

## The Effects of Prenatal Classes on the Quality of Life in Pregnant Women

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### Abstract

**Introduction:** Quality of life is individuals' perception of their status in life in the context of the culture and value systems they live in. Pregnancy has a great impact on mothers and their quality of life. Prenatal classes provide mothers with information about pregnancy, labor process and newborn care.

**Objective:** The present study was conducted to evaluate the effect of prenatal classes on the quality of life of pregnant women.

**Materials and Methods:** This quasi-experimental study recruited 100 pregnant women in Amini Hospital of Langeroud, Iran. Mothers were divided into intervention group, who received education (n = 50), and control group who received only routine prenatal care (n = 50). Prenatal classes were held in 8 sessions. The quality of life of pregnant women was assessed before and after the intervention. Data was collected by a demographic questionnaire and a Quality of Life Short Form Survey (SF-36) which was completed by women before and after the intervention. After entering into the computer, the statistical data were analyzed using chi-square test and independent and paired t tests.

**Results:** The results of comparing the means of quality of life domains in the intervention group showed that mental health (P=0.40), vitality (P=0.11), and emotional role functioning (P=0.87) had higher health scores in the intervention group compared to before the intervention, although the difference was not statistically significant and only physical functioning had a significant difference (P=0.001). However, the comparison of the mean and standard deviation of quality of life domains before and after classes in the control group indicated lower scores for all domains after the intervention. Differences were significant in terms of physical functioning (P=0.007), physical role functioning (P=0.011), emotional role functioning (P=0.039), and pain (P=0.002).

**Conclusion:** The study showed that women who received prenatal education had better scores and mental health. Therefore, prenatal educations are necessary to improve health and quality of life of mothers.

**Keywords:** Quality of Life, Prenatal Education, Pregnant Women

## Introduction

Pregnancy is very important for a pregnant woman and her family. Stress caused by lack of knowledge and fear of the unknown during pregnancy, along with physiological and psychological changes lead to anxiety during this period [1]. Physical changes which are beyond women's control are the first changes that make women both physically and psychologically vulnerable [2]. In fact, these changes during pregnancy in physical, psychological, and social domains and generally in the quality of life of pregnant women occur at different pregnancy ages (gestational ages) [3, 4]. Quality of life covers different domains of health and individual's physical, mental and social well-being [5, 6]. Quality of life is one of the important health outcomes that require attention in the assessment of health interventions and prenatal care planning [6, 7]. Mothers' preparedness for pregnancy helps them to pass these stages with fewer complications and a lot more fun and also prepares them for an easier delivery with minimal medical interventions and enhanced quality of life [1, 8]. In addition to daily stresses during pregnancy, mothers have fears and concerns about their health, their infant's health and the unknown process of labor [9]. If pregnant women receive adequate information about the risks of cesarean section during prenatal classes, the number of elective caesarean sections will also reduce. Educating pregnant women about labor and its process can lead to their mental preparation to cope with the labor process [8, 10, 11].

Prenatal education is associated with vitality, happiness in the family, the ability to deal with new conditions, mother's and newborn's health, increased confidence, satisfaction with having children, active participation of family members in maintaining family's health and the ability to cope with problems and accepting life responsibilities [9 – 11]. Labor education helps pregnant women to obtain essential information about labor and ways to deal with pain. This preparation covers any experiences that a pregnant woman acquires through the labor process [12]. Knowledge about labor reduces fear in women and improves the feeling of control over labor. These classes cover neuromuscular exercise training, proper breathing, relaxation, concentration and correct positions during

labor in order to improve women's belief in their ability for self-control [1, 8]. Health education is the best hope for long-term improvement of the quality of life and population health. Health education is particularly important during pregnancy, which is an important and vulnerable period [13]. In conclusion, holding classes and preparing mothers for labor is one of the beneficial ways for supporting pregnant women. Since few studies have been conducted on the effect of labor preparation classes on the quality of life in pregnant women in Iran, the present study was conducted to determine the effects of prenatal classes on the quality of life of pregnant women.

