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# THE EFFECT OF RECEIVING ANTENATAL CARE ON QUALITY OF LIFE AND DELIVERY MODE PREFERENCE OF PREGNANT WOMEN WHO ATTENDED TO KAYSERI MATERNITY HOSPITAL

**[*1]Emine AKSÜT AKÇAY, [2] İskender GÜN**

[1]Çukurova University, Adana, Turkey,

ORCID: 0000-0002-2056-4597

[2]Erciyes University, Faculty of Medicine, Department of Public Health, Kayseri, Turkey,

ORCID: 0000-0001-7333-662X

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*Corresponding author: bau_sirinim@hotmail.com

**Abstract**

This study was conducted to identify antenatal care receiving status among pregnant women and the effect of receiving antenatal care on the birth mode preference and quality of life. The sample of this descriptive study consists of 2100 pregnant women who were attended and hospitalized in Kayseri Education and Research Hospital Maternity Clinic. The data were collected by the Pregnancy Evaluation Questionnaire, which determines pregnant women's socio-demographic attributes and WHOOQL-BREF quality of life scale. The mean age of pregnant women who participated in the study was 26.3±5.6 years and a majority of them (61.6%) were between 19-30 years. A total of 63% of the pregnant women received antenatal care from a state hospital, 25.2% from a family doctor and 2.9% from a university hospital. A total of 58.5% of the pregnant women decided to give birth by normal delivery, 35% through cesarean section, and 6.5% had not decided yet. Furthermore, 97.0% of the pregnant women started receiving ANC in the first trimester and 91.6% stated that they received ANC once a month. The mean quality of life scores of pregnant women who received ANC in the first trimester of their pregnancy is higher in all domains. The mean quality of life scores of pregnant women participating in the study increased as the frequency of ANC visits increase. It is concluded that considering the factors affecting the quality of life of pregnant women during the planning and delivery of

antenatal care services can contribute to maternal and infant health.

**Key Words:** Prenatal care, Birth choice, Quality of life, Pregnancy.

**Özet**

Bu çalışma gebelerin doğum öncesi bakım alma durumlarının tespit edilmesi, bakım alama durumlarının doğum tercihi ve yaşam kalitesi üzerine etkisinin araştırılması amacıyla yapılmıştır. Tanımlayıcı tipteki bu araştırmanın örneklemini Kayseri Eğitim Araştırma Hastanesi Doğum Kliniği'ne başvuran veya yatmakta olan 2125 gebe kadın oluşturmuştur. Veriler 2011 Eylül 2012 Mart tarihleri arasında toplanmıştır. Araştırmanın verileri gebelerin sosyo-demografik özelliklerin sorgulandığı gebe değerlendirme anketi ve WHOOQL_BREF yaşam kalitesi ölçeği ile toplanmıştır. Araştırmada 2100 kadının anket ve ölçek formu analiz edilmiştir. Araştırmaya katılan gebelerin yaş ortalamasının 26.3±5.6 yıl ve çoğunun %61.6 ile 19-30 yaş grubunda olduğu belirlenmiştir. Bu çalışmada gebelerin %99.6'sı doğum öncesi bakım almıştır. Doğum öncesi bakım hizmeti alan gebelerin %63'ü devlet hastanesinden, %32.4'ü özel hastaneden %25.2'si aile hekiminden, %2.9'u ise üniversite hastanesinden almıştır. Gebelerin %58.5'i normal doğum ve %35'inin sezaryen ile doğum yapmayı planladığı belirlenmiştir. Doğum öncesi bakım hizmetlerinin planlanması ve sunumunda gebelerin yaşam kalitesini etkileyen faktörlerinin göz önünde bulundurulması ile anne ve bebek sağlığının gelişimine katkı oluşturulabileceği sonucuna varılmıştır.

**Anahtar Kelimeler:** Doğum öncesi bakım, Doğum tercihi, Yaşam kalitesi, Gebelik.

## 1. Introduction

Pregnancy is an important period to promote health and prepare women and their families psychologically and emotionally for parenthood. Antenatal Care (ANC) refers to the care given to pregnant women by healthcare professionals to ensure good health conditions for both mother and baby during pregnancy (Tekelap et al., 2019). AC is a safe motherhood initiative that aims to improve health and quality of life during pregnancy and the early postpartum period. High quality antenatal care increases the survival statistic of both the mother and fetus, as well as improves their health. Also, ANC provides women with the opportunity to communicate with healthcare professionals and thus improve their quality of life (TNSA, 2010; Arunda et al., 2017).

