Published online in http://ijam.co.in ISSN No: 0976-5921

International Journal of Ayurvedic Medicine, Vol 13 (2), 532-542

The Effect of Parent Education on the Extent of Paternal Adaptation in First-Time Fathers

Research Article

Monir Mohammad Alipour[1,2*], Naslihan Ouzjan Kaser[3], Narges Eskandari[4], Reza Mohammad Alipour[5]

1. Department of Midwifery, Islamic Azad University, Khalkhal Branch, Khalkhal, Iran.
2. Department of Midwifery, Institute of Graduate Studies, Istanbul University - Cerrahpasa, Turkey.
3. Department of Midwifery, Faculty of Health Science, Istanbul University - Cerrahpasa, Turkey.
4. Department of Midwifery. Medical school, Qom University of Medical Sciences, Qom, Iran.
5. Department of Sports of Physiology, University Ardabil, Iran.

Abstract

Entering the stage of parenthood can be a stressful time and can significantly affect the mental health and well-being of parents by causing lifestyle changes. Thus, this research was created with the aim of assessing the effect of parent education on the extent of depression in fathers, after their first experience with parenthood. Members of the experimental group included 100 husbands of pregnant women visiting Ardebil's healthcare medical centers, who received counseling and training about accepting the role of fatherhood. Members of the control group included 100 husbands of pregnant women in the same centers, who received the usual pregnancy care. The analysis of the data was conducted on two descriptive and deductive levels. The Kolmogorov-Smirnov test was done to evaluate the normality of the data, and the Mann-Whitney U non-parametric test and the Wilcoxon Signed-Rank test were used for comparing the experimental group and the control group. The findings of the present study showed that the average paternal adaptation score of the control and experimental groups does not have a statistically significant difference before and after the experimental interference. However, the average paternal adaptation score of the experimental and control groups had a statistically significant difference after the experimental interference. Therefore, it can be concluded that education increases paternal adaptation and quality of life. The outcome of this study showed that education and increasing personal information, especially during the childbearing period, increases the quality of life and paternal adaptation.

Key Words: Education, Fathers, Pregnancy, Paternal adaptation.

Introduction

Family is one form of human communities. Family is a complex set of various relationships, processes, and phenomena, or in other words, a system in social life, in which physical, mental, financial, ethical, cultural, and other types of relations entangle and form a unified whole (1).

Becoming a father is one of the joyful and evolutionary experiences of life, and the turning point of marital relationships (2). Many Iranian men have traditional marriages and having children is important for most of them. In Iranian culture, the man is the head of the family and fathers receive special respect. Furthermore, with the recent emergence of Iranian women in the work force, the role of fathers in relation to their children becomes more important (3). During the 9 months of his wife's pregnancy, the expecting father experiences one of the most fundamental changes of his life and gradually prepares himself for accepting his role. Accepting the paternal identity happens long before the birth of the child and through the affectionate behaviors of the father toward the fetus. The affectionate behaviors of the father toward the fetus are a manifestation of the father's deep feelings of love and affection toward the unborn child and are the foundation of the paternal identity (2). Entering the stage of parenthood can be a stressful time and can significantly affect the mental health and well-being of parents by causing lifestyle changes. From a social standpoint, the birth and arrival of the child into the home is the starting point of fatherhood. The addition of the child to the family entails transformations such as the alteration of the father's responsibilities and self-perception and is a critical stage for fathers and their families. This can cause some conflicts and contradictions in their lives. Thus, as a transitional period in men's lives, becoming a father is considered a stress-inducing process that might be accompanied by depression, social isolation, and impairment in relating to the spouse and child (4, 5, 6 and 7).

*** Corresponding Author:**
Monir Mohammad Alipour
Department of Midwifery,
Islamic Azad University,
Khalkhal Branch,
Khalkhal, Iran.
Email Id: monir.alipour@yahoo.com

Becoming a father, like becoming a mother, signifies an important role that includes responsibility, and accepting this role requires appropriate preparation (6). Due to the centrality of women in reproduction and a lack of necessary information about men, for a long time, reproductive health programs were not tailored to men (7). This is in spite of the fact that pregnancy care programs are a suitable opportunity for changing the outlook on fatherhood (7) and providing the necessary training for increasing the affection of the father towards the child (8). Moreover, there is a linear relationship between paying attention, during pregnancy, to the importance of becoming a father, and the quality and intensity of the relationship between the father and the child in the fetal period (6). Some believe that the process of transitioning to parenthood begins before pregnancy, on the days that a couple predict becoming parents and imagine themselves in this role. This prediction becomes bolder during pregnancy and includes accepting the pregnancy, extending the parental identity with the movements of the fetus, and awaiting berth, in the first, second, and third trimesters, respectively.