## Materials and Methods

In this quasi-experimental study, 100 pregnant women presenting to Amini Hospital of Langerud in Iran were assigned to intervention and control groups by convenience sampling in 2013. Both groups had 50 subjects. The sample size of the study was determined as 35 for each group based on a study by Abbaszadeh and considering the lowest standard deviation (94.4) for public health domain of quality of life in that study, which was increased to 50 [3]. Among the pregnant women presenting to the hospital, 50 women that were willing to participate in classes were invited to enter the study, and 50 women in the control group only received routine pregnancy care. After obtaining written consent from mothers to participate in the study, questionnaires were completed by mothers in individual interviews under the supervision of prenatal class teacher at the 20th week of pregnancy. Inclusion criteria were gestational age of 18-20 weeks, no significant medical or obstetric problems to classify them as high-risk pregnancy, and literacy to complete the questionnaire.

The data collection tool was a questionnaire developed in two parts. Questionnaire1 included demographic and obstetric information, and questionnaire2 was health-related quality of life SF-36, which can measure the quality of life properly. This questionnaire has 36 items in eight domains of physical functioning, physical role functioning, bodily pain, general health perceptions, mental health, vitality, emotional

role functioning and social functioning. The total score of the eight domains ranges from zero to 100, where higher scores indicate better situations. Validity and reliability of the Persian version of the SF-36 as a standard questionnaire was approved by the Iranian Institute for Health Sciences Research [5, 14, 15]. Mothers in the intervention group voluntarily participated in prenatal classes and mothers in the control group received no training and only had the routine care (regular examination, routine laboratory tests, and ultrasound). The educational and advisory subjects of classes were presented by a midwife (research and education assistant). Theoretical education and neuromuscular exercises, concentration, proper breathing, pain reduction movements and positions, visiting the delivery room, introduction to the personnel and tools were presented in 8 sessions. The teachers had passed these courses before [1, 16].

The class schedule was as follows: weekly classes on week's 20-23, 23-27, 28-29, 30-31, 32-33, 34-35 (once a month) and weeks 36 and 37 of gestational age. Each session was held in 3 parts of 90 minutes. In some cases, the time was extended if necessary.

Part 1: Learning about anatomical and physiological changes, health, and nutrition during pregnancy, introduction to different stages of normal delivery, maternal and neonatal health, encouraging breastfeeding and family planning (theoretical education was presented with audiovisual aids).

Part 2: Consultation in form of questions and answers.

Part 3: Neuromuscular exercises, learning correct positions during labor and delivery, proper breathing during pregnancy, labor and delivery and relaxation. At the seventh session, mothers were introduced to the delivery room, labor room, delivery, tools, and personnel. At the end of the classes, questionnaire2 (SF-36) was completed at the care meeting in the last month of pregnancy for mothers in both intervention and control groups (10, 16). Statistical data was entered into the computer and analyzed with SPSS Version 17 using independent and paired t-test and Chi-square. Normality was determined by the Kolmogorov-Smirnov test.

### Results

A total number of 100 pregnant women participated in the study, 50 in the intervention group and 50 in the control group. The majority of subjects were in the 25-30-year-old age group (40%) in the intervention group and in the 20-25-year-old age group (52%) in the control group, had high school education (60% in both groups), were housewives (intervention=94%, control=90%), had a wanted pregnancy (intervention=90%, control=94%), were nulliparous (intervention=92%, control=88%), were in the second trimester (intervention=98%, control=100%), and had a favorable income (intervention=58%, control=52%).

**Table 1. Mean scores of quality of life domains before intervention in the two groups of intervention and control**

Domains	Group	Intervention		Control		Sig.*
		Mean	Standard Deviation	Mean	Standard Deviation	
General health		74.7	15.59	70.1	15.59	0.143
Physical functioning		66.1	19.62	64.5	19.27	0.474
Physical role functioning		48.5	36.9	43.5	32.65	0.475
Emotional role functioning		57.33	42.61	62.66	32.88	0.51
Social functioning		75.75	22.21	76.25	19.1	0.904
Bodily pain		73.77	22.53	77.55	18.16	0.358
Mental health		72.48	20.48	74.88	14.56	0.501
Vitality		60.4	19.89	63	15.61	0.469

\* Independent t-test

The two groups did not have a statistically significant difference in terms of the variables mentioned at the time of entering the study (chi-square test). The results showed no significant difference between the scores of quality of life domains before the classes in the two groups (independent t-test). The social function had the highest ( $75.75 \pm 22.21$ ) and physical role functioning had the lowest ( $48.5 \pm 36.9$ ) mean scores in the intervention group. The bodily pain had the highest ( $77.55 \pm 18.16$ ) and physical role functioning had the lowest ( $43.5 \pm 32.65$ ) mean scores in the control group.