In recent years, the World Health Organization (WHO) has published a new guideline aimed at reducing the risk of stillbirth and pregnancy complications as well as improving the quality of antenatal care for a positive pregnancy experience. This guide, which focuses on a positive pregnancy experience, aims at not only ensuring a healthy pregnancy for both mother and newborn but also a positive birth and motherhood experience (WHO, 2016). ANC services, which are developed to reduce risks in pregnancy and its impact, is actually a preventive health service important for mother and child health (Taşkın, 2020). It was reported that mothers who never received ANC carry more risks related to childbirth, more likely to abort, and the probability of infant death during the perinatal period is higher (Güler & Akın, 2015). Within the scope of ANC services, it is important for pregnant women to be examined at least once in the first trimester in order to have a healthy and safe pregnancy and to determine possible risk factors. Furthermore, monitoring the mother once a week during the last month of pregnancy is necessary to identify possible risks and complications for the fetus and to take precautions (Güler & Akın, 2015). The Turkish Ministry of Health (2018) stated that all pregnant women should be followed up at least four times during their pregnancy as antenatal care. The 1st follow-up is recommended before the 4th month (16th week), the 2nd follow-up is at the 6th month (24th week), the 3rd follow-up is at the 8th month (32nd week), and the 4th follow-up is at the 9th month (36th week). The number of follow-ups and frequency may change for pregnancies with risk, and in such cases, they should be follow-up more frequently (Turkish Ministry of Health, 2018). According to 2018 Turkey Demographic and Health Survey (TNSA) data, 96% of women received ANC at least once in their last birth in the last five years. A total of 92% of pregnant women received antenatal care services. Also, it was determined that 81% of women took iron supplements during pregnancy and had a tetanus vaccination. A comparison of TNSA 2013 and TNSA 2018 data showed that the number of women who received ANC has increased. During this 5-year period, the proportion of women who received antenatal care from health personnel in their last birth increased from 97% to 99% (TNSA, 2018). Pregnancy is an essential element of life and an important life experience for both woman and her family. During pregnancy, many changes occur in social relationships and the roles of family members. Considering the above-mentioned information and reports, it is thought that receiving antenatal care might affect the delivery mode preference and quality of life. Thus, the effect of receiving antenatal care on the delivery mode preference and quality of life of pregnant women can be determined and potential risks can be determined in advance.

Quality of life does not only include family, work life, and socioeconomic conditions, but also includes one's goals, expectations, and hopes, that is, the perception of life satisfaction and well-being. Physical, social, and psychological changes occurring during pregnancy will also affect the health-related quality of life, which represents the relationship with life events (Scott, 1997). Changes occurring during pregnancy, adaptation, and pregnancy complications directly affect the quality of life, and if a woman cannot adapt sufficiently, her quality of life will be adversely affected. Therefore, normal changes and underlying causes of pregnancy problems should be determined accurately, and the woman should be supported and counseled to overcome these problems. Health professionals in this field should consider the woman as a whole and provide the necessary antenatal care in order to complete the pregnancy with a healthy mother and child (Yıkar & Nazik, 2018).

## 2. Material and Methods

### *2.1. Research design*

A cross-sectional descriptive study was designed and conducted with pregnant women who attended and were hospitalized in Kayseri Education and Research Hospital Maternity Clinic.

### *2.2. Population and sample*

The sample of the study consists of pregnant women who attended and were hospitalized in Kayseri Education and Research Hospital Maternity Clinic between September 1 and December 31, 2011. According to the data received from the health institution where the research was conducted, the number of pregnant women who were hospitalized in 2010 was 2600. Considering that the rate of those who received prenatal care was found to be 25% in previous studies (Elveren, 2008; Özçelik, 2010), it was calculated that the sample should consist of 2125 people by taking into account the 95% confidence interval and 2% tolerance value. However, after excluding the surveys with missing data and those who want to stop their participation in research, a total of 2100 participants were included in the study. The pregnant women who voluntarily accepted to participate in the study were aged 18 and over and had not been diagnosed with psychiatric disease. The data were collected via face-to-face surveys. Personal identity information of the pregnant women was not used in the study.

*2.3. Ethical approval*

Institutional permission for research (dated 04/11/2011 and numbered 758) was obtained from Kayseri Provincial Health Directorate and ethical approval (dated 02.08.2011 and numbered 445) from Erciyes University Faculty of Medicine Ethics Committee. Also, the potential participants are informed about the nature of the research and written consent was obtained. The study was carried out in accordance with the principles of the Declaration of Helsinki.

*2.4. Data collection tools*

Pregnancy Evaluation Questionnaire: During the preparation of the questionnaire, experts' opinions were received, previous studies and theses were examined. As a pilot study, the first version of the questionnaire was applied to 20 pregnant women who were hospitalized in Kayseri Education and Research Hospital Maternity Clinic. Then, the required revisions were implemented, and the finalized questionnaires were applied to the sample. The questionnaire consists of 43 questions regarding women's sociodemographic characteristics, pregnancy histories, marital and spouse characteristics, antenatal care receiving status, preferences of birth mode, and characteristics affecting these items.

WHOQOL-BREF Quality of Life Assessment: There are 2 versions of the WHOQOL scale, WHOQOL-100 (long version) and WHOQOL-BREF (short version). The original version of the WHOQOL-100 consists of 100 questions. This survey includes 6 domains. Each domain contains a different number of facets, and there are 25 facets in total including a general facet. Each facet consists of 4 questions. The items are scored with a 5-point Likert (ordinal) rating. The survey does not have a total score. Each facet and domain are scored out of 20 or 100 points, respectively. Higher scores indicate better quality of life. The Turkish version of the survey (WHOQOL-100 TR) includes 3 additional questions specific to Turkey under "Social Pressure" facet (Başaran et al., 2005; Özyılkan, 2008). On the other hand, WHOQOL-BREF consists of 26 questions: 2 from the general facet and 1 question from each remaining 24 facets of the original survey (WHOQOL-100).

Contrary to the long version, WHOQOL-BREF includes 4 domains and does not have separate facets. This survey does not have a total score as well. Each facet and domain is scored out of 20 or 100 points, respectively. The selection of rating mode depends on the researcher's decision. However, scoring over 20 points is a more common practice in Turkey.

