

RESEARCH ARTICLE

Effect of group counselling on knowledge and attitudes of men toward participation in perinatal cares

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ABSTRACT


Background: Male participation, as an important strategy in achieving the millennium development goals, requires adequate information among them of maternal and newborn health topics, particularly perinatal cares. **Aims and Objectives:** The present study was carried out to evaluate the effects of group counseling on knowledge and attitudes of men toward participation in perinatal cares for their wives first pregnancy in Hamadan, Iran. **Materials and Methods:** In this quasi-experimental study, 144 spouses of women who were pregnant for the first time were studied in two groups of 72 case and control groups. Before the intervention, knowledge and attitudes of men in two groups about perinatal cares were measured, and then for men in case group, six sessions were held with a focus on perinatal cares, and 1 month after the end of the sessions, knowledge and attitudes of men were compared. **Results:** Before the intervention, 98.6% of the case group and 100% of control group had low-to-moderate level of knowledge about perinatal cares. After the intervention, only one of the men in the intervention group remained in poor knowledge level ($P < 0.05$), while the level of knowledge of the control group did not change ($P = 0.567$). On the other hand, before the intervention, 86.1% of case group and 81.9% of control group had a positive attitude to participate in perinatal cares for their wives and none of them had a poor attitude in this regard. However, after the intervention, level of positive attitude in the case group increased (95.8%), and there was a significant difference before and after intervention. **Conclusion:** The present study showed the impact of educational interventions to improve the knowledge and attitudes of men as one of the biggest supporters of maternal and child health. Therefore, particular attention should be given to consulting and training men in the field of perinatal cares.

KEY WORDS: Male Participation; Perinatal Cares; Knowledge and Attitude; Counseling

INTRODUCTION

99% of maternal deaths occur in developing countries.^[1] The World Health Organization has focused on accelerating the

reduction of mortality related to pregnancy and childbirth and considered it as the first priority of its reproductive health program and believed that men are considered as key partners to improve maternal health and reduce mortality of them.^[2] Men are the key players to influence reproductive health outcomes of their wives and children.^[3] In this regard, the international conference on population and development statement in Cairo, Egypt, in 1994 has emphasized responsible participation of men and promoting the active participation of them in the areas of responsible parenthood, sexual, and reproductive behaviors.^[4] For the most men, the

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first experience of fatherhood has associated with significant changes in personal identity and relationship with his wife.^[5,6] Studies show that spousal support in pregnancy and childbirth makes the women can better tolerate pressures and hardships of pregnancy and childbirth and has the positive effects on women's experience of these major events.^[7,8] Fathers are effective to adopt and sustain healthy behaviors and stop unhealthy behaviors of their wives, such as quitting smoking during pregnancy,^[9] as well as men's participation in the affairs of pregnancy reduces stress and early cares of pregnancy in this period.^[10,11] Studies have shown that spousal support can reduce the risk of premature birth and low birth weight infants, as well as intrauterine growth restriction and infant mortality.^[12] Furthermore, the participation of fathers in prenatal cares and attendance at delivery leads to a stronger relationship with the father and her child in the later stages of growth and is associated with positive results in cognitive, developmental, and social behavior of children, including improving weight gain in preterm infants, increasing language learning skills, and later academic success.^[13] Men can help life and health of women through participation in safe motherhood programs. They can have an active participation preserving a woman's health during pregnancy, allowing the presence of a skilled and trained person during delivery, help mothers after the baby is born, and playing the role of a responsible father in the family.^[14] Most women tend their husbands to pay attention to their health, and in the study of Dragonas in Greece, 73% of mothers preferred that husbands at the time of delivery would be with them.^[15] In fact, the participation of men in cares during pregnancy, during delivery and then is what women want.^[16] Despite all the benefits of male participation in perinatal cares for women, men, for whatever reason, are on the fringes of services provided to mothers and do not have access to enough information that will help them in informed decision-making and health improvement and their wives.^[17] All this while, men have responded well to efforts made for their participation during pregnancy and childbirth.^[18] For example, in the study of Carter in Guatemala, 90% of fathers participating in the study had participated in prenatal cares or maternity or in the baby cares program.^[19] American fathers who had participated in educational classes on birth were involved in activities related to pregnancy and infant cares more than other fathers and established a better relationship with his wife,^[5] or in a study in Germany, over 70% of the men participating in the childbirth tended to support their wives even during surgical interventions.^[20] In fact, father, like mother, will undergo changes for compliance with his new role, and it is sometimes more difficult for fathers because they are ignored by others and even health-care providers.^[21] On the other hand, men participation in the cares of the mother and child provides new opportunities for health-care providers so that they can educate future fathers and accompany them on their family health.^[19] For example, fathers' education in Indonesia increases information and willingness for