Clearly, there are gaps in our knowledge about the role of fathers in the family, especially during the prenatal period. Fathers can have important roles, like managing and helping with prenatal care, and with proper training, they can learn different ways to participate. Furthermore, fathers need to adapt to their new role as a father, and this is usually difficult for them because they are frequently ignored by family and healthcare professionals. Training for increasing men's participation has had positive effects on maternal and newborn care (9). Although male participation has been attracting attention recently, few studies in Iran have evaluated male participation in prenatal care (7, 10). Men need training programs in order to participate (7, 10, and 11). Findings have shown that there is a positive outlook on male participation and most believed that training is necessary for both mothers and fathers. Men express that they do not know how they should help. This means that there is a need for paternal training. It has been proven that paternal training has positive effects on maternal and newborn health. Many countries have educational classes for parents, and 95% of fathers in Scandinavian countries attend these classes. Therefore, it is high time that we change prenatal services based on client requests and provide a system for counseling both mothers and fathers. Today, prenatal services are called "family-friendly servies" (11). On the other hand, fathers' participation in different matters creates a sense of safety in them. Being informed about childbirth and receiving information about the process of birth increases fathers' sense of security and is accompanied by a feeling of control. If fathers don't receive the necessary information, they will feel less involved and subsequently, less secure. The presence and support of the father in caring activities is the link that connects the father and the mother. Furthermore, the support of healthcare professionals has a fundamental role in creating assurance in clients, and is, therefore, a source of security for parents (12). Midwives and other healthcare professionals can create an opportunity for parents to have positive experiences during the process of transitioning to parenthood, by giving them support through purposeful communication and counseling during pregnancy and childbirth, and post-partum. However, there is limited research in these areas (8 and 12).

Helping men be good fathers is beneficial to children, families, and society. Although transitioning to fatherhood has been considered an almost vague and structure less process, healthcare services provide some solutions for passing this stage. This help is provided through creating a positive attitude toward fatherhood and giving correct and pleasant information (13). The international conference on population and development emphasizes the advancement of men's participation in their responsibilities such as reproductive health and paternal duties, and the World Health Organization puts emphasis on men's involvement in maternal health programs and identifying suitable strategies for their participation (7, 10). This can easily be done during prenatal care, and has been noted in the Department of Health, Social Services and Public Safety's "2020 Midwifery" report, as a golden opportunity for midwives to inform, advice, and support fathers (13). Men do not know how to help, and since there is a positive attitude towards involvement but not enough information, there appears to be a need for educating men (11). Numerous studies have advised that educating fathers be done during pre-pregnancy counseling programs and mid-pregnancy care, with the aim of advancing their knowledge and skills (14) (8, 10). However, few studies have been done about educating fathers and evaluating its effects in Iran. Hosseini Gharatekan et al. (14) concluded that educational programs for husbands have influenced pregnant women's quality of life, and has caused an increase in their overall quality-of-life score (14). The results of the research done by Sanaati et al (15) showed that educating pregnant women and their husbands and educating pregnant women alone, both improve the life style, and that educating pregnant women and their husbands together is more effective than educating pregnant women alone (15). Based on the findings of Nasiri et al. (7), men can be educated in healthcare facilities by doctors and midwives, during pre-pregnancy care or during preparation classes for labor and postpartum care. National policies of safe maternal healthcare should be in line with the increased participation of men during pregnancy, childbirth, and after, in order to improve maternal and newborn health and decrease maternal mortality rates during and after pregnancy.

Due to the necessity of educating fathers, the World Health Organization's emphasis on this matter, the lack of sufficient research in this field in Iran, and in view of the cultural, ideological, and social differences between Iranian men and men of other societies, the present study was conducted to determine the effect of education on the extent of paternal adaptation.

Materials and Methods

Method of Study

This Quasi-experimental research was conducted randomly on a selected population of people chosen at the medical facilities of the province of Ardebil. The Edinburgh Postnatal Depression Scale was used in the study and filled out by men who were at the stage of becoming fathers.

The target population of this study were first-time fathers. The study setting was the medical facilities of Ardebil. Since this research was planned as a qualitative quasi-experimental study of interference, the G*Power program (3.0.10) was used with 80% power, 0.05 error rate and 0.5 effect size, in order to determine the number of people that had to be chosen for each group. It was concluded that a minimum of 64 candidates should be chosen for each of the experimental and control groups. Due to the possibility that some candidates would leave the study, 100 candidates were considered for each group.

Criteria for entering the study

- Men between 18 to 50 years of age.
- First-time fathers.
- Men whose wives are in the 24th to 28th week of their pregnancy.
- Men who are literate enough to read, write, and understand the Persian language.
- Men whose spouses are having singleton pregnancies.

Criteria for leaving the study

- Men who become physically or mentally ill during the continuation of the pregnancy and the training classes.
- Men whose wives are in the risk category during the middle or late stages of their pregnancy.
- Men whose wives have a miscarriage during their pregnancy.

