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Effects of Prenatal Education on Fear of Childbirth

Gebe Eğitim Sınıflarının Doğum Korkusuna Etkisi

Hülya DEMİRCİ,[a]
Hanife Nurseven ŞİMŞEK[a]

[a]Department of Midwifery, Manisa Celal Bayar University Faculty of Health Sciences, Manisa

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Correspondence:
Hanife Nurseven ŞİMŞEK
Manisa Celal Bayar University Faculty of Health Sciences, Department of Midwifery, Manisa, TURKEY/TÜRKİYE
hanife.ege.2006@hotmail.com

ABSTRACT Objective: The aim of this study was to investigate effects of education on fear of childbirth between attendance at pregnant education classes program and routine care. **Material and Methods:** The study was carried out as quasi-experimental study, comparing a pregnant education group and a control group. Demographic and obstetric data forms and Wijma Delivery Expectancy/Experience Questionnaire were used for data collection. **Results:** Pregnant education classes were found to reduce fear of childbirth. The pregnant women in the intervention group had less fear of childbirth (39.1±23.9) than those in the control group (59.3±21.7). Women who had experienced fear of childbirth also had an increased risk for causes of fear of childbirth. Statistical significance was measured labour of pain, dying during childbirth, sick or handicapped child, perineal and vaginal tears, loss of control and emergency cesarean section and unfriendly staff in maternity hospital between groups. **Conclusion:** Pregnant education classes are effective in reducing fear of childbirth. It is recommended that participation in pregnant education classes in public hospitals should be encouraged. As such, it may be thought that the rate of cesarean delivery depending on maternal request due to fear of childbirth will reduce.

Keywords: Fear; pregnant women

ÖZET Amaç: Çalışmanın amacı; gebe eğitim sınıflarına katılan ve eğitim alan gebeler ile bu sınıflara katılmayan ve rutin bakım alan gebeler arasında, eğitimin doğum korkusu üzerindeki etkilerini incelemektir. **Gereç ve Yöntemler:** Çalışma, deney ve kontrol grubunu karşılaştıran yarı deneysel olarak yürütülmüştür. Veri toplamak için demografik ve obstetrik veri formu ile Wijima Doğum Beklentisi/Deneyimleri ölçeği kullanılmıştır. **Bulgular:** Gebe eğitim sınıflarının doğum korkusunu azalttığı saptandı. Müdahale grubundaki gebe kadınların (39,1±23,9), kontrol grubundaki gebe kadınlardan (59,3±21,7) daha az korkuya sahip olduğu bulundu. Doğum korkusu yaşayan kadınlar aynı zamanda, doğum korkusunun nedenleri için artmış bir riske sahipti. Gruplar arasında doğum ağrısı, doğum eyleminde ölme, hasta ve özürlü çocuk, perineal ve vajinal yırtıklar, kontrol kaybı, acil sezaryen ve arkadaş canlısı olmayan personel arasında istatistiksel olarak anlamlı bir fark saptandı**. Sonuç:** Gebe eğitim sınıfları korkuyu azaltmada etkilidir. Devlet hastanelerinde gebe eğitim sınıflarına katılımın teşvik edilmesi önerilebilir. Bu nedenle doğum korkusundan dolayı maternal isteğe bağlı sezaryen doğum oranlarının azalacağı düşünülmektedir.

Anahtar Kelimeler: Korku; gebe kadınlar

Childbirth education is frequently a good way to remove or alleviate fears associated with pregnancy and childbirth because it provides knowledge and skills to pregnant women and family.[1] But, evidence on benefits of antenatal education for childbirth, remain largely unknown.[2]

PREGNANT EDUCATION CLASSES

Pregnant and childbirth education classes program is to enhance knowledge and skill to all pregnant women in pregnancy, labour and birth, the postpartum period, about pain management techniques, expectant mother and father adaptation to new roles and build women's confidence in their ability to give birth and prepare for childbirth.[2-6]