childbirth activities,^[22] as well as educational intervention in Nepal with the presence of wives in prenatal cares, increased use of health cares after delivery than women who alone were trained.^[23] Furthermore, father participation in educational classes increases the probability of starting and continuing breastfeeding.^[24] Men's participation as an important strategy in achieving the Millennium Development Goals, such as women's empowerment and improving maternal health, requires adequate training and informing them of maternal and infant health issues, especially perinatal cares.^[25] Given the importance of male participation in perinatal cares and given the limited studies done in this field in Iran, this study was conducted to determine the effect of group counseling on knowledge and attitudes of men toward participation in perinatal cares for their wives first pregnancy.

MATERIALS AND METHODS

In this two-group quasi-experimental study, the husbands of 144 eligible primigravida women selected out of all pregnant women referring to Fatemieh Hospital in the city of Hamadan, Iran, in 2016. Participants were selected based on a convenient sampling method and were randomly allocated into two 72-person case and control groups using permuted-block randomization design. Sample size was estimated based on a previous study by Simbar *et al.*^[26] The level of significance was set at 5% ($\alpha = 0.05$), while the power of the study ($1-\beta$) was set at 80%. Inclusion criteria were the presence of a normal pregnancy with a gestational age of <32 weeks and without the use of assisted reproductive technology. Husbands of women who worked in the medical and health-care professionals have been excluded from the study as well as those who studied in medical sciences. Furthermore, in the case of the absence of men in more than one counseling session, the sample was excluded from the study.

Measures

Men's knowledge and attitudes about participation in perinatal cares and questionnaire

The questionnaire was designed by the research team using a questionnaire designed by Simbar *et al.*^[26] and based on the contents of booklet entitled "Prenatal Training and Preparation for Delivery" (Ministry of Health and Medical Education, Iran).

- The "Knowledge" part of the questionnaire consisted of 70 questions and 12 perinatal cares areas including physical changes, common complications, nutrition, general hygiene, prenatal exercises, sexual health, warning signs, mental changes during pregnancy, delivery, puerperium, breastfeeding, and neonate cares. Positive and zero points were given to the correct and incorrect responses of each question, respectively. By leveling the obtained

scores both as total and perinatal cares area scores, the scores between 0 and 33.3, between 33.3 and 66.6, and between 66.6 and 100 were considered poor, moderate, and good levels of knowledge, respectively.

- The “Attitude” part of the questionnaire consisted of 15 items with a 3-point Likert scale including disagree, neutral, and agree so that the scores of 1, 0, and 2 were considered for disagree, neutral, and agree, respectively. Then, the total scores were calculated. The negative, neutral, and positive attitudes were attributed to the scores between 0 and 33, between 34 and 67, and between 68 and 100, respectively. The questionnaire’s validity was assessed using different experts’ opinions, and its reliability was calculated using Cronbach’s alpha coefficient (0.89).

“Demographic and obstetric characteristics”

Questionnaire included age, family size, education, ethnicity, occupation, housing status and monthly income of the couples, marriage duration, history of infertility, number of abortions, number of deceased neonates, date of last menstruation, gestational age, and estimated date of delivery.

After presenting the research objectives and obtaining informed consent, demographic and obstetric characteristics questionnaire were completed by pregnant women and “men’s knowledge and attitudes about participation in perinatal cares” questionnaire by their husbands. Then, after the necessary coordination for men in the case group, six counseling sessions were held each lasting an hour, including 45 min of counseling and 15 min of questions and answers. Group counseling sessions were held once a week in physiological delivery training unit of a maternity hospital. After the training sessions, a pamphlet was given to the participants, and the questions to be answered individually. 1 month after completion of training, the questionnaires were completed by men in two groups again.

Ethical Considerations

This study approved by the Ethics Committee of Hamadan University of Medical Sciences (IR.UMSHA.REC.1394.254). Participants were informed about the objective of the study, written consent was obtained from each participant, and they were assured of confidentiality of information. In addition, participants could be excluded whenever they did not want to participate in the study.

