The obtained results revealed that the minimum earned score was 24, and the maximum score was 120. However, question number 21 was reversely scored. The validity of Weaver Cranley paternal-fetal attachment questionnaire was confirmed by Astaraki et al. (2012) and its reliability was confirmed by internal coherence and Cronbach's alpha coefficient of 0.83 (12). In this study, the validity of the personal and fertility characteristics questionnaire and Weaver Cranley paternal-fetal attachment questionnaire was confirmed through content validity, and the reliability of the Weaver Cranley paternal-fetal attachment questionnaire was confirmed with Cronbach's alpha coefficient ( $r = 0.85$ ).

The research process began by the completion of the informed consent form, the research unit selection form, the personal and fertility characteristics questionnaire, and Weaver Cranley paternal-fetal attachment questionnaire by the participants in the intervention and control groups. The intervention group participated in the educational program three times, each session was two h once a week in the form of group discussion, lecture, question and answer, film screening and educational booklet. The first session covered the topics on stages of fetal growth (film screening), common problems, and physical changes of women during pregnancy. In the second session dealt with psychological and mental changes, importance of pregnant women mental health and its impact on family health, as well as duties of the spouse during pregnancy. The topics in the third session entailed the father's role, the concept of attachment and paternal-fetal attachment, the time of paternal-fetal attachment

formation, the ways of communication with fetus, and the parental-fetal attachment behaviors. Immediately and three weeks after the intervention, the paternal-fetal attachment questionnaire was completed by two intervention and one control groups for the follow-up of information retention. The Chi-square, independent t-test, Fisher, Mann-Whitney U test, repeated measures were used to analyze the data using SPSS software (version 22).

## Results

In this study, fathers in the intervention and control groups were homogeneous in terms of age, gestational age of wives, education, occupation, income level, and residency status ( $P < 0.05$ ). The mean age of fathers in the intervention and control group was  $28.07 \pm 0.76$  and  $27.6 \pm 0.80$ , respectively. Moreover, the mean of gestational age of the wives was  $23.83 \pm 0.77$  and  $24.50 \pm 0.74$  in the intervention and the control group, respectively. Regarding the educational level of the participants, 76.7% of the fathers in the intervention group and 66.7% of the fathers in the control group had diploma or a degree of a higher level. Table 1 shows some of the underlying features of the research units.

The fathers in two groups were homogeneous in terms of wanted pregnancy, fetus gender, satisfaction of fetus gender, their feeling about their wives' pregnancy, and the effect of pregnancy on their relationship with their wives ( $P < 0.05$ ). The rate of wanted pregnancy was 83.3% and 93.3% in the intervention and control group, respectively. The gender diagnosis revealed that 66.7% of fetuses in the intervention and 60% of them in the control group were male, which kept 100% and 97% of fathers satisfied in the intervention and control group, respectively. The attitudes of 63.3% of fathers in both groups toward their wife's pregnancy was positive, and 73% of the fathers in both groups had a good emotional relationship with their wife during pregnancy.

The results of independent t-test were indicative of no significant difference between the two groups in terms of the mean score of paternal-fetal attachment ( $P = 0.527$ ). There was also no significant difference in the mean scores of paternal-fetal attachment between the two

**Table 1.** homogeneity of intervention and control groups

Variable		Groups				Test result
		Intervention		Control		
		N	%	N	%	
residency status	Rent	17	56.7	14	46.7	P=0.579 df=3 chi-square =1.967
	Personal	6	20	9	30	
	Other	7	23.3	7	23.3	
	Total	30	100	30	100	
Income level	Less than enough	7	23.3	7	23.3	p=0.999 df=1 chi-square =0.001
	Enough	23	76.7	23	76.7	
	Total	30	100	30	100	
Men's occupation	Student	2	6.7	1	3.3	p=0.610 df = 3 chi-square=2.115
	worker	3	10	2	6.7	
	employee	6	20	3	10	
	Free	19	63.3	24	80	
	Total	30	100	30	100	