Method of Sampling and organizing the interference:

Based on the statistics of the health department of the province, there are 18 healthcare facilities in Ardebil. Thus, according to the list provided by the department of managing the statistics of the province's healthcare facilities, facilities with odd numbers (1, 3, 5, 7 …) were chosen as the selected centers for sampling. Afterward, sampling was done in Ardebil's selected facilities. Fathers who had filled out the pre-test questionnaires were randomly assigned to the two experimental and control groups, in order to fill out the questionnaires. The control group was sent home without any training and counseling, but the experimental group was guided into counseling and training classes. For training and counseling, three two-hour sessions of group counseling and training, each in two parts (first part: 10 minutes of Q&A in the beginning + 45 minutes of in-person training for fathers + 10 minutes of break, second part: 45 minutes of training + 10 minutes of Q&A at the end) were planned by the researcher. These sessions were held periodically in the specified time periods (24^{th}-28^{th}, 28^{th}-32^{nd}, and 32^{nd}-36^{th} weeks of pregnancy), the complete details of which can be found in Table 1. The Edinburgh Postnatal Depression Scale was filled out again by fathers in both the experimental and control group, 4-6 weeks after childbirth. The sessions were held in a quiet and private room at the healthcare facilities. The educational program of the group under study showed in Table 1.

Results

The distribution of the features of the cognitive population has been fully explained in table 2. According to the results view of the level of statistical significance of the Kolmogorov-Smirnov test's error, it can be concluded that the distribution of the scores of the studied variables is not normal. Therefore, non-parametric tests should be used to analyze the study's hypotheses.

According to the results in table 3. and in view of the level of statistical significance of the test's error, it can be concluded that there is no statistically significant difference between the average paternal adaptation and the two factors of ability to fulfill roles and responsibilities, and spiritual stability and internal satisfaction of the experimental group and control group before the test ($P>0.05$), and also between the average paternal adaptation and the two factors of ability to fulfill roles and responsibilities, and spiritual stability and internal satisfaction of the control group, before and after the test ($P>0.05$). However, there is a statistically significant difference between the average paternal adaptation and the two factors of ability to fulfill roles and responsibilities, and spiritual stability and internal satisfaction of the experimental group and control group after the test ($P<0.05$), between the average paternal adaptation and the two factors of ability to fulfill roles and responsibilities, and spiritual stability and internal satisfaction of both the experimental group and control group ($P<0.05$), between the paternal adaptation and the two factors of ability to fulfill roles and responsibilities, and spiritual stability and internal satisfaction of the experimental group, before and after the test ($P<0.05$), and finally between the average paternal adaptation and the two factors of ability to fulfill roles and responsibilities, and spiritual stability and internal satisfaction of both the experimental group and control group, before and after the test ($P<0.05$). Thus, it can be concluded that education increases the extent of paternal adaptation.

Table 1. The educational program of the group under study

24th – 28th weeks	**28th – 32nd weeks**	**32nd – 36th weeks**
Part 1.	**Part 3.**	**Part 5.**
- Introduction to the program - Fathers share their thoughts and feelings about fatherhood - Understanding pregnancy - How do expecting mothers and fathers change? (Physically, spiritually, socially)	Pregnancy and mental health - Understanding symptoms of mental distress Depression in mothers and fathers during pregnancy Understanding one's mental state and identifying supportive resources	Post-partum health - Supporting - Protecting the pregnancy - Sexual life Mental health (depression, sadness, anxiety, …)
Part 2.	**Part 4.**	**Part 6.**
Nutrition and self-care during pregnancy Supporting your spouse - Crafting - Exercising together Listening and understanding	Knowing and understanding children - The child's mental and social growth - Physical growth Learning in newborns	Child care - Signs of health and illness - Care (Reasons of crying, massaging, cleaning, helping) - Nutrition (helping with breastfeeding, passing gas, …) Safety (Avoiding accidents, …)
Educational program of the first week after birth Fathers share their feelings In response to questions about the need to take care of one's child and supporting one's spouse		

Table 2. Distribution of personal features

Characteristics			**Treatment**		**Total**	**X^2**	**p**
			control	**exp**			
Year	>20	n	7	7	14	3.88	0.27
		%	8.1	7.7	7.9		
	21-30	n	34	25	59		
		%	39.5	27.5	33.3		
	31-40	n	30	44	74		
		%	34.9	48.4	41.8		
	41-50	n	15	15	30		
		%	17.4	16.5	16.9		
Spouse age	>20	n	22	18	40	2.12	0.34
		%	25.6	19.8	22.6		
	21-30	n	42	41	83		
		%	48.8	45.1	46.9		
	31-40	n	22	32	54		
		%	25.6	35.2	30.5		
Education	Reading and Writing	n	24	29	53	1.08	0.78
		%	45.3	54.7	100.0		
	Primary education	n	14	18	32		
		%	43.8	56.3	100.0		
	High school education	n	21	18	39		
		%	53.8	46.2	100.0		
	University graduate	n	27	26	53		
		%	50.9	49.1	100.0		
Spouse education	Reading and Writing	n	22	17	39	1.49	0.68
		%	56.4	43.6	100.0		
	Primary education	n	17	19	36		
		%	47.2	52.8	100.0		
	High school education	n	22	23	45		
		%	48.9	51.1	100.0		
	University graduate	n	25	32	57		
		%	43.9	56.1	100.0		
Insurance	Yes	n	36	46	82	1.34	0.24
		%	43.9	56.1	100.0		
	No	n	50	45	95		
		%	52.6	47.4	100.0		