RESULTS

There was no significant difference between the two groups in terms of the average age of pregnant women (27.68 ± 4.19 in case and 26.29 ± 4.36 in the control group), the average age of spouses (31.37 ± 3.45 in the case and 30.71 ± 4.72 in the control group), the average length of marriage (2.11 ± 4.19 in

the case and 2.81 ± 1.77 in the control group), and the mean gestational age (25.99 ± 3.76 in the case and 26.89 ± 3.98 weeks in the control group) (Table 1). Before the intervention, only one of the men in the case group had good knowledge about perinatal cares, and 98.6% of men have had moderate-to-low levels of knowledge (Table 2). After the intervention, the majority of men in case group had a good level of knowledge, and only one person remained in poor knowledge level. In the control group, before the intervention, 100% of men had a poor-to-moderate knowledge level, which after the intervention, yet none of them had good knowledge level. Marginal homogeneity test showed that overall knowledge levels of men, before the intervention in two case and control groups, had no significant differences ($P > 0.05$), but the difference between levels of overall knowledge of men in both groups after the intervention is statistically significant ($P < 0.05$). Furthermore, unlike the control group, the difference between men’s overall knowledge level after the intervention in the case groups was statistically significant ($P < 0.05$). On the other hand, before the intervention, the majority of men (86.1% of the case group and 81.9% of the control group) had a positive attitude toward participation in perinatal cares, and none of them had a negative attitude in this regard. However, after the intervention, unlike the control group, level of positive attitude in the case group increased (95.8%), and a significant difference was observed. Marginal homogeneity test showed that the general attitude of men, before the intervention in two case and control groups, had no significant differences ($P > 0.05$), but the difference between levels of the general attitude of men in both groups after the intervention is statistically significant ($P < 0.05$) (Table 3). In addition, knowledge levels of men, by perinatal cares areas, were compared. Before the intervention, none of the men in the case group had enough knowledge about physical changes during pregnancy and puerperium areas, and in each of the three areas of common problems including nutrition, sexual health, and neonate cares, only one person had a good knowledge level. There was a significant difference after intervention ($P < 0.05$) (Table 4). The statistical analyses were performed using the SPSS statistical software (version 19.0). For the normality analysis of the data, Kolmogorov-Smirnov test was used. In addition to descriptive statistics, for comparing the difference of two groups, independent and paired *t*-tests were used and ANCOVA test was used to remove the effect of education level before intervention. $P < 0.05$ was considered as statistically significant.^[27,28]

DISCUSSION

Male participation in perinatal cares is considered as an essential element of the initiative in the World Health Organization to secure pregnancy.^[18] This participation becomes more important, especially in developing countries, where men often are policy-makers and decision-makers at household and community levels.^[26] Lack of knowledge or

Table 1: Comparison of the demographic characteristics of pregnant women and their spouses in the case and control groups

Variable	Answer	Groups, n (%)		P
		Case	Control	
Prenatal cares	No	72 (100)	72 (100)	0.40
	Yes	69 (95.8)	72 (100)	
	No	3 (2.4)	0 (0)	
	1	8 (11.1)	15 (20.8)	
	2	1 (4/1)	3 (2.4)	
Family members	2	70 (97.2)	63 (87.5)	<0.001
	3	2 (2.8)	3 (2.4)	
	4	0 (0)	6 (3/8)	
Women's education	Primary	2 (2.7)	1 (1.4)	<0.001
	Under diploma	4 (6.5)	15 (20.8)	
	Diploma	17 (23.6)	31 (43.1)	
	Collegiate	49 (68.1)	25 (34.7)	
Men's education	Primary	1 (1.4)	4 (6.5)	<0.001
	Under diploma	9 (11.3)	14 (19.4)	
	Diploma	16 (22.5)	34 (47.2)	
	Collegiate	46 (64.8)	20 (27.8)	
Ethnicity of women	Fars	48 (66.7)	38 (52.7)	0.09
	Kord	6 (8.3)	9 (12.5)	
	Lor	4 (6.5)	1 (1.4)	
	Turk	14 (19.4)	24 (33.3)	
Ethnicity of men	Fars	46 (63.9)	37 (51.4)	0.55
	Kord	8 (11.1)	6 (8.3)	
	Lor	3 (4.2)	3 (2.4)	
	Turk	15 (20.8)	26 (1/36)	
Women's occupation	Unemployed	57 (79.2)	70 (97.2)	0.98
	Employed	15 (20.8)	2 (2.8)	
Men's occupation	Unemployed	1 (1.4)	0 (0)	0.45
	Employed	71 (98.6)	100 (100)	
Housing statuses	Rental	35 (48.6)	38 (52.8)	0.92
	Personal	36 (50)	28 (38.9)	
	Living with others	1 (1.4)	6 (8.3)	