If the Turkish version with 27 questions (Question 27 is a national question) is used, the

Environmental domain score is called Environmental TR. In this case, Environmental TR scores is used instead of Environmental domain scores. WHOQOL-BREF consists of following domains: Physical Health domain (Questions 3,4,10,15,16,17,18), Psychological Health domain (Questions 5,6,7,11,19,26), Social Relationships domain (Questions 20,21,22), and finally, Environmental Health domain (Questions 8,9,12,13,14,23,24,25,27). WHOQOL-BREF consists of 26 questions measuring the perceived quality of life. With a national question added during validity studies for Turkish language, the WHOQOL-Bref-TR version consists of 27 questions (Fidaner, 1997; Başaran et al., 2005; Özyılkan, 2008). The participants were asked to answer the questions considering the last 15 days. Physical health, psychological health, social relationships, and environmental health scores were calculated using the answers to the questions except the first two general questions.

The questions according to the domains were as follows: Physical health domain; activities of daily living, energy, fatigue, dependence on medicine and medical aids, mobility, pain and discomfort, sleep, rest and work capacity. Psychological health domain; bodily image and appearance, negative feeling, self-esteem, positive feelings, spirituality, religion and personal beliefs, thinking, learning, memory, and concentration. Social relationships domain; personal relationships with others, social support and sexual activity. Environmental domain; financial resources, physical safety and security, health and social care: accessibility and quality, home environment, opportunities for acquiring new information and skills, participation in and opportunities for recreation and leisure activities, physical environment (pollution, noise, traffic, climate) and transport. WHOQOL-BREF is scored between 0-20 points and higher points on physical health, psychological health, social relationships, and national health indicate higher quality of life (Kotelhuc, 1994). Scoring of WHOQOL-BREF TR quality of life scale: The information and permission to use the scale were obtained from Celal Bayar University, Faculty of Medicine, Head of Public Health Department Prof. Dr. Erhan Eser. The WHOQOL-BREF that was used in the current study is a 5-point Likert-type scale with 26 items. The scale measures 4 main domains of quality of life, namely, physical, psychological, social, and environmental. The scores that can be obtained from these domains are between 0-20 or 0-100, and higher scores indicate better quality of life. There is no cutoff point for scores. The scale measures one's satisfaction with life, being affected by illness, as well as positive and negative changes in quality of life (Sunal & Demiryay, 2006).

The answers to the questions of WHOQOL BREF-TR were evaluated according to the

instructions of the scale and four domains of quality of life (physical, psychological, social, environmental) were calculated over 100 points. Environmental TR score for the national question in the WHOQOL Bref-TR was also calculated.

*2.5. Analysis of the data*

SPSS software package version 20.0 was used to analyze the data. Quantitative data are presented as mean and standard deviation. ANOVA and independent samples T-test were performed. The $p<0.05$ level was considered statistically significant. The obtained data were evaluated on a computer and antenatal care receiving status and delivery mode preference of the pregnant women were compared with quality-of-life scores.

## 3. Results and Discussion

According to the sociodemographic characteristics of the participants given in Table 1, the mean age of women is 26.3±5.6 and of these women, 37.2% (n=782) primary school graduate, 89.3% (n=1875) housewife, 60.1% (n=1263) has health insurance provided by social security institution (SSI), and 58.0% (n=1217) has a monthly income between 601-1200 TL. Furthermore, it was determined that 60.0% (n=1261) of pregnant women has a 'moderate' monthly income, 65.5% (n=1376) had been married between 19-30 years, 50.1% (n=1052) was married for 3-10 years. Significant differences were found between all variables given in Table 1 and WHOQOL-BREF TR sub-scales ($p<0.05$) (Table 1).

**Table 1.** Comparison of pregnant women's quality-of-life mean scores with sociodemographic characteristics (n=2100)

| **Characteristics** | **n** | **%** | **Physical** | **Psychological** | **Social** | **Environmental** |
|---|---|---|---|---|---|---|
| | | | **X±SS** | **X±SS** | **X±SS** | **X±SS** |
| **Mean age** | 26.3±5.6 (min:15-max:44) | | | | | |
| **Education Status** | | | | | | |
| Illiterate | 80 | 3.8 | 37.2±16.1 | 37.0±15.7 | 36.1±17.4 | 36.1±15.3 |
| Primary school | 782 | 37.2 | 45.0±14.6 | 45.6±14.8 | 44.8±15.8 | 44.9±14.2 |
| Secondary | 564 | 26.9 | 48.5±13.0 | 48.4±13.5 | 48.1±15.3 | 48.1±13.5 |
| High school | 493 | 24.5 | 53.5±16.0 | 55.0±15.9 | 54.6±7.7 | 54.4±15.8 |
| Collage | 181 | 8.6 | 72.2±21.6 | 72.3±20.6 | 73.7±22.5 | 72.6±20.6 |
| Test value-p* | | | ***125.57-0.000*** | ***138.99-0.000*** | ***131.07-0.000*** | ***152.56-0.000*** |