**Table 2.** Mean and standard deviation of "paternal-fetal attachment" scores before intervention, immediately after intervention, and in follow-up stage in two groups of intervention and control

variable		Group				independent t-test result
		Intervention		Control		
		Mean±SD	N	Mean±SD	N	
paternal-fetal attachment	before intervention	87.97±12.07	30	90.37±16.78	30	t=0.636 df=58 p=0.527
	immediately after intervention	96.40±11.81	30	89.50 ±16.39	30	t= 1.871 df= 58 p=0.066
	follow-up stage	101.07±11.53	30	91.23±14.75	30	t=2.877 df= 8 p=0.006
repeate measures test result		F=53.437 df=2 p<0.001		F = 1.272 df=2 p=0.296		

groups immediately after intervention (P=0.66). However, the results of the t-test in follow-up showed that the mean scores of paternal-fetal attachment in the intervention group were significantly higher than the control group (P=0.006). Moreover, the results of repeated measure test showed that the mean scores of paternal-fetal attachment were significantly different at the beginning of the intervention, immediately after the intervention, and follow-up in the intervention group (intra-group comparison,  $p < 0.001$ ). However, as reported in Table 2, there was no significant difference in the control group among these three stages (P=0.296).

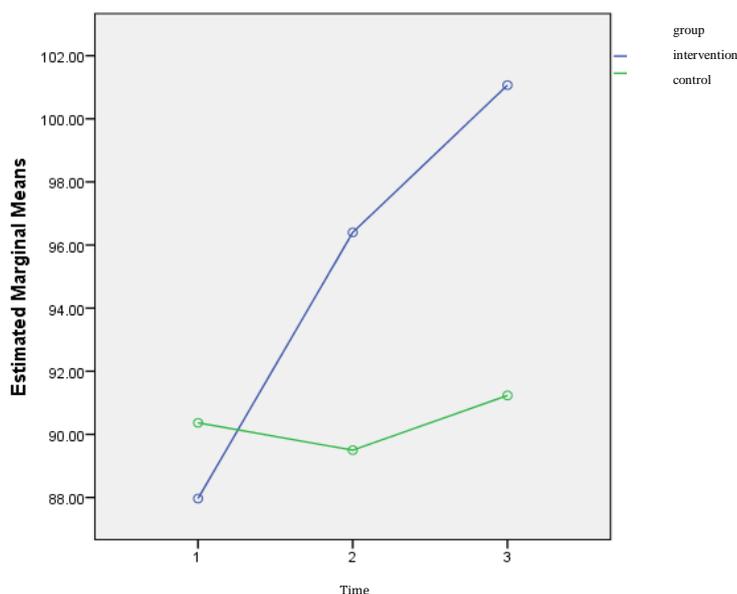
As table 3 tabulates the mean scores of paternal-fetal attachment after intervention

were significantly higher in the intervention group. It should be mentioned that the results were obtained by considering the fact that in the control group repeated measure test was used to compare the effect of intervention between the intervention and control groups before and after the program at three stages. Therefore, the zero time (pre-test) as a confounder in the model was measured by eliminating the effects of paternal-fetal attachment score before intervention as an interventional variable.

As figure 1 shows the effect of time is statistically significant (P=0.007), accordingly, the mean of paternal-fetal attachment increases in both groups, although this increase is significantly higher in the intervention group.

**Table 3.** Results of repeated measures test on the effect of educational intervention on the mean scores of "paternal-fetal attachment" by controlling the variable of "paternal-fetal attachment" scores before training.