Table 2: Comparison of men's knowledge of perinatal cares intra- and inter-two groups

Groups	Knowledge level						P
	Before intervention, n (%)			After intervention, n (%)			
	Good	Moderate	Poor	Good	Moderate	Poor	
Case	1 (1.4)	14 (19.4)	57 (79.2)	41 (56.9)	30 (41.7)	1 (1.4)	<0.001
Control	0 (0)	25 (7/34)	47 (65.3)	0 (0)	23 (31.9)	49 (68.1)	0.56
P	0.43			0.002			-

very little knowledge of men about the needs of pregnant women and their roles and responsibilities causes poor performance of them.^[17] In the study of Mortazavi, 77% of Iranian men had little knowledge about the problems of their wives pregnancy.^[29] In Olugbenga study, 42% of men had low knowledge about maternal health care's and 82% of men in the study of Awasthi *et al.* were not aware of their wives

childbirth complications.^[30,31] All this while, with increasing men's knowledge about prenatal cares, men participation can be improved.^[32] In the present study, before the intervention, only one of the men in the case group had an acceptable level of knowledge about perinatal cares, and the 98.8% of them had moderate-to-poor knowledge in this regard. However, after the intervention, only one person had a low level of

Table 3: Comparison of men's attitude toward participation in perinatal cares intra- and inter-two groups

Groups	Men's attitude						P
	Before intervention, n (%)			After intervention, n (%)			
	Positive	Neutral	Negative	Positive	Neutral	Negative	
Case	62 (86.1)	10 (13.9)	0 (0)	69 (95.8)	3 (4.2)	0 (0)	0.05
Control	59 (81.9)	13 (18.1)	0 (0)	53 (73.6)	19 (26.4)	0 (0)	0.13
P	0.32			0.03			-

Table 4: Comparison of knowledge level by areas of perinatal care before and after intervention in the case group

Perinatal care areas	Before intervention (n=72)			After intervention (n=72)			P
	Poor	Average	Good	Poor	Average	Good	
	n (%)	n (%)	n (%)	n (%)	n (%)	n (%)	
Physical changes	58 (80.6)	14 (19.4)	0 (0)	17 (23.6)	46 (63.9)	9 (12.5)	<0.001
Common complications	41 (56.9)	30 (41.7)	1 (1.4)	1 (1.4)	23 (31.9)	48 (66.7)	<0.001
Nutrition	46 (63.9)	25 (34.7)	1 (1.4)	10 (13.9)	39 (54.2)	23 (31.9)	<0.001
General hygiene	52 (72.2)	16 (22.2)	4 (6.5)	2 (2.8)	14 (19.4)	56 (77.8)	<0.001
Exercise	42 (58.3)	22 (6.30)	8 (11.1)	8 (1.4)	15 (20.8)	56 (77.8)	<0.001
Sexual health	56 (77.8)	15 (20.8)	1 (1.4)	8 (11.1)	14 (19.4)	50 (96.4)	<0.001
Warning signs	22 (30.6)	31 (43.1)	19 (26.4)	4 (6.5)	20 (27.8)	48 (66.7)	<0.001
Mental changes	40 (55.6)	16 (22.2)	16 (22.2)	7 (9.7)	20 (27.8)	45 (5.62)	<0.001
Delivery	52 (72.2)	16 (22.2)	4 (6.5)	27 (37.5)	20 (27.8)	25 (34.7)	<0.001
Puerperium	54 (75)	18 (25)	0 (0)	2 (2.8)	20 (27.8)	50 (69.4)	<0.001
Breastfeeding	34 (47.2)	29 (40.3)	9 (12.5)	1 (1.4)	16 (22.2)	55 (76.4)	<0.001
Neonate cares	59 (81.9)	12 (16.7)	1 (1.4)	4 (6.5)	20 (27.8)	48 (66.7)	<0.001