| | | | | | | |
|---|---|---|---|---|---|---|
| **Profession** | | | | | | |
| Housewife | 1875 | 89.3 | 54.3±14.8 | 47.9±14.9 | 47.2±26.4 | 47.3±14.7 |
| Public Officer | 178 | 8.5 | 74.0±20.0 | 74.6±18.8 | 76.7±20.1 | 75.4±18.5 |
| Worker | 12 | 0.6 | 58.0±15.1 | 62.8±17.1 | 63.8±18.5 | 60.1±13.9 |
| Other (secretary, accountant, etc.) | 35 | 1.7 | 62.9±21.0 | 67.7±21.5 | 67.1±22.5 | 65.4±20.8 |
| Test value-p* | | | ***171.23-0.000*** | ***179.04-0.000*** | ***179.86-0.000*** | ***200.58-0.000*** |
| **Health Insurance** | | | | | | |
| Green card | 326 | 15.5 | 42.3±15.4 | 41.8±15.3 | 41.3±17.0 | 41.2±14.9 |
| Social security institution | 1263 | 60.1 | 49.7±15.0 | 50.7±15.1 | 50.1±16.5 | 50.1±14.8 |
| Self-employed insurance | 203 | 9.7 | 47.3±15.2 | 47.2±15.0 | 47.0±16.4 | 46.9±14.6 |
| State retirement fund | 212 | 10.1 | 68.9±20.5 | 70.0±19.6 | 71.7±21.4 | 70.5±19.6 |
| None | 96 | 4,6 | 42.2±15.4 | 42.4±15.2 | 40.9±16.8 | 41.4±15.3 |
| Test value-p* | | | ***103.08-0.000*** | ***115.17-0.000*** | ***113.70-0.000*** | ***130.05-0.000*** |
| **Monthly income**** | | | | | | |
| 0-600 TL | 404 | 19.2 | 41.3±15.8 | 41.1±15.4 | 40.5±17.7 | 40.4±15.3 |
| 601-1200 TL | 1217 | 58.0 | 47.5±13.5 | 48.3±13.7 | 47.5±14.9 | 47.6±13.1 |
| 1201 TL and above | 479 | 22.8 | 63.2±19.2 | 44.2±18.9 | 65.1±20.4 | 64.4±19.0 |
| Test value-p* | | | ***253.77-0.000*** | ***276.96-0.000*** | ***269.70-0.000*** | ***316.10-0.000*** |
| **Economic status** | | | | | | |
| Poor | 316 | 15.0 | 40.0±15.1 | 39.8±14.8 | 39.0±16.9 | 39.1±14.5 |
| Moderate | 1261 | 60.0 | 47.2±13.8 | 48.0±14.0 | 47.3±15.3 | 47.3±13.5 |
| Good | 523 | 25.0 | 62.4±18.9 | 63.2±18.7 | 63.9±20.3 | 63.3±18.9 |
| Test value-p* | | | ***127.82-0.000*** | ***267.99-0.000*** | ***259.83-0.000*** | ***300.57-0.000*** |
| **Age of Marriage** | | | | | | |
| 18 years and below | 682 | 32.5 | 46.4±14.7 | 46.7±14.7 | 46.1±16.0 | 46.1±14.4 |
| 19-30 years | 1376 | 65.5 | 51.6±18.0 | 52.5±18.0 | 52.3±19.8 | 52.1±18.0 |
| 31 years and above | 42 | 2.0 | 49.4±20.2 | 48.8±19.7 | 46.8±20.7 | 48.4±20.3 |
| Test value-p* | | | ***21.19-0.000*** | ***26.92-0.000*** | ***25.79-0.000*** | ***28.29-0.000*** |
| **Marriage duration** | | | | | | |
| 2 years and below | 687 | 32.7 | 50.7±16.8 | 51.3±16.5 | 50.7±18.0 | 50.9±16.4 |
| 3-10 years | 105 | 50.1 | 50.2±17.6 | 51.0±17.7 | 50.7±19.5 | 50.6±17.8 |
| 11 years and above | 1308 | 17.2 | 47.3±16.6 | 47.8±17.1 | 47.6±18.7 | 47.0±16.3 |
| Test value-p* | | | ***4.886-0.008*** | ***5.391-0.005*** | ***4.043-0.018*** | ***7.09-0.000*** |
| **Total** | 2100 | 100.0 | | | | |

*One Way ANOVA test was conducted, ** minimum wage in 2011 is 658.950 TL according to official data.

It was determined that 33.0% (n=694) of the husbands were primary school graduates, 44.2% (n=928) of them were unemployed, 83.1% (n=1745) had no kinship with their wives, 99.8%

(n=2096) had no disabled child, 82.0% (n=1721) of mothers was willing for pregnancy, 87.8% (n=1844) of husbands was willing for pregnancy, 96.3% (n=2022) of them used artificial insemination methods (Table 2). In addition, it was found that there are significant differences between all variables given in Table 2 and sub-scales of the WHOQOL-BREF TR quality of life scale ($p<0.05$).

**Table 2.** Comparison of the pregnant women's quality of life mean scores with their sociodemographic and pregnancy-related characteristics (n=2100)