Koehn reported that childbirth education less infant mortality, less discomfort and less disability.[7] Previous studies have shown that benefits these classes reduced fear of childbirth, helpful in preparing for childbirth and early parenthood, higher likelihood breastfeeding, increased birth satisfaction, decreased need for analgesic medication.[4,6,8-10]

Pregnant education and childbirth classes in Turkey, are organized by health care professionals and childbirth educators. The professionals usually consists of a gynecologist, a midwife, dietitian, a psychologist and childbirth educators. Although, the first classes started more than twentysix years ago, our society is still not ready for this education. These classess has become widespread since the beginning of the 2000s. Especially, the number of private education classess has began to increased in large cities after 2007. At the present time, pregnant education and childbirth education classes are still conducted over 20 centers. In 2013, Health Ministry introduced pregnanct education classes as an integrated part of antenatal care but, it is not part of routine care.[5,11] Thus, very few expectant women and parents use these services.

However, there is not a standart program in private or public pregnant and childbirth education classes. Because, the quality, lenght and content of the education varies from one educator to another.[2,12] Additionally, it is a disadvantage that these classes in private health sector are expensive.

As a result, our country, pregnant education and birth preparation classes continues to be widespread and public hospitals as well as private health sector. The numbers of participants in these classes is increasing day by day. Increasing level of education, increased awareness and the support of the Health Ministry in this regard is expected to be more widespread and attendation.[11]

FEAR OF CHILDBIRTH

Pregnancy and childbirth is a highly joyful experience which physical, psychological, emotional and social changes in the life of a woman and her family.[13] They are transition processes for parenthood in a women's life related to heightened levels of anxiety.[14] Fear of childbirth (FOC) has been described as anxiety and worry caused of vaginal delivery which is a normal reaction to an unknown and unpredictable situation.[15] According to previous studies; internationally, the prevalence of fear associated with childbirth is often reported to affect around 20% women and it has been estimated that 6-10% of pregnant women suffer from intense fear of childbirth that impacts their daily work and other activities.[13,16,17] The BIDENS study of 6870 pregnant women in six European countries found significant differences between countries with prevalence varying from 4.5% to 15.6% for primiparous women and from 7.6% to 15.2% for multiparous women.[15]

Previous researches regarding the cause of fear of childbirth have shown association between psychological problems, demographic and obstetric factors. It has been associated with factors such as nulliparity, increased gestation, young maternal age, low education or socio-economic level, negative stories about childbirth, pre-existing psychological problems, lack of social support, a history of abuse or problems in sexuality, non-functional relationships, low assertiveness or self-esteem, graeat number of daily stressors, ethnicity, unplanned pregnancies, having a sick or handicapped child, being left alone in a labour ward, unfriendly staff in maternity hospital, fear of death, loss of control, pain during birth and unbearable pain, undergo emergency cesarean section, episiotomy, vacuum extraction, ruptures, a previous operative delivery or adverse perinatal outcome, disappointment with previous vaginal birth and lack of knowledge, not attending the childbirth preparation classes.[9,13,15-26]

This fear may affect pregnancy, contribute to obstetric complications and result in increasing rate of cesarean section.[17] Since 1985, it was defined the ideal rate for caesarean sections to be between 10% and 15% by WHO.[27] While cesarean birth rate was 53,1%, primary cesarean birth rate was 27.2% in Turkey.[28] Our country, it is considered that this increment is to be an important contribution to fear of childbirth.

Given the limited understanding of effect of antenatal education on fear of childbirth within the Turkish context, it is opportune to examine the effect of education public hospital within Health Ministry. Especially, in the western countries, the Wijma Delivery Expectancy/Experience Questionnaire (W-DEQ) is used to determine fear of childbirth both in scientific and clinical studies by many researchers. This scale was limitation used in our country and in routine antenatal follow-ups do not ask whether pregnant woman is fear of childbirth, as such the aim of this study was to:

1. Describe what kind of fears related to pregnancy and childbirth,

2. Describe women's levels of childbirth fear,

3. Examine the effect of antenatal education on fear of childbirth.

MATERIAL AND METHODS

STUDY DESIGN

A quasi-experimental study was conducted by comparing women who attended pregnant education classes program (intervention group), and women who received routine antenatal care (control group) in Figure 1 was shown. The dependent variables in this study were fear of childbirth and the independent variable was pregnant education classes program.