knowledge. These results indicate that men welcome training related to perinatal cares of their wives. Simbar *et al.*, in a study on Iranian men, reported that more than 95% of men agreed with training prenatal cares.^[26] In the present study, the knowledge of men in the control group, especially in important areas of perinatal care such as nutrition during pregnancy and warning signs, significantly reduced. This shows the need for men to be trained in the areas of maternal mortality and morbidity associated with pregnancy and childbirth. Interestingly, in the study of Simbar *et al.*, fathers reported that training topics needed for them include warning signs during pregnancy, postpartum problems, and nutrition of pregnant women, respectively.^[26] Another interesting point is that, in this study, men in both the case and control groups in the fields of postpartum cares, including cares of the newborn and postpartum period, were at the lowest level of knowledge. Thus, it appears that, in the antenatal educations, more attention needs to be paid postnatal cares for mother and baby and parents with little information and misconceptions should not be left to their own devices after the delivery. In the present study, before the intervention, almost none of the men in both groups had a negative attitude to participate in perinatal cares, and after the intervention, there were still their positive attitudes, though 86.1% of men positive attitude after the intervention reached to 95.8% in the case group, which reflects the impact of group counseling on improving the attitudes of men. The positive attitude of men toward participation in

perinatal cares of their wives has been reported few studies in Iran, as well as in other countries.^[13, 30, 33, 34] This favorable attitude may indicate positive changes in the willingness of men to participate in promoting women's health. It seems that growth of the society knowledge and increased public knowledge of the importance of male involvement, and most importantly, increasing expectations of women from their husbands and their companions gradually affect the social stigma and traditional gender roles, which can have a negative on men's participation.

CONCLUSION

The present study showed the impact of educational interventions to improve the knowledge and attitudes of men as the main backers of maternal and child health. Therefore, paying particular attention to the education of men in the field of perinatal cares is necessary.

REFERENCES

1. Yargawa J, Leonardi-Bee J. Male involvement and maternal health outcomes: Systematic review and meta-analysis. *J Epidemiol Community Health*. 2015;69(6):604-12.
2. World Health Organization. Strategy to accelerate progress towards the attainment of international development goals and