| **Characteristics** | **n** | **%** | **Physical** | **Psychological** | **Social** | **Environmental** |
|---|---|---|---|---|---|---|
| | | | **X±SS** | **X±SS** | **X±SS** | **X±SS** |
| **Husband's Education status** | | | | | | |
| Illiterate | 43 | 2.0 | 34.8±13.3 | 34.3±12.2 | 33.1±13.0 | 34.1±12.4 |
| Primary school | 694 | 33.0 | 44.5±14.8 | 45.0±15.0 | 44.4±16.4 | 44.3±14.5 |
| Secondary | 469 | 22.3 | 48.3±13.9 | 48.3±13.5 | 48.1±15.9 | 48.1±13.7 |
| High school | 621 | 29.6 | 51.5±15.2 | 52.5±16.3 | 51.9±17.6 | 52.0±16.1 |
| Collage | 273 | 13.0 | 64.9±20.6 | 66.4±19.8 | 67.1±21.5 | 66.1±1.9 |
| Test value-p* | | | ***93.43-0.000*** | ***106.195-0.000*** | ***97.166-0.000*** | ***110.849-0.000*** |
| **Husband's Profession** | | | | | | |
| Unemployed | 928 | 44.2 | 46.5±14.8 | 47.1±15.2 | 46.5±16.6 | 46.6±14.9 |
| Self-employed | 205 | 9.7 | 51.5±19.4 | 51.7±19.5 | 51.8±21.1 | 51.5±19.7 |
| Worker | 689 | 32.8 | 47.7±14.4 | 48.3±14.0 | 47.6±15.5 | 47.7±13.6 |
| Public Officer | 239 | 11.4 | 65.4±20.7 | 66.4±20.2 | 67.5±22.1 | 66.3±29.4 |
| Retired | 39 | 1.9 | 66.2±20.3 | 68.2±20.8 | 68.3±21.9 | 66.8±21.1 |
| Test value-p* | | | ***63.67-0.000*** | ***66.84-0.000*** | ***65.86-0.000*** | ***70.35-0.000*** |
| **Kinship with Husband** | | | | | | |
| Yes | 355 | 16.9 | 45.0±0.9 | 45.4±0.9 | 45.0±0.9 | 45.0±0.8 |
| No | 1745 | 83.1 | 50.9±0.5 | 51.6±0.5 | 51.2±0.4 | 51.1±0.4 |
| Test value-p** | | | ***6.02-0.000*** | ***6.26-0.000*** | ***5.83-0.000*** | ***6.27-0.000*** |
| **Having a Disabled Child** | | | | | | |
| Yes | 4 | 0.2 | 25.0±0.0 | 27.0±4.1 | 25.0±0.0 | 26.3±2.7 |
| No | 2096 | 99.8 | 49.9±17.2 | 50.6±17.3 | 50.2±18.9 | 50.1±17.1 |
| Test value-p** | | | ***6.37-0.040*** | ***11.12-0.010*** | ***6.17-0.000*** | ***16.51-0.000*** |
| **Mother's Willingness to Pregnancy** | | | | | | |
| Willing | 1721 | 82.0 | 50.8±17.3 | 51.6±17.3 | 51.3±18.9 | 51.1±17.2 |
| Not willing | 379 | 18.0 | 45.7±16.2 | 45.9±16.2 | 44.9±18.0 | 45.1±15.9 |
| Test value-p** | | | ***-5.44-0.000*** | ***-5.80-0.000*** | ***-6.02-0.000*** | ***-6.26-0.000*** |
| **Husband's Willingness to Pregnancy** | | | | | | |
| Willing | 1844 | 87.8 | 50.9±17.2 | 51.6±17.2 | 51.3±18.9 | 51.1±17.1 |
| Not willing | 256 | 12.2 | 42.6±15.5 | 42.8±15.5 | 41.9±16.4 | 42.2±15.3 |
| Test value-p** | | | ***-7.89-0.000*** | ***-8.38-0.000*** | ***-8.42-0.000*** | ***-8.56-0.000*** |

| | | | | | | |
|---|---|---|---|---|---|---|
| **Using artificial insemination** | | | | | | |
| Yes | 78 | 3.7 | 56.9±18.5 | 57.1±17.1 | 56.1±18.8 | 57.3±17.4 |
| No | 2022 | 96.3 | 49.6±17.1 | 50.3±17.2 | 49.9±18.8 | 49.8±17.1 |
| Test value-p** | | | ***-3.43-0.010*** | ***-3.45-0.010*** | ***-2.85-0.040*** | ***-3.74-0.000*** |
| **Total** | 2100 | 100.0 | | | | |

*One Way ANOVA was performed, **Independent Samples t Test was performed.

It was found that 99.6% (n=2092) of pregnant women had received antenatal care, 65.9% (n=1383) of them were not hospitalized during pregnancy, 75.6% (n=1588) of them got their first pregnancy between 19-30 years, 91.6% (n=1924) of them had received antenatal care once a month, 33.7% (n=708) of them had applied to a health institution when faced with a health problem, 50.0% (n=1050) of them experienced decreased sleep order (Table 3).