Economic situation	Earn less than spend	n	16	29	45	4.15	0.12
		%	18.6	31.9	25.4		
	Income equal to expenses	n	60	54	114		
		%	69.8	59.3	64.4		
	Earn more than spend	n	10	8	18		
		%	11.6	8.8	10.2		
Marriage age	>20	n	10	10	20	2.39	0.49
		%	11.6	11.0	11.3		
	21-25	n	16	25	41		
		%	18.6	27.5	23.2		
	26-30	n	44	38	82		
		%	51.2	41.8	46.3		
	<30	n	16	18	34		
		%	18.6	19.8	19.2		
Duration of marriage	1-3	n	49	44	93	2.39	0.49
		%	52.7	47.3	100.0		
	4-6	n	28	31	59		
		%	47.5	52.5	100.0		
	<6	n	9	16	25		
		%	36.0	64.0	100.0		
Satisfaction with marriage	Satisfied	n	70	71	141	0.31	0.57
		%	81.4	78.0	79.7		
	peevish	n	16	20	36		
		%	18.6	22.0	20.3		
Planning to have a baby	We planned together	n	20	22	42	1.68	0.64
		%	47.6	52.4	100.0		
	My wife wanted, I did not want	n	21	27	48		
		%	43.8	56.3	100.0		
	My wife did not want me I wanted	n	18	21	39		
		%	46.2	53.8	100.0		
	We both did not want to	n	27	21	48		
		%	56.3	43.8	100.0		
Smoking	Yes	n	40	37	77	0.61	0.43
		%	51.9	48.1	100.0		
	No	n	46	54	100		
		%	46.0	54.0	100.0		
Drugs	Yes	n	1	1	2	0.002	0.96
		%	50.0	50.0	100.0		
	No	n	85	90	175		
		%	48.6	51.4	100.0		
Satisfaction of child gender	She is a girl and I am satisfied	n	26	30	56	1.36	0.71
		%	46.4	53.6	100.0		
	She is a girl and I am not satisfied	n	21	21	42		
		%	50.0	50.0	100.0		
	He is a boy and I am satisfied	n	27	32	59		
		%	45.8	54.2	100.0		
	He is a boy and I am not satisfied	n	12	8	20		
		%	60.0	40.0	100.0		
Emotion score about becoming a father	0	n	10	12	22	0.31	0.95
		%	45.5	54.5	100.0		
	1-3	n	15	18	33		
		%	45.5	54.5	100.0		
	4-6	n	26	26	52		
		%	50.0	50.0	100.0		
	7-10	n	35	35	70		
		%	50.0	50.0	100.0		

Being ready to be a father	0	n	13	10	23	2.59	0.45
		%	56.5	43.5	100.0		
	1-3	n	24	19	43		
		%	55.8	44.2	100.0		
	4-6	n	26	30	56		
		%	46.4	53.6	100.0		
	7-10	n	23	32	55		
		%	41.8	58.2	100.0		
Accompanying your spouse	Yes	n	33	31	64	0.35	0.55
		%	38.4	34.1	36.2		
	No	n	53	60	113		
		%	61.6	65.9	63.8		

Table 3. Significant results of statistical tests to compare paternal compliance in the study groups

Ranks					**Mann-Whitney Test**	**Wilcoxon Signed Ranks Test**	**p**
	group	**N**	**Mean Rank**	**Sum of Ranks**			
Comparison of paternal compliance control and pretest testing	Control	86	88.65	7624.00	-0.088	-	0.930
	Exp	91	89.33	8129.00			
	Total	177					
Comparison of ability to perform roles and responsibilities, control and pre-test testing	Control	86	86.56	7444.00			
	Exp	91	91.31	8309.00	-0.618		0.537
	Total	177					
Comparison of stabilization in the control paternal position and pre-test	Control	86	91.29	7851.00			
	Exp	91	86.84	7902.00	-0.581		0.561
	Total	177					
Comparison of spiritual stability and internal satisfaction of control and pre-test	Control	86	87.77	7548.50			
	Exp	91	90.16	8204.50	-0.311		0.756
	Total	177					
Comparison of paternal compliance control and post-test testing	Control	86	72.94	6273.00	-4.057	-	0.000
	Exp	91	104.18	9480.00			
	Total	177					
Comparison of ability to play roles and responsibilities, control and post-test testing	Control	86	57.07	4908.00			
	Exp	91	119.18	10845.00	-8.076		0.000
	Total	177					
Comparison of stabilization in the control paternal position and post-test testing	Control	86	82.45	7090.50			
	Exp	91	95.19	8662.50	-1.659		0.097
	Total	177					
Comparison of spiritual stability and internal satisfaction of control and post-test testing	Control	86	80.69	6939.00			0.035
	Exp	91	96.86	8814.00	-2.112		
	Total	177					
Comparison of paternal compliance control and testing	control	172	156.76	26963.00	-4.548	-	0.000
	Exp	182	197.10	35872.00			
	Total	354					
Comparison of ability to perform control and testing roles and responsibilities	control	172	140.96	24245.00	-3.708		
	Exp	182	212.03	38590.00			0
	Total	354					