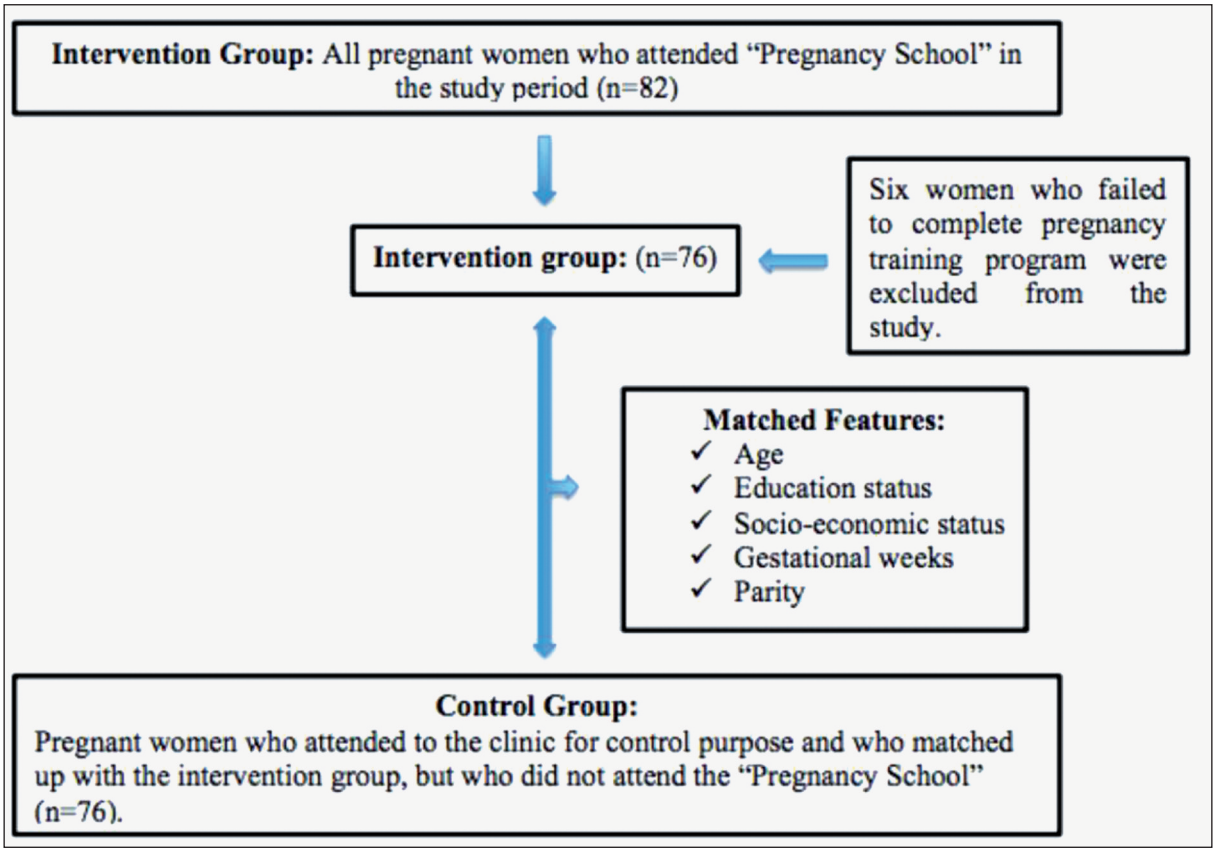

FIGURE 1: Research Design.