**Table 3.** Comparison of pregnant women's quality-of-life mean scores with pregnancy-related characteristics (n=2100)

| **Characteristics** | **n** | **%** | **Physical** | **Psychological** | **Social** | **Environmental** |
|---|---|---|---|---|---|---|
| | | | **X±SS** | **X±SS** | **X±SS** | **X±SS** |
| **Having Received Antenatal Care** | | | | | | |
| Received | 2092 | 99.6 | 49.9±17.2 | 50.5±17.3 | 50.2±19.8 | 50.0±17.2 |
| Not Received | 8 | 0.4 | 54.4±18.3 | 52.6±15.2 | 53.1±16.0 | 61.3±13.9 |
| Test value-p* | | | 0.74-0.673 | 0.33-0.787 | 0.43-0.808 | 0.21-0.567 |
| **Hospitalized During Pregnancy** | | | | | | |
| Yes | 717 | 34.1 | 48.0±16.1 | 48.7±16.1 | 48.4±17.6 | 48.2±15.9 |
| No | 1383 | 65.9 | 50.8±17.7 | 51.5±17.8 | 51.1±19.5 | 51.0±17.7 |
| Test value-p* | | | ***3.54-0.000*** | ***3.56-0.000*** | ***3.16-0.002*** | ***3.47-0.000*** |
| **Age of First Pregnancy** | | | | | | |
| 18 years and below | 448 | 21.3 | 45.4±14.5 | 45.6±14.2 | 45.0±15.9 | 45.1±14.1 |
| 19-30 years | 1588 | 75.6 | 51.0±17.4 | 51.8±17.6 | 51.5±19.2 | 51.3±17.4 |
| 31 years and above | 64 | 3.1 | 54.7±22.3 | 54.4±22.1 | 54.4±23.6 | 54.4±22.5 |
| Test value-p* | | | ***21.10-0.000*** | ***24.40-0.000*** | ***22.40-0.000*** | ***25.57-0.000*** |
| **Antenatal Care Frequency** | | | | | | |
| Once a week | 1 | 0.1 | 75.0±0.0 | 75.0±0.0 | 75.0±0.0 | 75.0±0.0 |
| Once every 2 weeks | 86 | 4.1 | 50.2±15.2 | 50.8±16.6 | 51.1±19.3 | 50.7±16.7 |
| Once a month | 1924 | 91.6 | 50.1±17.3 | 50.7±17.3 | 50.3±18.8 | 50.2±17.2 |
| Once every two months | 77 | 3.7 | 45.9±10.0 | 46.5±16.2 | 46.7±20.7 | 46.0±16.2 |
| Lower than once every two months | 12 | 0.6 | 37.7±12.0 | 41.3±15.5 | 41.6±16.2 | 40.2±13.8 |
| Test value-p* | | | ***3.12-0.014*** | ***2.48-0.042*** | 1.76-0.133 | ***2.65-0.032*** |
| **Coping With Health Problems** | | | | | | |
| I didn't care | 669 | 31.9 | 45.6±15.8 | 45.7±15.4 | 45.2±16.5 | 45.5±15.6 |

| | | | | | | |
|---|---|---|---|---|---|---|
| I waited to problem for go away on its own | 657 | 31.3 | 48.1±15.5 | 48.3±15.9 | 47.9±17.1 | 47.7±15.3 |
| I got help from my relatives | 66 | 3.1 | 47.7±14.2 | 50.5±17.0 | 49.4±19.5 | 49.4±16.8 |
| I applied to a health institution | 708 | 33.7 | 55.8±18.6 | 57.2±18.2 | 57.0±20.5 | 56.6±18.3 |
| Test value-p* | | | ***47.44-0.000*** | ***60.01-0.000*** | ***53.02-0.000*** | ***58.51-0.000*** |
| **Sleep order** | | | | | | |
| Improved | 378 | 18.0 | 51.7±17.2 | 52.5±17.5 | 52.6±19.7 | 52.5±18.2 |
| Decreased | 1050 | 50.0 | 49.6±17.2 | 50.2±17.3 | 49.9±18.7 | 49.6±16.9 |
| Became irregular | 672 | 32.0 | 49.3±17.1 | 49.9±17.1 | 49.2±18.6 | 49.3±16.8 |
| Test value-p* | | | 2.06-0.074 | ***3.07-0.046*** | ***3.99-0.019*** | ***4.70-0.009*** |
| **Total** | 2100 | 100.0 | | | | |

*One Way ANOVA was performed, **Independent Samples t test was performed

A comparison of the variables given in Table 3 and the sub-scales of the WHOQOL-BREF TR quality of life scale showed that there were no significant differences between having received ANC and all sub-scales of the quality-of-life scale. Also, no significant differences were observed between the frequency of ANC and the social relationships domain (p>0.05). We found statistically significant differences between hospitalized during pregnancy, age of first pregnancy, coping with health problems, and sleep order variables and all sub-scales of the quality-of-life scale (p<0.05).

It was determined that %58.5 (n=1229) of the pregnant women decided on normal delivery, 41.6% (n=818) of them decided ton the birth mode themselves, 32.4% (n=681) of them received ANC from a private hospital (Table 4). Moreover, statistically significant differences were observed between the variables given in Table 4 and the sub-scales of the quality-of-life scale (p<0.05).

**Table 4.** Comparison of pregnant women's quality of life mean scores with their sociodemographic and pregnancy-related characteristics (n=2100)

| **Characteristics** | **n** | **%** | **Physical** | **Psychological** | **Social** | **Environmental** |
|---|---|---|---|---|---|---|
| | | | **X±SS** | **X±SS** | **X±SS** | **X±SS** |
| **Delivery Mode Preference** | | | | | | |
| Normal delivery | 1229 | 58.5 | 49.5±16.9 | 50.1±16.8 | 49.6±18.5 | 49.6±16.6 |
| Cesarean | 734 | 35.0 | 49.8±17.4 | 50.4±17.8 | 50.2±19.1 | 50.0±17.7 |
| Not decided yet | 137 | 6.5 | 49.7±16.7 | 50.3±16.9 | 49.4±18.2 | 49.3±17.5 |
| Test value-p* | | | ***4.26-0.014*** | ***5.93-0.003*** | ***4.91-0.007*** | ***5.02-0.007*** |
| **People Effective in Birth Mode** | | | | | | |
| Only herself | 818 | 41.6 | 46.6±15.4 | 47.1±15.2 | 46.5±16.8 | 46.8±15.4 |
| Only her husband | 3 | 0.01 | 32.1±07.1 | 27.7±04.8 | 25.0±00.0 | 26.8±03.2 |
| Herself and her husband | 287 | 14.6 | 54.3±17.6 | 54.1±17.3 | 54.0±19.0 | 53.3±16.6 |