The study also showed that health-related quality of life before classes scored lower in the control group compared to the intervention group in three dimensions of physical functioning (64.5 vs. 66.1), general health (70.1 vs. 74.7), and physical role functioning (43.5 vs. 48.5) (Table 1). There was no statistically significant difference between the scores of quality of life domains after classes in the intervention group and the control group (independent t-test). After classes, mental health had the highest ( $74.8 \pm 15.21$ ) and physical role functioning had the lowest ( $44.5 \pm 35.81$ ) mean scores in the intervention group. In addition, mental health had the highest ( $73.6 \pm 18.44$ ) and physical role functioning had the lowest ( $32 \pm 33.51$ ) mean scores in the control group. However, only physical functioning had higher health-related scores after the interventions in the control group compared to the intervention group (54.4 vs. 53.5), and other domains of quality of

life had lower scores compared to the intervention group, which were not statistically significant. However, general health in the intervention group was better than in the control group (73.5 vs. 68), but the difference was not statistically significant (Table 2).

A comparison of the mean and standard deviation of quality of life domains before and after classes in the intervention group showed no significant difference except for the physical functioning ( $P=0.001$ ) (paired t-test). A comparison of the means in the intervention group showed that physical functioning after the intervention had a decreasing trend. Also, a comparison between the mean scores of quality of life domains in the intervention group before and after intervention showed reduced scores of general health, physical role functioning, social functioning and bodily pain after the intervention. The domains of mental health, vitality and emotional role functioning had higher scores after the intervention, though the differences were not statistically significant (Table 3). However, the comparison of the mean and standard deviation of quality of life before and after classes in the control group indicated lower scores for all domains after evaluation. Differences were significant in terms of physical functioning ( $P=0.007$ ), physical role functioning ( $P=0.011$ ), emotional role functioning ( $P=0.039$ ), and bodily pain ( $P=0.002$ ) (paired t-test). The mean score of quality of life domains before and after in the control group are presented in Table 4.

**Table 2. Mean scores of quality of life domains after intervention in the two groups of intervention and control**

Domains	Group	Intervention		Control		Sig.*
		Mean	Standard Deviation	Mean	Standard Deviation	
General health		73.5	13.93	68	16.38	0.074
Physical functioning		53.5	9.19	54.4	19.71	0.77
Physical role functioning		44.5	35.81	32	33.51	0.654
Emotional role functioning		58	40.29	48.66	37.6	0.234
Social functioning		73.25	19.23	68	16.38	0.654
Bodily pain		71.55	21.54	66.66	23.75	0.284
Mental health		74.8	15.21	73.6	18.44	0.723
Vitality		64.6	16.89	58.8	17.15	0.103

\* Independent t-test

**Table 3. Mean scores of quality of life domains before and after intervention in the intervention group**

Domains	Group	Intervention		Control		Sig.*
		Mean	Standard Deviation	Mean	Standard Deviation	
General health		74.7	15.59	73.5	13.93	0.494
Physical functioning		66.1	19.62	53.5	9.19	0.001
Physical role functioning		48.5	36.91	44.5	35.81	0.272
Emotional role functioning		57.33	42.61	58	40.39	0.871
Social functioning		75.75	22.21	73.25	19.23	0.192
Bodily pain		73.77	22.53	71.55	21.54	0.374
Mental health		72.48	20.48	74.8	15.21	0.404
Vitality		60.4	19.89	64.4	16.89	0.111