Variable	Coefficient	Test	P
The effect of group at the time of Intervention Immediately after intervention Control	8.91	T=4/627	<0.001
The effect of paternal-fetal attachment score at the beginning of the training on the score of attachment immediately after the intervention	0 0.838	- T=12/542	- <0.001
The effect of group at the time of follow up	11.55	T=5/435	<0.001
The effect of paternal-fetal attachment score at the beginning of the training on the score of attachment at follow up stage Time	0 0.715	- T=9/701	- <0.001
		F=2/69	0.007



**Figure 1.** Mean of paternal-fetal attachment in the experimental and control group at different times

### Discussion

The purpose of this study was to determine the effectiveness of training the attachment in order to increase the paternal-fetal attachment. The results of repeated measure test showed that the paternal-fetal attachment score significantly increased in the intervention group in the post-test and follow-up stages compared to the control group ( $P < 0.001$ ). The results indicated that training attachment was highly effective in developing the relationship between father and fetus. Moreover, the increasing growth in the attachment in the post-test phase confirms that modifying the parental-fetal communication pattern increases the attachment in the fathers, which can lead to the improvement in the physical and psychological health of the family.

Attachment during pregnancy can be observed in a wide range of behaviors, such as talking to the fetus, touching and massaging the abdomen, reading books, and playing music. These behaviors may begin at the beginning of pregnancy, during initial ultrasound, or during the first movement of fetus (18). In this regard, the results of the studies conducted by Latifses et al. (2005) showed that teaching fathers how to massage and relax could increase paternal-fetal attachment and decrease anxiety of fathers (19) which was consistent with the findings of the present study. Pregnant women who receive massage will sleep better and become less anxious and depressed. Stimulation of the fetus via stroking induces a sense of security and improves the neonate's brain development

and learning. In addition, neonates born from mothers who receive massages during pregnancy encounter less problems during the first few weeks of birth (20).

The results of the study conducted by Seimyr et al. (2009) also indicated that paternal-fetal attachment has a positive relationship with maternal-fetal attachment, which is a reflection of couples' attachment to fetus (21). In this regard, Akbarzadeh et al. (2012) carried out a study which showed that group training of attachment skills to fathers decreases anxiety and increases maternal-fetal attachment (22). The results of the studies by Sajjadi Anari et al. (2014) and Abbasi et al. (2010) also showed that training of attachment program increases maternal-fetal attachment (23, 24). Mothers who have a better relationship with their fetus have healthy behaviors and health care; moreover, they do their best to provide child's physical, mental, and psychological well-being for their child (23). In the study conducted by Bellieni et al. (2007), teaching attachment skills through music and abdominal massage to mothers in the first and second trimester of pregnancy increased attachment to the fetus (25). Playing music can have positive effect on fetal brain development, as well as pre-natal learning, improving the baby's sleeping habits, and emotional bonding in childhood (26).

The WHO (2007) considers group education and discussion as the most effective way to change behaviors (27). In line with the findings of the present study, the results of the study by Dachman et al. (1986) indicated that teaching baby care and communicative skills to six fathers during pregnancy and postpartum period of their wives increased the fathers' skills in caring and responding to the needs of the child. Despite the positive results, this study could not be generalized due to the small sample size (28). Pfannenstiel et al. (1991) also mentioned that communication skills training increased the response of the fathers to the needs of the child in the intervention group, while this increase was not significant in the group control (29). In the study by Parr (1998), parental-fetal attachment training program increased parents' mental health, self-esteem, and satisfaction with fetus communication in the intervention group, while there was no

significant difference in the control group (30).

The studies conducted by McElligott (2001) and Pollock (2001) showed that despite the desire of fathers to participate in prenatal care, mothers were the main concern in educational programs and less attention has been paid to the role of fathers and their training (32, 31). The results of the study performed by Fatherhood Institute (2008) was supportive of marginalized role of father in prenatal training programs (33). Parents' participation in delivery preparation classes and prenatal training played an important role in their transition to parenthood (34). In this regard, the results of the study conducted by Gerner (2008) showed that fathers' participation in prenatal training classes was one of the factors influencing their attachment behaviors to the fetus (13), which was in line with the present study. However, Astaraki et al. (2012) observed no significant relationship between fathers' participation in childbirth preparation classes and fetal attachment behaviors. The reasons for this were the content and manner of holding these classes in Iran, which deemphasized the role of father (12). The findings of this study was not in the same vein with those of the current study.