| | | | | | | |
|---|---|---|---|---|---|---|
| Family elders | 1 | 0.05 | 50.0±00.0 | 50.0±00.0 | 50.0±00.0 | 50.0±00.0 |
| Health personnel providing antenatal care | 489 | 24.9 | 51.3±17.6 | 52.1±18.0 | 52.3±19.4 | 51.6±17.7 |
| Gynecologist's advice | 365 | 18.5 | 50.4±18.3 | 51.6±18.9 | 50.9±20.1 | 51.2±18.9 |
| Test value-p* | | | ***6.02-0.000*** | ***11.39-0.000*** | ***10.74-0.000*** | ***10.13-0.000*** |
| **Health Institutions Where Pregnant Women Get Antenatal Care (Private Hospitals)** | | | | | | |
| Yes | 681 | 32.4 | 53.9±18.2 | 54.8±18.3 | 54.6±19.8 | 54.5±18.3 |
| No | 1419 | 67.6 | 48.0±16.4 | 48.5±16.4 | 48.1±18.0 | 47.9±16.1 |
| Test value/p** | | | ***-7.17-0.000*** | ***-7.55-0.000*** | ***-7.25-0.000*** | ***-8.02-0.000*** |
| **Total** | 2100 | 100.0 | | | | |

*One Way ANOVA was performed, **Independent Samples t test was performed.

## 4. Conclusion

It is known that most pregnancy-related deaths can be prevented with sufficient antenatal care. However, pregnancy-related deaths and fetal deaths can be prevented by family planning services, pregnancy follow-ups, receiving adequate ANC services, giving birth in health institutions under the supervision of trained personnel, reducing unnecessary medical interventions, and elective cesarean sections (Sunal & Demiryay, 2006). Antenatal care provided by specialist health professionals is important in terms of monitoring pregnancies, early detection of potential problems, and early intervention before problem causes more serious complications. Almost all the women (96%) in Turkey received antenatal care from specialist health professionals in their last birth in the last five years (TNSA, 2018).

It was determined that most of the pregnant women who participated in this study (61.6%) were 19-30 years old with a mean age of 26.3±5.6 years. Similar mean age values were reported for pregnant women by other studies conducted in Turkey such as 27.42±5.04 years in Aydın and 26.87±4.82 in Edirne (Kılıçarslan, 2008; Kaya & Serin, 2008). In a study carried out in Malatya, the mean age of pregnant women was reported as 28.42±5.31 years (Kısacık & Gölbaşı, 2009). Considering these findings, it can be argued that the mean age of the pregnant women determined in our study is within the ideal pregnancy age (20-30 years) and is consistent with the previous studies conducted in Turkey.

In the current study, which was carried out in central Kayseri, it was found that 37.2% of the pregnant women were primary school graduates. In a study carried out by Kıssal and Kartal (2019), 31.8% of pregnant women who received ANC services were found to be high school

graduates. Also, we determined that the numbers of primary school and high school graduates in the sample are similar, and the proportion of college graduate pregnant women is 8.6%. Although the education status of pregnant women is better compared to TNSA 2008 Turkey data, the education level of women should be higher since they have an important role in the health of families. Also, low education level is another factor that increases the number of births in Turkey (TNSA, 2008).

Almost all pregnant women (99.6%) who participated in our study received ANC. According to the TNSA 2018 data, 96% of women in Turkey received antenatal care from a health professional. Also, the TNSA 2018 data indicated that the proportion of pregnant women who received antenatal care in the first trimester of pregnancy does not differ significantly with the region. Among pregnant women, %87 of those living in a rural area and 91% of those living in an urban area were received their first antenatal care in the first 3 months of their pregnancy.

A total of 63% of the pregnant women received antenatal care from a state hospital, 32.4% from a private hospital, 25.2% from a family doctor and 2.9% from a university hospital. Supporting public institutions for antenatal care might be an effective approach. ANC services in Turkey are mostly provided by health institutions with expensive technological equipment and qualified personnel, where secondary and tertiary healthcare services are provided. Although ANC services should be provided within the scope of preventive health services, very few pregnant women receive ANC services from a primary health care institution. Since our study was conducted in an urban area, the proportion of those who received ANC from a family doctor, that is, within the scope of preventive health care, is quite low compared to other institutions. Almost all pregnant women started receiving antenatal service in the first trimester of their pregnancy. A total of 91.6% of the pregnant women stated that they received ANC services once a month. According to the TNSA 2008 data, 74.2% of the pregnant women in Turkey received ANC before the first 4 months of their pregnancy. The same data reveals that 92% of pregnant women received at least one ANC in their last pregnancy in the last 5 years. This ratio varies according to regions and some factors. The proportion of those who received four and more ANC services was 73.7%. On the other hand, the proportion of those who received less than four ANC services is very low, 0.4%. The rate of those who received ANC at least once during pregnancy is 72% in the world, 98% in developed countries, and 68% in developing countries. The rate of those who received four or more antenatal care services varies among countries. Also, this rate is determined by the

education level of the woman, the region of residence (urban-rural), the number of births, having health insurance, and especially the income level.

A study conducted in Ankara in 1996 showed that the proportion of women who received ANC services was very low, 8.7% (Chang, 2003). This finding indicates that the proportion of women who received antenatal care has increased over time, at least in the urban regions. It can be argued that this result that the rate of those who received antenatal care services is high and antenatal services are effective and sufficient in central Kayseri, an urban area, is consistent with our finding. Our findings are consistent with the TNSA 2018 data that indicates 94% of the ANC services are received from a physician. Similarly, in our study, the ratio of receiving care from a physician was found to be very high, which points put primary health care institutions are not sufficiently used for ANC services. Considering that a sufficient ANC is defined as the care provided by a health care professional which started during the first trimester of pregnancy with at least 4 screenings during pregnancy; and the absence of any of these is considered inadequate ANC, 8 women in the sample did not receive adequate ANC services.