PARTICIPANTS

The study was conducted at a public hospital in Manisa. Before the study commenced, the fact that free pregnant education would be given was announced via the brochure, telephone and social media (Facebook). Also verbally, pregnant women informed in outpatient maternity clinic. Women who volunteered to participate in the study between September 2014 and October 2015, and who met the inclusion criteria, comprised the experimental group. The control group consisted of women who received routine antenatal care at an outpatient maternity clinic.

The inclusion criteria were as follows: over gestation of 24 weeks, minimum literacy, not at high risk in pregnancy, no previous cesarean section birth, pregnant women who accept to participate in research. The sample size was based on the mean score and standard deviation of the effect of education given to primigravida women on fear of childbirth found in a study by Kızılırmak and Başer.[10] According to this study, minimum sample size was calculated as 74 pregnant women for both study and control groups by considering 95% power and 5% error margins. However, a higher number of participants was included in case of missing participants.

A total 158 pregnant women with 82 in the control group and 76 in the intervention group were recruited to the study between 1st of September in 2014 and 2nd of October in 2015 and those who met the inclusion criteria were taken as controls.

DATA COLLECTION

Two forms were used to collect data: demographic data form and the Wijma Delivery Expectancy/Experience Questionnaire.

DEMOGRAPHIC AND OBSTETRIC DATA FORMS

This form was developed by researchers based on a literature review.[23,26] The form consisted of 26 questions related to the pregnant women's demographic and obstetric characteristics and opinions about birth. The socio-demographic data included age, education and occupational status, family economic status, husband's education, husband's occupation, health insurance, family type, marital age and years of marriage. Obstetric data included first pregnancy age, number of pregnancy, years of the most pregnancy, number of birth, number of abortus, number of child, number of stillbirth, gestational age, wanted pregnancy, previous pregnancy, fear of childbirth and causes of fear of childbirth. Their demographic and obstetric data were investigated in terms of the effect on fear of childbirth.

WIJMA DELIVERY EXPECTANCY/ EXPERIENCE QUESTIONNAIRE

The W-DEQ was developed by Klaas and Barbro Wijma in 1998 in Sweden in order to measure fear of childbirth on a six-point likert scale using about expectations by women during pregnancy. The Turkish version of the W-DEQ was translated by Hikmet Öznur Körükçü in 2009. It is a 33 items and each scoring from 0 to 5, where 0 refers to 'extremely' and 5 refers to 'not at all'. The minimum and maximum possible scores may range from 0 to 165, respectively. A sum score of 85 or more is considered severe FOC. Score equal to or lower than 37 indicate low fear, a score 38 to 65 indicate moderate fear, and scores equal to or higher than 66 represent high levels of fear. As the scores increase, so do the fear of childbirth experienced by women. Korukcu et al. (2012) examined validity and reliability of the Turkish version of W-DEQ with women in the last trimester of pregnancy, and found Cronbach's alpha of 0.89 and split-half reliability of 0.91. The internal consistency coefficient of W-DEQ in this study was 0.93.[14] The scale was applied to both the experimental group and the control group after training.

INTERVENTION

Training was provided to groups of six to ten participants, once a week (180 minutes) for eight weeks. The total training time was 24 hours. The content of the pregnant education program in Table 1 was shown. The education was provided using compact discs, slide presentations, pelvis-baby mannequins and pilates ball and given by a multidisciplinary team (midwife, obstetrician,

TABLE 1: Content of group education in pregnant education class program in Manisa.

Educational Content	Group Education
Communication between pregnant woman and health professional, reproductive organs and development of pregnancy	Week 1
Physiological and psychologic changes in pregnancy, daily life in pregnancy	Week 2
Nutrition in pregnancy and nutritional supplementation, booking visit, antenatal screening and immunization	Week 3
Common problems associated with early and advanced pregnancy, recommendations	Week 4
Warning signs and management in pregnancy	Week 5
Childbirth process, non-pharmacological pain relief methods in coping with labour pain	Week 6
Postpartum period and characteristics, care of newborn in postpartum period	Week 7
Contraception in postpartum period	Week 8
Physical and mental relaxation techniques, physical exercises	All week

physiotherapist and dietitian). The main approach in the presentation of the training program is the Ministry of Health's pregnancy information classes.