Despite the important role of fathers in all areas of life, especially during pregnancy, limited number of studies have addressed this issue in Iran. One of the ways to encourage father involvement is to provide training programs with the focus on the supporting role of fathers, father's emotional support for his wife, his relationship with his wife, physiological and psychological responses to pregnancy, and awareness of the fetus development, especially for fathers with no previous experience of fatherhood.

One of the limitations of this study was having no access to a male educator. Given that the research community were fathers who were waiting for the birth of their first child and had no previous experience, in the presence of a male coach, they could easily mention their problems. On the other hand, the presence of a male trainer could increase the confidence and abilities of fathers.

## Conclusion

Teaching attachment increases the paternal-

fetal attachment. Regarding the effect of this method in this study, more involvement of fathers in prenatal care through the implementation of educational programs, including training of paternal-fetal attachment is suggested.

### Acknowledgements

This article is the result of a research project approved by Mashhad University of Medical Sciences (No. 940546), and registered in the Iranian Registry of Clinical Trials (IRCT IRCT2016010225808N1). The authors would like to thank the Research Deputy of Mashhad University of Medical Sciences which financed the project, the respected authorities of the health centers and all the mothers/fathers who collaborated in the implementation of this project.

### Conflicts of interest

The authors declare no conflicts of interest.

### References

1. Condon JT, Cortlindale C. The correlates of antenatal attachment in pregnant women. *British Journal of Medical Psychology*. 1997; 70(4):359-372.
2. Male involvement in maternal health critical to saving women's lives, say UN leaders. United Nations Population Fund. Available at: URL: <https://www.unfpa.org/press/male-involvement-maternal-health-critical-saving-womens-lives-say-un-leaders>; 2007.
3. Nations Unites. Report of the international conference on population and development: Cairo, 5-13 September 1994. UN; 1995.
4. Natoli L, Holmes W, Chanlivong N, Chan G, Toole MJ. Promoting safer sexual practices among expectant fathers in the Lao People's Democratic Republic. *Global Public Health*. 2012; 7(3):299-311.
5. Enhancing men's roles and responsibilities in family life. A new role for men. United Nations Population Fund. Available at: URL: <http://www.unfpa.org/intercenter/role4men/ehancin.htm>; 2009.
6. World Health Organization. Programming for male involvement in reproductive health: report of the meeting of WHO regional advisers in reproductive health WH. Geneva: World Health Organization; 2002.
7. Peltzer K, Chao LW, Dana P. Family planning among HIV positive and negative prevention of mother to child transmission (PMTCT) clients in a resource poor setting in South Africa. *AIDS and Behavior*. 2009; 13(5):973-979.
8. Ustunsoz R, Guvenc G, Akyuz R, Oflaz F. Comparison of maternal-and paternal-fetal attachment in Turkish couples. *Midwifery*. 2010; 26(2):e1-e9.
9. Condon JT. The parental-fetal relationship-a comparison of male and female expectant parents. *Journal of Psychosomatic Obstetrics and Gynaecology*. 1985; 4(4):271-284.
10. Teitler JO. Father involvement, child health and maternal health behavior. *Children and Youth Services Review*. 2001; 23(4):403-425.
11. Zachariah R. Attachment, social support, life stress, and psychological well-being in pregnant low-income women: a pilot study. *Clinical Excellence for Nurse Practitioners*. 2004; 8(2):60-67.
12. Astaraki L, Jamshidimanesh M, Behboodi Moghadam Z, Haghani H. Paternal-fetal attachment behaviors and associated factors. *Journal of Mazandaran University of Medical Sciences*. 2014; 24(117):173-183. (Persian)
13. Gerner L. Exploring prenatal attachment: factors that facilitate paternal attachment during pregnancy. [PhD Thesis]. Fresno: Alliant International University; 2005.
14. Park C, Kang C. Does education induce healthy lifestyle? *Journal of Health Economics*. 2008; 27(6):1516-1531.
15. Likis FE. Prenatal education: enduring and essential. *Journal of Midwifery & Women's Health*. 2009; 54(6):429.
16. Shefner-Rogers CL, Sood S. Involving husbands in safe motherhood: effects of the Suami Siaga campaign in Indonesia. *Journal of Health Communication*. 2010; 9(3):233-258.
17. Mullany BC. Barriers to and attitudes towards promoting husbands' involvement in maternal health in Katmandu, Nepal. *Social Science & Medicine*. 2006; 62(11):2798-2809.
18. Bennet RR, Brown LK. Myles text book for midwives. 2<sup>nd</sup> ed. London: Churchill Livingstone; 1999. P. 651-662.
19. Latifses V, Estroff DB, Field T, Bush JP. Fathers massaging and relaxing their pregnant wives lowered anxiety and facilitated marital adjustment. *Journal of Bodywork and Movement Therapies*. 2005; 9(4):277-282.
20. 14 ways to communicate with the fetus in the womb sense. Iranhall. Available at: URL: <http://www.iranhall.com/health/shownews/47162>; 2013. (Persian)
21. Seimyr L, Sjogren B, Welles-nystrom B, Nissen E. Antenatal maternal depressive mood and parental-fetal attachment at the end of pregnancy. *Archives of Women's Mental Health*. 2009; 12(5):269-279.