Comparison of stabilization in the paternal position of control and testing	control	172	171.94	29574.50			
	Exp	182	182.75	33260.50	-0.996		0.319
	Total	354					
Comparison of spiritual stability and inner satisfaction of control and experimentation	control	172	165.63	28488.00			
	Exp	182	188.72	34347.00	-2.132		0.033
	Total	354					
Comparison of paternal compliance pre-test and post-test control	Negative Ranks	32[j]	35.77	1144.50	-	-0.951	0.341
	Positive Ranks	40[k]	37.09	1483.50			
	Ties	14[l]					
	Total	86					
Comparison of ability to play pre-test and post-test control roles and responsibilities	Negative Ranks	31[a]	33.81	1048.00		-0.764	0.445
	Positive Ranks	37[b]	35.08	1298.00	-		
	Ties	18[c]					
	Total	86					
Comparison of pre-test and post-test paternal fixation	Negative Ranks	27[d]	30.85	833.00			
	Positive Ranks	35[e]	32.00	1120.00	-	-1.007	0.314
	Ties	24[f]					
	Total	86					
Comparison of spiritual stability and internal satisfaction of pre-test and post-test control	Negative Ranks	25[g]	28.52	713.00			
	Positive Ranks	34[h]	31.09	1057.00		-1.299	0.194
	Ties	27[i]			-		
	Total	86					
Comparison of pre-test and post-test paternal compliance	Negative Ranks	7[j]	8.36	58.50	-	-7.804[b]	0
	Positive Ranks	79[k]	46.61	3682.50			
	Ties	5[l]					
	Total	91					
Comparison of ability to play roles and responsibilities before and after the test	Negative Ranks	6[a]	8.08	48.50			0
	Positive Ranks	77[b]	44.64	3437.50		-7.698[b]	
	Ties	8[c]			-		
	Total	91					
Comparison of pre-test and post-test paternal positioning	Negative Ranks	18[d]	25.83	465.00			0
	Positive Ranks	60[e]	43.60	2616.00	-		
	Ties	13[f]				-5.372[b]	
	Total	91					
Comparison of spiritual stability and internal satisfaction of pre-test and post-test	Negative Ranks	13[g]	21.35	277.50			0
	Positive Ranks	62[h]	41.49	2572.50			
	Ties	16[i]			-	-6.070[b]	
	Total	91					
Comparison of pre-test and post-test paternal compliance	Negative Ranks	39[j]	72.06	2810.50	-	-6.025	0
	Positive Ranks	119[k]	81.94	9750.50			
	Ties	19[l]					
	Total	177					
	Negative Ranks	37[a]	57.54	2129.00			

Comparison of ability to play pre-test and post-test roles and responsibilities	Positive Ranks	114[b]	81.99	9347.00	-	-6.707	0
	Ties	26[c]					
	Total	177					
Comparison of pre-test and post-test paternal positioning	Negative Ranks	45[d]	66.22	2980.00			0
	Positive Ranks	95[e]	72.53	6890.00	-	-4.072	
	Ties	37[f]					
	Total	177					
Comparison of spiritual stability and internal satisfaction of pre-test and post-test	Negative Ranks	38[g]	63.71	2421.00			0
	Positive Ranks	96[h]	69.00	6624.00	-	-4.671	
	Ties	43[i]					
	Total	177					

Discussion

Although men make up over half of the country's population and most experience fatherhood, due to insufficient studies evaluating men's experience of paternal adaptation in Iran, it is not entirely clear how Iranian men understand paternal adaptation and how they describe becoming a father. In view of the importance of the topic, this research was created to assess the effect of training on paternal adaptation in first-time fathers.

In the present phenomenological study, the qualitative data gathered from interviews with first-time fathers was evaluated based on the qualitative research paradigm. Although the findings of this study are not applicable to all fathers, a review of the texts shows that this study's findings are in line with the findings of other studies on fatherhood done in other societies, and it seems that first-time fathers experience similar changes and experiences across different societies. In the following section, we discuss the contents extracted from this study and compare them to those of similar studies.