Regarding the relationship between the birth mode preference and quality of life, we found significant differences in psychological domain and quality of life total scale scores. Regarding the delivery mode preference, the quality-of-life scale mean scores of those who prefer normal delivery were found to be high in all domains. The quality-of-life mean scores of the pregnant women who were affected by health care professionals providing antenatal care in delivery mode preference and those who have not yet decided on the delivery mode were significantly higher in all domains than the other pregnant women. This finding indicates that health care professionals have a great impact on the birth mode preference of women. Information and counseling programs during antenatal care can positively affect the quality of life of pregnant women.

**Conflicts of interest**

The authors declare that there are no potential conflicts of interest relevant to this article

**References**

Arunda, M., Emmelin, A., Asamoah, B.O. (2017). Effectiveness of antenatal care services in reducing neonatal mortality in Kenya: Analysis of national survey data. *Glob Health Action*, 10(1):1328796.

Başaran, S., Güzel, R., Sarpel, T. (2005). Yaşam kalitesi ve sağlık sonuçlarını değerlendirme

ölçütleri, *Romatizma*, 20(1):55-63.

Elveren, C. (2008). Aydın Doğumevinde Doğum Yapmış Olan Kadınların Doğum Öncesi Bakımları ve Gebelik Süresindeki Tutum ve Davranışlarının İncelenmesi, Uzmanlık Tezi, Adnan Menderes Üniversitesi Tıp Fakültesi Aile Hekimliği Anabilim Dalı, Aydın.

Fidaner, H., Elbi, H., Fidaner, C. ve ark. (1999). Yaşam kalitesinin ölçülmesi, WHOQOL-100 ve WHOQOL-BREF, *3P Dergisi*,7 :5-13

Güler, Ç., Akın, L. (2015). Halk Sağlığı Temel Bilgiler 3, 3. Baskı, Ankara. Hacettepe Üniversitesi Yayınları.

Kaya, F., Serin, Ö. (2008). Doğum öncesi bakımın niteliği, *Türk Jinekoloji ve Obstetrik Derneği Dergisi*, 5(1):28-35.

Kısacık, G., Gölbaşı, Z. (2009). Gebe kadınların sigara içme davranışları ve gebelikte sigaranın etkilerine yönelik bilgileri, *Jinekoloji Obstetrik Dergisi*, (4):197-205.

Kıssal, A., Kartal, B. (2019). Bir üniversite hastanesinde doğum yapan kadınların doğum öncesi bakım içeriğinin değerlendirilmesi. *Kocaeli Üniversitesi Sağlık Bilimleri Dergisi*, 5(1):35-41.

Kılıçaslan, S. (2008). Edirne Şehir Merkezindeki Son Trimestır Gebelerin Sosyodemografik Özellikleri, Yasam Kaliteleri, Kaygı Düzeyleri, Uzmanlık Tezi, Trakya Üniversitesi Aile Hekimliği Ana Bilim Dalı, Edirne.

Kotelhuck, M. (1994). An evalotion of the kessner adequacy of prenatal care ındex and proposed adequacy of prenatal care utılızation ındex*. Am J Publıc Health*, 84:1414-1420.

Özçelik, G. (2010). Aydın İlinde Gebelikte Yaşanan Sağlık Sorunları ve Yasam Kalitesi ile İlişkisi, Yüksek Lisans Tezi, Adnan Menderes Üniversitesi Sağlık Bilimleri Enstitüsü Doğum ve Kadın Sağlığı ve Hastalıkları Hemşireliği Ana Bilim Dalı, Aydın.

Özyılkan, Ö. (2008). Kanser hastalarında yaşam kalitesinin önemi, *Fırat Sağlık Hizmetleri Dergisi*, 3(8).

Sağlık Bakanlığı, (2018). Doğum Öncesi Bakım Yönetim Rehberi, Halk Sağlığı Genel Müdürlüğü Kadın ve Üreme Sağlığı Dairesi Başkanlığı, Ankara.

Scott, J.R. (1997). Sezaryen Doğumu, İçinde: Erez S (eds), Danforth Obstetrik ve Jinekoloji,7. Baskı, Yüce A.Ş, İstanbul, 563-576.

Sunal, N., Demiryay, A. (2006). Gebe kadınların algıladıkları fiziksel ve emosyonel yakınmalar, *Fırat Sağlık Hizmetleri Dergisi*, 1(2):1-13.

Taşkın, L. (2020). Doğum ve Kadın Sağlığı Hemşireliği, 16.baskı, Akademisyen Kitabevi.

Tekelap, T., Chojenta, C., Smith, R., Loxton, D. (2019). Factors affecting utilization of antenatal care in Ethiopia: A systematic review and meta-analysis. *PlusOne,* 14(4):e0214848.

Türkiye Nüfus ve Sağlık Araştırması (TNSA) (2018). Hacettepe Üniversitesi Nüfus Etütleri Enstitüsü, Ankara, Türkiye.

Yıkar Karacay, S., Nazik, E. (2018). The effect of complaints during pregnancy on quality of life, *International Journal of Caring Sciences*, 11(1):623-626.