ETHICAL CONSIDERATIONS

All participants in the study were obtained verbal and written informed consent. The participants were verbally explained about the aim of this study. All of the participants were informed that their attendation in the study was voluntary, and that their names would remain confidential. Ethical Statement was obtained from the university ethical committee (02/07/2014/20478486-258). Also, this study was carried out accordance with the 2008 principles of Helsinki Declaration.

DATA ANALYSIS

Data were analyzed using Statistical Package for the Social Sciences Version 20 (SPSS). Significance was judged as $p<0.05$. Frequencies and descriptive statistics were conducted on all variables. Test for parametric data and non-parametric data: Shapiro-Wilk Test, average, standard deviation, independent samples t-test, and chi-square test were performed to compare differences in demographic features and fear of childbirth between the groups.

RESULTS

PARTICIPANTS' CHARACTERISTICS

Socio-demographic, obstetrics characteristics of the women in the two groups in Table 2 are shown.

TABLE 2: Demographic characteristics of the participants in the antenatal education and the control groups.

Variable	Pregnant education group (n=76)	Control group (n=76)	p-value
Women's age (year)	27.93±4.07	27.07±4.07	**0.187**
Gestational week	34.67±3.19	34.25±4.28	**0.493**
Women's education			
Primary school	3(3.9%)	8(10.5%)	
Secondary school	13(17.1%)	11(14.5%)	**0.180**
High school	25(32.9%)	16(21.1%)	
University	35(46.1%)	41(53.9%)	
Family Income			
Low	12(15.8%)	12(15.8%)	
Moderate	52(68.4%)	48(63.2%)	**0.694**
Good	12(15.8%)	16(21.1%)	
Parity			
Primigravida	65(85.5%)	56(73.7%)	**0.070**
Multigravida	11(14.5%)	20(26.3%)	

TABLE 3: Wijma delivery expectancy/experience questionnaire (W-DEQ) after education.

Scale	Pregnant education group (n=76) Mean (SD)	Control group (n=76) Mean (SD)	t/p
W-DEQ	39.1 (23.9)	59.3 (21.7)	-5.450 / 0.000

There were no statistically significant differences between the demographic characteristics of the pregnant in the two groups. The mean age of the women in the intervention group was 27.9 [standard deviation (SD) 4.0] years, and they were in the 34.6th week of gestation (SD 3.1). Most of these women (68.4%) perceived their income to be moderate. The majority of women in the experimental group were university graduates (46.1%). The mean age of the women in the control group was 27.0 (SD 4.0) years, and they were in the 34.2th week of gestation (SD 0.8). Most of these women (63.2%) perceived their income to be moderate, 53.9% were university graduates.

Mean W-DEQ scores for the two groups in Table 3 are presented. Differences between the two groups in terms of their W-DEQ scores were significant (p=0.000). The mean W-DEQ score of the women in the intervention group was lower than the women in the control group, which indicates that their fear of childbirth was less than the women in the control group (p=0.000).

Mean W-DEQ subgroups scores of the pregnant women in the intervention group and those in the control group in Table 4 are presented. There were significant differences between the groups (p=0.000). Between antenatal education group and control groups in pregnant women expressed fear of childbirth were statistically significant differences (p=0.000) (Table 4).

Comparison of pregnant women who have fear of childbirth and their mean W-DEQ scores in Table 5 are shown. There were significant differences between the groups (p=0.003).

Likewise, women who had experienced fear of childbirth also had an increased risk for causes of fear of childbirth. Statistical significance was measured labour of pain, dying during childbirth, sick or handicapped child, perineal and vaginal tears, loss of control and emergency cesarean section and unfriendly staff in maternity hospital (Table 6).