The concept of fatherhood encompasses the definition of fatherhood and the motivations for becoming a father. According to the point of view of the men participating in the study, a father is a man who becomes a parent with the birth of the child, becomes the rock of the family, and accepts new responsibilities to his child and spouse. Fathers expressed that internal needs, a desire for continuity and survival, and social factors have been their motivations for becoming a father. The results of other studies show that fatherhood is a psycho-social concept because it is formed as a result of interaction between existing social structures such as the family, society, and conditions that surround the man and his parenthood. The concept of fatherhood has been shifting under the influence of culture and social conditions, and different definitions, with theoretical, functional, ethical, and spiritual approaches have been stated for it (16). From the biological standpoint, a father is a man who has conceived a child by the means of sexual cells. From the biological point of view, a father is a superior being who deserves worship and obedience, and from the social standpoint, a father is a leader and advisor who takes on responsibilities for the family (17). Evidently, Iranian men's definition of fatherhood is a combination of the biological and social concepts of the father. Mott (18) believes that a father is a man who has a child and that fatherhood is doing the activities and performing the roles related to bringing up a child (18).

This research was done to achieve the general goal of assessing the effect of training on the paternal adaptation of first-time fathers. In the present study, in-person training was given to the group under study, during the 24th-28th, 28th-32nd, 32nd-36th weeks and the first week post-partum. Overall, three two-hour counseling sessions were held, each in two parts (first part: 10 minutes of Q&A in the beginning, 45 minutes of in-person training for fathers, 10 minutes of break, second part: 45 minutes of training, 10 minutes of Q&A at the end). The paternal adaptation questionnaires and Edinburgh Postnatal Depression Scale were filled out by both the experimental and control groups during the 24th and 28th weeks and 5-6 weeks post-partum. All of the study's hypotheses were confirmed after evaluating the results.

The results of the research showed that there is no statistically significant difference between the average paternal adaptation and the two factors of ability to fulfill roles and responsibilities, and spiritual stability and internal satisfaction of the experimental group and control group before the test ($P>0.05$), and also between the average paternal adaptation and the two factors of ability to fulfill roles and responsibilities, and spiritual stability and internal satisfaction of the control group, before and after the test ($P>0.05$). However, there is a statistically significant difference between the average paternal adaptation and the two factors of ability to fulfill roles and responsibilities, and spiritual stability and internal satisfaction of the experimental group and control group after the test ($P<0.05$), between the average paternal adaptation and the two factors of ability to fulfill roles and responsibilities, and spiritual stability and internal satisfaction of both the experimental group and control group ($P<0.05$), between the paternal adaptation and the two factors of ability to fulfill roles and responsibilities, and spiritual stability and internal satisfaction of the experimental group, before and after the test ($P<0.05$),

and finally between the average paternal adaptation and the two factors of ability to fulfill roles and responsibilities, and spiritual stability and internal satisfaction of both the experimental group and control group, before and after the test (P<0.05). Thus, it can be concluded that education increases the extent of paternal adaptation. It can also be concluded from the results of the descriptive statistics of the variables, that education increases the extent of paternal adaptation, regardless of the pre-experiment effect.

Eskandari et al. (10) did a study in Ghom, on 572 first-time fathers. The paternal adaptation questionnaire was used in this study. The results showed that planning one's parenthood is that most important factor in the ability to fulfill the roles and responsibilities of fatherhood (β = 2.67, p < 0.001). Marital satisfaction was the most predictive factor in creating an understood father (β = 3.09, p = 0.001) and stabilizing the place of the father (β = 4.66, p < 0.001). The father's non-government job was the only predictor of distress and worry (β = -1.19, p < 0.001), and marital satisfaction was the most important predictor of paternal adaptation (β = 14.68, p < 0.001). Moharrami et al. (19) conducted a quasi-experimental study with a pre-test plan, a post-test plan, and a 1-month follow-up period, to evaluate first-time fathers of naturally-born infants, with paternal adaptation scores of under 67% in the questionnaire. 8 group training sessions of 60 minutes were held for the interference group, based on the positive psychology approach. Over one month after the completion of the interference, the extent of the fathers' adaptation had increased from 117 to 155.4 (P<0.05) (3), which was in line with the results of our research.

In a study (2019), both in-person and online training increased the acceptance of fatherhood and its relevant activities (P<0.001). However, the effect of in-person training was more durable (20). In a phenomenological study (21) on first-time fathers of 7 to 12-month-old babies, it was concluded that training classes before birth are effective in fathers' adaptation, which is similar to our findings. (22). Jalali et al (23) did a study on 50 volunteering couples, who were randomly divided into two groups. 24 group-training sessions of 90 minutes were done in the experimental group, using the Olson method of family education. The third version of the Family Adaptation and Cohesion Scale (FACES-III) was used to evaluate the dependent variable. They concluded that the family education program based on the Olson method can improve the adaptation and the system of the family (P<1%).