22. Akbarzade M, Setodeh S, Sharif F, Zare N. The effect of fathers' training regarding attachment skills on maternal-fetal attachments among primigravida women: a randomized controlled trial. *International Journal of Community Based Nursing and Midwifery*. 2014; 2(4):259. (Persian)
23. Sajjadi AS, Zaharakar K, Mohsenzadeh F, Karamnia M, Shokoochi YM, Alavinezhad S. Efficacy of maternal fetal attachment techniques on enhancing mother's attachment to the fetus. *Developmental Psychology*. 2016; 12(47):281-288. (Persian)
24. Abasi E, Tafazoli M, Esmaeili H. The effect of fetal movement counting on primipara maternal fetal attachment. *Journal of Mazandaran University of Medical Sciences*. 2010; 20(77):53-60. (Persian)
25. Bellieni CV, Ceccarelli D, Rossi F, Buonocore G, Maffei M, Perrone S, et al. Is prenatal bonding enhanced by prenatal education courses? *Minerva Ginecologica*. 2007; 59(2):125-129.
26. Mousavi R. Teaching the Quran before and after birth and at bedtime. *Angle Lalay*. Available at: URL: [www.lalay.ir](http://www.lalay.ir); 2010. (Persian)
27. Barker G, Ricardo C, Nascimento M, World Health Organization. Engaging men and boys in changing gender-based inequity in health: Evidence from programmer interventions. Geneva: World Health Organization; 2007.
28. Dachman RS, Alessi GJ, Vrazo GJ, Fuqua RW, Kerr RH. Development and evaluation of an infant-care training program with first-time fathers. *Journal of Applied Behavior Analysis*. 1986; 19(3): 221-230.
29. Pfannenstiel AE, Honig AS. Prenatal intervention and support for low-income fathers. *Infant Mental Health Journal*. 1991; 12(2):103-115.
30. Parr M. A new approach to parent education. *British Journal of Midwifery*. 1998; 6(3):160-165.
31. McElligott M. Antenatal information wanted by first-time fathers. *British Journal of Midwifery*. 2001; 9(9):556-558.
32. Pollock S. Focus: young first-time fathers. NHS [National Health Service] health development agency. *Young People's Health Network*. 2001; 15(8):26-28.
33. Fatherhood Institute research summary: fathers, mothers, work and family. Fatherhood Institute. Available at: URL: <http://www.fatherhoodinstitute.org/index.php?id=10&cID=627>; 2011.
34. Deave T, Johnson D. The transition to parenthood: what does it mean for fathers? *Journal of Advanced Nursing*. 2008; 63(6):626-633.