DISCUSSION

The main findings of this study, the women who received pregnant education had significantly lower W-DEQ scores than the women in the control group. Therefore, pregnant education was effective in reducing fear of childbirth. In other experimental studies on the same topic, women who attended pregnant education classes were found to have less fear of childbirth.[4,6,10] In Finland study reported that pregnant women in antenatal education group had less fear of childbirth than those in the control group.[9] Fabian and colleagues reported that the majority of women (74%) found antenatal education classes helpful in preparing for childbirth and early parenthood.[8] Pregnant education classes may have been effective in reducing fears, because it provides knowledge and skills about pregnancy, childbirth and postpartum process. There is, but, some contradictory evidence

TABLE 4 Wijma delivery expectancy/experience questionnaire (W-DEQ) of subgroups scores and pregnant women who express fear of childbirth.

		Pregnant education group (n=76)	Control group (n=76)	p-value
W-DEQ of subgroups	Mild level of fear	39 (72.2%)	15 (27.8%)	
	Moderate level of fear	25 (45.4%)	30 (54.5%)	0.000
	Severe and clinical level of fear	12 (27.9%)	31 (72.1%)	
Fear of childbirth	Yes	32 (36.4%)	56 (63.6%)	
(expression of pregnancy)	No	44 (68.8%)	20 (31.3%)	0.000

TABLE 5: Comparison of pregnant women stated that "I am afraid of birth" and Wijma Delivery Expectancy/ Experience Questionnaire (W-DEQ) mean scores.

Scale	Pregnant education group (n=32) Mean (SD)	Control group (n=56) Mean (SD)	t/p
W-DEQ	50.1 (22.6)	63.9 (18.7)	-3.074 / 0.003

TABLE 6: Causes fear of childbirth.

Factors	Pregnant education group (n=76)	Control group (n=76)	p
Labour of pain	18 (35,3%)	33 (64,7%)	0.01
Dying during childbirth	3 (15,0%)	17 (85,0%)	0.001*
Sick or handicapped child	7 (23,3%)	23 (76,7%)	0.001
Perineal and vaginal tears	8 (28,6%)	20 (71,4%)	0.012
Loss of control	6 (28,6%)	15 (71,4%)	0.034
Emergency cesarean section	4 (16,0%)	21 (84,0%)	0.000*
Unfriendly staff in maternity hospital	5 (21,7%)	18 (78,3%)	0.003

between fear and antenatal education classes. In Swedish study reported that attendation in childbirth and parenthood education classes did not seem to affect first-time mothers' knowledge of childbirth and consideration of parental practices.[8] Waldenström and colleagues identified that childbirth education seemed to be less effective to improve women's birth experience.[25] However, evidence on benefits of antenatal education for childbirth, remain largely unknown.[2]

In our study was assessed WDEQ-A≥66, the prevalence of childbirth fear has been 15,8% in pregnant education group and 40,8% in control group. Stoll et al. reported that nulliparas who did not attended classes were 23.0% and multiparas who did not attended classes were 25.9%, ın other words, fear of childbirth scores did not differ between attenders and non-attenders.[4] In the world, when measured by the WDEQ-A the prevalence of high levels of childbirth fear (score ≥66) is reported 25% in Canada, 26% in Sweden, 27% in Australia.[13,19] But, there are no studies on the prevalence of fear of childbirth in Turkey. Fear of childbirth is a prevalent cause for elective caesarean on maternal demand without medical indication.[15] Accordingly, the high cesarean birth rate may indicate a high fear of childbirth. While cesarean birth rate was 52,4%, primary cesarean birth rate was 27% in Turkey.[28] As a matter of fact, fear of childbirth and less pregnant education classes and lack of participants have been increasing caesarean birth rate in our country. The British study indicated that attendance at childbirth education classes was related to a significantly lower caesarean section rate, among multiparous women who attended in childbirth classes attempted more than twice as many vaginal birth after caesarean.[4]