Conclusion

Pregnancy is one of the important, critical, and also magnificent periods of every woman's life, and her physical, emotional, and mental health during this period has significant effects on the health of the fetus, the success of natural birth, and breastfeeding. Men's support of their wives during pregnancy and their participation in childbirth processes can be helpful in this matter, but in spite of the many evidences of its benefits, it has not been promoted well enough yet (24). In order to facilitate men's participation, it is necessary to provide them with the required information and education about reproductive health, so that they can take informed and aware steps towards participation (25). This participation is extremely miniscule and insignificant today, which is due to traditions and customs (26) (27). Changes in the management policies of medical and healthcare facilities can be the first step toward providing couple-friendly services. Today, strategic plans for promoting the participation of men in women's health have been created in many countries of the world (28, 29). However, there is no doubt that the specific issues related to pregnancy should be presented at the beginner level in pre-marriage classes, and more comprehensively in pregnancy courses (30). It should be noted that mere presence during pregnancy care and receiving training does not guarantee an increase in the support and participation of spouses during pregnancy. Altering men's views, attitudes, and behaviors requires more extensive planning, and training midwives about encountering men's participation should be regarded as a necessary step (33). Programs for promoting men's participation should overcome common obstacles such as a lack of information about the opinions and outlooks of men, feeling a lack of belonging in the system of providing services, and a scarcity of trained male staff, father-friendly clinics, and suitable hours (25). Overall, it can be concluded that in order to succeed in the reproductive health interference programs, evidence-based programs must be used and care must be provided in a customer-centric, accessible, and payable manner, with effective communication strategies and skilled and trained workers. Training programs for men should be in line with men's needs in healthcare and hospital services and be supported and advertised throughout the country. Since the topic of men's participation in women's health is a new idea, especially in our country, there is a need for conducting research about the different aspects of men's participation in reproductive health and pregnancy and birth care.

In adapting to the role of fatherhood, men can also suffer from contradictions and mental health consequences such as depression, anxiety, and even rage towards their spouses. Therefore, it could be said that expecting fathers need support, as do expecting mothers. Creating conditions such as fathers' presence during pregnancy and birth care and the availability of counseling programs in healthcare for men can have a positive effect on their preparation for fatherhood (32). Overall, it can be concluded that in order to succeed in the reproductive health interference programs, evidence-based programs must be used and care must be provided in a customer-centric, accessible, and payable manner, with effective communication strategies and skilled and trained workers. Training programs for men should be in line with men's needs in healthcare and hospital services and be supported and advertised throughout the country. Since the topic of men's participation in women's health is a new idea, especially in our country, there is a need for conducting research about the different aspects of men's

participation in reproductive health and pregnancy and birth care (33).

Acknowledgments

We hereby sincerely thank the participating fathers and the respected staff of the healthcare centers and facilities, who helped us carry out this research project.