\* Paired t-test

**Table 4. Mean scores of quality of life domains before and after intervention in the control group**

Domains	Group	Intervention		Control		Sig.*
		Mean	Standard Deviation	Mean	Standard Deviation	
General health		70.1	15.59	68	16.38	0.299
Physical functioning		64.5	19.27	54.4	19.71	0.007
Physical role functioning		43.5	32.65	32	33.51	0.011
Emotional role functioning		62.66	37.88	48.66	37.6	0.039
Social functioning		76.25	19.1	68	16.38	0.102
Bodily pain		77.55	18.16	66.66	23.75	0.002
Mental health		74.88	14.56	73.6	18.44	0.592
Vitality		63	15.61	58.8	17.15	0.083

\* Paired t-test

## Discussion

The results showed that before the intervention, physical role functioning had the lowest health scores in both groups and social functioning in the intervention group and bodily pain in the control group had the highest health scores. After the intervention, physical role functioning had the lowest and mental health had the highest health scores in both groups. The results indicated that mental health had better scores after prenatal classes in the intervention group compared to the control group, although the difference was not significant.

A study by Makvandi and kermani on the quality of life of pregnant women showed that vitality and physical role functioning had the lowest scores [7]. Abbaszadeh et al. studied the quality of life of pregnant women and reported that physical role functioning, vitality

and pain had the lowest scores [4]. Changes and discomforts during pregnancy such as nausea, vomiting, fatigue and pain can significantly impact daily activities of pregnant women, which reduce their quality of life and ability to do their daily routines [3, 17]. The findings of Zahedi et al. were similar to Abbaszadeh et al. [18].

A comparison of domains before and after intervention showed significant differences in physical functioning, physical role functioning, emotional role functioning and pain. A comparison of the means showed decreased health-related scores and performances in all dimensions compared to before the intervention. The results of this study indicated that although domains of general health, physical functioning, physical role functioning, social functioning and pain had a decreasing trend in health-related scores

in both groups after the intervention, the intervention group had higher health-related scores in the domains of mental health, vitality, and emotional role functioning after the interventions, however, differences were not significant. Therefore, the present study showed that the psychological domains improved after classes. Akbarzadeh et al. suggested that support provided for mothers during pregnancy to help them cope with their feelings were useful and had an important contribution to improving their emotional state and compatibility with the maternal role. Prenatal classes reduced the amount of mental disorders and depression [19].

The decreased (scores) of physical functioning, physical role functioning and pain in both groups can be attributed to increased physical problems and pain caused by physiological changes after pregnancy, pregnancy progress and perhaps lack of education to improve the physical condition, especially in prenatal class in the intervention group. However, they had better psychological conditions possibly due to relaxation exercises, and close contact with the trainer. Abbaszadeh et al. also showed that the mean score of quality of life, especially the physical and pain domains reduced after pregnancy progress [3, 4]. Improving mental health and emotional problems following prenatal classes can be attributed to peace and reduced stress due to proper training. The emotional support from personnel and midwives and mothers' familiarity with the maternity ward and hospital environment during the training course will play an important role in improving the quality of life. However, more rigorous training and increasing the sample size can yield better results. Jakubiec et al. also showed that classes can improve mental health by reducing psychological problems during pregnancy. It can even improve the physical and social domains of quality of life [20]. Shishegar et al. also noted the role of midwives and health workers in improving social support and reducing psychological stress and its consequences and enhancing the quality of life [21]. Karami and Madani also indicated the role of mental health in improving the quality of life and the importance of mental health and psychological support of mothers [22], which is consistent with the present study.

In general, although the results of this study and other studies suggest pregnant women's

low quality of life, the low scores of physical, pain, and physical role functioning, and even mental health domains can be improved by proper training during prenatal care and childbirth preparation classes, introduction to staff and the hospital environment and the maternity ward. Experience of prenatal courses influence the lives of pregnant women. The positive effects of relaxation in these classes make the mothers feel better about them and have a better quality of life. Finally, the delivery process is completely physiological and needs physical and psychological support for mothers in order not to be impaired.

A limitation of the present study was the non-random selection of mothers, as only those who volunteered were enrolled in the intervention group. It is recommended that further studies with larger sample sizes be conducted to achieve better and generalizable results.

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