- targets related to reproductive health. *Reprod Health Matters*. 2005;13(25):11-8.
3. Dudgeon MR, Inhorn MC. Men's influences on women's reproductive health: Medical anthropological perspectives. *Soc Sci Med*. 2004;59(7):1379-95.
 4. UNFPA. Report of the International Conference on Population and Development. ICPD-1994 Cairo-Egypt. New York: UNFPA; 1995.
 5. Diemer GA. Expectant fathers: Influence of perinatal education on stress, coping, and spousal relations. *Res Nurs Health*. 1997;20(4):281-93.
 6. Turan JM, Nalbant H, Bulut A, Sahip Y. Including expectant fathers in antenatal education programmes in Istanbul, Turkey. *Reprod Health Matters*. 2001;9(18):114-25.
 7. Gungor I, Beji NK. Effects of fathers' attendance to labor and delivery on the experience of childbirth in Turkey. *West J Nurs Res*. 2007;29(2):213-31.
 8. Soltani F, Eskandari Z, Khodakarami B, Parsa P, Roshanaei G. Factors contributing to fear of childbirth among pregnant women in Hamadan (Iran) in 2016. *Electron Physician*. 2017;9(7):4725-31.
 9. Teitler JO. Father involvement, child health and maternal health behavior. *Child Youth Serv Rev*. 2001;23(4):403-25.
 10. Ghosh JK, Wilhelm MH, Dunkel-Schetter C, Lombardi CA, Ritz BR. Paternal support and preterm birth, and the moderation of effects of chronic stress: A study in Los Angeles County mothers. *Arch Womens Ment Health*. 2010;13(4):327-38.
 11. Martin LT, McNamara MJ, Milot AS, Halle T, Hair EC. The effects of father involvement during pregnancy on receipt of prenatal care and maternal smoking. *Matern Child Health J*. 2007;11(6):595-602.
 12. Feldman PJ, Dunkel-Schetter C, Sandman CA, Wadhwa PD. Maternal social support predicts birth weight and fetal growth in human pregnancy. *Psychosom Med*. 2000;62(5):715-25.
 13. Garfield CF, Isacco A. Fathers and the well-child visit. *Pediatrics*. 2006;117(4):e637-45.
 14. Drennan M. New perspectives on men's participation. *Popul Rep*. 1998;26(2):1-2.
 15. Dragonas TG. Greek fathers' participation in labour and care of the infant. *Scand J Caring Sci*. 1992;6(3):151-9.
 16. Greene ME, Mehta M, Pulerwitz J, Wulf D, Bankole A, Singh S. *Involving Men in Reproductive Health: Contributions to Development*. Washington DC: Millennium Project; 2006.
 17. World Health Organization. *Programming for Male Involvement in Reproductive Health: Report of the Meeting of WHO Regional Advisers in Reproductive Health*. Washington DC, USA: WHO; 2002.
 18. UNFPA. *Enhancing Mens Roles and Responsibilities in Family Life. A New Role for Men Interactive Center*. New York: UNFPA; 2009.
 19. Carter MW, Speizer I. Salvadoran fathers' attendance at prenatal care, delivery, and postpartum care. *Rev Panam Salud Publica*. 2005;18(3):149-56.
 20. David M, Kantenich H. Fathers in the labor room--a survey before and after delivery. *Z Geburtshilfe Perinatol*. 1992;197(4):195-201.
 21. Tengir T, Cetinkaya S. Role of newborn nurses in newborn feeding. *J Matern Fetal Neonatal Med*. 2011;24(1):158-65.
 22. Shefner-Rogers CL, Sood S. Involving husbands in safe motherhood: Effects of the SUAMI SIAGA campaign in Indonesia. *J Health Commun*. 2004;9(3):233-58.
 23. Mullany BC, Becker S, Hindin MJ. The impact of including husbands in antenatal health education services on maternal health practices in urban Nepal: Results from a randomized controlled trial. *Health Educ Res*. 2007;22(2):166-76.
 24. Wolfberg AJ, Michels KB, Shields W, O'Campo P, Bronner Y, Bienstock J. Dads as breastfeeding advocates: Results from a randomized controlled trial of an educational intervention. *Am J Obstet Gynecol*. 2004;191(3):708-12.
 25. UNFPA. *Partnering with Men in Reproductive & Sexual Health (UNFPA-programme advisory note)*. New York, USA: United Nations Population Fund Technical Services Division; 2000.
 26. Simbar M, Nahidi F, Ramezani-Tehrani F, Akbarzadeh A. Educational needs assessment for men's participation in perinatal care. *East Mediterr Health J*. 2011;17(9):689-96.
 27. Havasian MR, Panahi J, Khosravi A. Correlation between the lipid and cytokine profiles in patients with coronary heart disease (CHD)(Review article). *Life Sci J*. 2012;9(4):5772-7.
 28. Roozegar MA, Havasian MR, Panahi J, Hashemian A. The prevalence of the localized aggressive periodontitis among students at 14-16 years in Ilam, Iran. *Pharm Lett*. 2014;6(6):62-4.
 29. Mortazavi F, Delara M, Akaberi A. Male involvement in prenatal care: Impacts on pregnancy and birth outcomes. *J Urmia Nurs Midwifery Fac*. 2014;12(1):63-71.
 30. Olugbenga-Bello AI, Asekun-Olarinmoye EO, Adewole AO, Adeomi AA, Olarewaju SO. Perception, attitude and involvement of men in maternal health care in a Nigerian community. *J Public Health Epidemiol*. 2013;5(6):262-70.
 31. Awasthi A, Nandan D, Mehrotra A, Shankar R. Male participation in maternal care in urban slums of district Agra. *Indian J Prev Soc Med*. 2008;39(1):3-4.
 32. Asefa F, Geleto A, Dessie Y. Male partners' involvement in maternal ANC care: The view of women attending ANC in Hararipublic health institutions, eastern Ethiopia. *Sci J Public Health*. 2014;2(3):182-8.
 33. Valizadeh R, Malekshahi F, Saki M, Kavarizadeh F. Concentration extent of people with a history of methamphetamine consumption via measuring brain waves in recovering addicts who referred to Taleghani hospital of Ilam, Iran 2016. *Indian J Forensic Med Toxicol* 2017;11:246-50.
 34. Mullany BC. Barriers to and attitudes towards promoting husbands' involvement in maternal health in Katmandu, Nepal. *Soc Sci Med*. 2006;62(11):2798-809.

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