References

1. Roseman MJ, Reichenbach L. International Conference on Population and Development at 15 years: achieving sexual and reproductive health and rights for all? American journal of public health. 2010 Aug; 100(3):403-406.
2. Shamsikhani S, Soleimani N, Matourypour P, Soleimani H. Investigation of Predisposing Factors of Paternal Postpartum Depression, Iranian Journal of Psychiatric Nursing. 2016 Sep; (4)4: 52-57.
3. Tehrani SG, Bazzazian S, Nayeri ND. Pregnancy experiences of first-time fathers in Iran: a qualitative interview study, Iran Red Crescent Med Journal. 2015 Feb; 17(2), e12271.
4. Teague SJ, Shatte A. Exploring the Transition to Fatherhood: Feasibility Study Using Social Media and Machine Learning, JMIR Pediatr Parent. 2018 Jun; 1(2): e12371.
5. Eskandari N. Paternal adaptation: design, determination of psychometric properties and application, American journal of men's health. 2015 July; 12(6): 2018-2028.
6. Gemayel DJ, Wiener KK, Saliba AJ. Development of a conceptual framework that identifies factors and challenges impacting perinatal fathers, Heliyon. 2018 July; 4(7):45-53.
7. Nasiri S, Vaseghi F, Moravvaji SA. Men's educational needs assessment in terms of their participation in prenatal. Childbirth, and postnatal care, Journal Education Health Promote. 2019 Mar; 8(59):123-136.
8. Astaraki LV. Paternal-Fetal Attachment Behaviors and Associated Factors Mazandaran University Media Science. 2014 Sep; (117) 24:173-183.
9. Bourget M, Héon M, Aita M. Educational Intervention for Expectant Fathers Attending Prenatal Class A Clinical Project, the Journal of Perinatal Education. 2017 Aug; 26(1): 23-36.
10. Eskandari N, Simbar M, Vedadhir AA. Related Factors to Paternal Adaptation: A Cross-sectional Study for First-time Fathers, Iran Journal Nurse Midwifery Research. 2019 Jan; 24(1): 18-24.
11. Simbar M, Nahidi F, Ramezani-Tehrani F, Akbarzadeh A. Educational needs assessment for men's participation in perinatal care, Eastern Mediterranean Health Journal. 2011 May; 17:689-696.
12. Werner-Bierwisch T, Pinkert C, Niessen K. Mothers' and fathers' sense of security in the context of pregnancy, childbirth and the postnatal period: an integrative literature review, BMC Pregnancy Childbirth. 2018 Dec; 18(1):473-482.
13. Ives J. Men, maternity and moral residue: negotiating the moral demands of the transition to first time fatherhood, Social Health Illn. 2014 Aug; 36(7):1003-1019.
14. Hosseini Gharateka SM, Mohammad S, Emami Moghandam Z, Golmakani N, Vashshani B, Reza H. Effect of Spouses' Educational Program on Quality of Life of their Pregnant Wives. Journal of Mazandaran University of Medical Sciences. 2017 Dec; 27(155): 170-175.
15. Sanaati F. The Effect of Training Pregnant Women and Their Husbands on Health Promoting Behaviors during Pregnancy and Postpartum Period, Journal Babol University Medical Science. 2018 Apr; (5)20: 47-38.
16. Sullivan R. Fathering and children. Australian Institute of Family Studies Conference. Pobrane z: www. aifs. org. au/institute/afrc7/sullivan1.html 2000 Jul 26.
17. Barenski S. Transition to Fatherhood: A Puerto Rican Perspective. Doctoral dissertation, University of Massachusetts. 2010 Sep.
18. Mott F. The meaning of fatherhood for men. NICHD Workshop" Improving Data on Male Fertility and Family Formation" at the Urban Institute. Washington, DC: January, 1997 Sep; 16-17.
19. Moharrami Qidary T, Emamgholi Khooshehchin T, Dadadshi M. The Effect of Positivity Approach Counseling on Acceptance and Adaptation to Parental Role in Husbands of First-Time Mothers. Preventive Care in Nursing and Midwifery Journal. 2020 Aug; 10(3):11-21.
20. Burn M, · Tully LA, · Jiang Y, · Piotrowska · P J, Collins DAJ, · Sargeant K, · Hawes D, · Moul C, · Lenroot RK, · Frick · PJ, Anderson V,· Kimonis ER, · Dadds MR. Evaluating Practitioner Training to Improve Competencies and Organizational Practices for Engaging Fathers in Parenting Interventions. Child Psychiatry and Human Development. 2019 Aug; 50: 230-244.
21. Omar Kowlessar JR, Wittkowski FA. First-time fathers 'experiences of parenting during the first year, Journal of Reproductive and Infant Psychology. 2014 Oct; 4:97-140.
22. Eskandari N, Simbar M, Vadadhir A, Baghestani AR. Design and Evaluation of the Psychometric Properties of a Paternal Adaptation Questionnaire. American Journal of Men's Health. Article reuse guidelines: 2018 July; 12(6):36-42.
23. Jalali H, Ahadi A, Kiyamanesh R. The Effectiveness of Family Training Based on Olson Approach for Family Adaptation and Cohesion, Journal of Psychological Models and Methods, 2016 Aug; 7(24):1-22.
24. Frogalsadat M, Afsaneh K. The participation rate of men in the care of pregnant women in the city anymore and Sabzevar. Gom medical university Journal. 2012 May; 6(1):66-74.
25. Simbar M, Ghafari F, Tork Zahrani H, Alavi H. Majd Assessment of quality of midwifery care in labour and delivery wards of selected Kordestan

Medical Science University hospitals. Internal Journal Health Care Qual. 2009 April; 22(3):266-277.

26. Vehviläinen-Julkunen K, Emelonye A. Spousal participation in labor and delivery in Nigeria. Annals of medical and health sciences research. 2014 Feb; 4(4):511-515.
27. Kululanga LI, Sundby J, Malata A, Chirwa E.Male involvement in maternity health care Malawi. Afr J Reprod Health. 2012 Mar; 16(1):145-157.
28. Eskandari N, Simbar M. Exploring Fatherhood Based on Iranian Men`s Experiences: A Qualitative Research, Journal Mazandaran University Medical Science 2015 Sep; (124) 25:83-69.
29. Taulo F. Centre for reproductive health, 2nd reproductive health conference, Lilongwe, Malawi. Malawi Medical Journal. 2010 Mar; 22(1):2-4.
30. Masoomeh S, Fatemeh N, Fahimeh RT, Ali R, Ali A. Educational needs of fathers to participate in prenatal care. paiesh. 2012 May; 11(1):43-49.
31. Forogalsasat M, Khadjeh M. Causes, consequences, obstacles and men's participation in prenatal care and Based on the experiences of maternity care provider's midwifery: a qualitative study. Arak Medical University. 2012 Oct; 15 (1):104-115.
32. Farnia S, Khani S. Men's preparation for fatherhood during pregnancy and delivery. The 1st National Conference on Safe Pregnancy. 2016 Aug: 29-30. [In Persian]
33. Fathnezhad Kazemi A, Sharifi N, Simbar. A review on different aspects of men's participation in antenatal care, Jorjani Biomedicine Journal. 2017 Sep; 5(1):1-13.

*****