Women in control group in this study, the majority of women who stated that women's fear of childbirth related to labour pain, emergency cesarean, fear of death, baby with disabled and malformation, loss of control, perineal and vaginal tears and unfriendly staff maternity hospital. In Finland study indicated that causes of fear were emergency cesarean section, child's and mother's well-being, childbirth and family life and 78% pregnant women stated fears related to pregnancy and childbirth.[26] Haapio and colleagues stated that the most common fear related to childbirth and the child's and mother's well-being.[9] In a longitudinal cohort study of 2541 Swedish women, 70% of women had a negative birth experience that risk factors were related to emergency cesarean section, pain and loss of control.[25] In Sweden study reported that some women with low fear of childbirth had the most positive birth experience, but others women with high fear of childbirth had a negative birth experience and underwent emergency cesarean section and instrumental vaginal delivery. In this study, women with high level of fear had at least 12-fold risk unplanned cesarean section.[22] Ryding and colleagues stated that fear of childbirth in third trimester may increase the risk of emergency cesarean section.[24] In a Norwegian Mother and Child Cohort Study of 4876 pregnant women, childhood abuse was related to fear of childbirth and choose for caesarean section during second pregnancy.[29] Paradoxically, The Akershus Birth Cohort study of 1357 parous women in Norway found that almost 80% of women experienced

obstetric complications did not develop a fear of childbirth and the birth a negative overall experience.[17] It is considered that pregnant women are more knowledgeable and skills in pregnancy, labor and childbirth process, because they attend to pregnant education classes. Therefore, they may have not fear of childbirth and of the above factors.

In Turkey, midwives do not ask whether pregnant woman is fear of childbirth in routine antenatal follow-ups. Also, any scale is used to determine the fear of childbirth of pregnant women. In this study was found that W-DEQ average were high in pregnant women who stated that "I am afraid of birth". It is important that even if any scale is used to determine the fear of childbirth, the midwives may ask whether the pregnant women have fear of childbirth at routine antenatal follow-ups.

CONCLUSION

This study examined the effects of eight weeks of antenatal education on fear of childbirth, and found that antenatal education reduced the fear of childbirth. Because pregnant education classes have positive results, it is recommended that pregnant education classes should be provided as a standard program in public and private health sector in developing countries. Participation in pregnant education classes in public hospital should be encouraged and part of the routine care. Midwives may ask whether the pregnant women have fear of childbirth at routine antenatal follow-ups.

LIMITATIONS

This study have some limitations. First, participation was not common in pregnant education classess in Turkey. Second, it was difficult to provide a randomization because there is little participation in pregnant education classes. Third, continuity of participants was difficult. Fourth, pregnant women were not included in this study due to previous cesarean section. Also, the pregnant women in our sample are not generalizable to all Turkish pregnant women.

SUGGESTIONS FOR FUTURE RESEARCH

Further studies are required comprising larger samples from different settings and regions. Obstetric and neonatal outcomes should be investigate in order to assessment that effect of antenatal education on fear of childbirth during the labor, childbirth and postpartum period.

Source of Finance

During this study, no financial or spiritual support was received neither from any pharmaceutical company that has a direct connection with the research subject, nor from a company that provides or produces medical instruments and materials which may negatively affect the evaluation process of this study.

Conflict of Interest

No conflicts of interest between the authors and / or family members of the scientific and medical committee members or members of the potential conflicts of interest, counseling, expertise, working conditions, share holding and similar situations in any firm.

Authorship Contributions

Idea/Concept: *Hanife Nurseven Şimşek, Hülya Demirci;* ***Design:*** *Hülya Demirci;* ***Control/Supervision:*** *Hanife Nurseven Şimşek;* ***Data Collection and/or Processing:*** *Hanife Nurseven Şimşek;* ***Analysis and/or Interpretation:*** *Hülya Demirci;* ***Literature Review:*** *Hanife Nurseven Şimşek;* ***Writing the Article:*** *Hanife Nurseven Şimşek, Hülya Demirci;* ***Critical Review:*** *Hülya Demirci.*

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