

# Antenatal care before caesarean section in rural Turkey

## Abstract

This cross-sectional study was conducted at the state hospital in Gaziantep, rural Turkey, to assess the quality of antenatal care in women who underwent caesarean section (CS). Data collected from 581 women admitted for CS between October and December 2005 were retrospectively analysed and found that Turkish women preferred obstetricians to midwives for their antenatal care. Obstetricians chiefly consider antenatal care as a follow-up to ultrasound, and procedures such as weight monitoring, blood pressure measurement and blood analysis, all of which help to facilitate timely diagnosis of complications, were mostly overlooked.

The belief that antenatal care is only for women with complications could be abolished through education and may help to encourage vaginal delivery. Pregnant women who receive antenatal care from obstetricians are more likely to undergo CS, thus greater collaboration between obstetricians and midwives is necessary in future to promote normal births.

an alternative method (Hotun Şahin, 2009). CS rates are steadily increasing not only in Turkey but also in several other countries. To explain this phenomenon, it has been argued that society's tolerance for pain has been significantly reduced in recent years. In addition, women are increasingly scared of pain and think if they have a CS, there will be less, if any, pain. It is noteworthy that the Royal College of Midwives has stated that 'women have lost their confidence in their ability to give birth'. [AQ1-do you have a reference for this?] Therefore, we believe that the lower CS rates observed in 1998 cannot be entirely attributed to educational factors. In a study performed in an outpatient clinic for pregnant women, 45.2% of women who preferred CS stated that this preference was because of a fear of vaginal delivery (Bektaş, 2008).

In 2008, the maternal and infant mortality rate decreased from 49 per 100000 live births and 43 per 1000 live births in 1998, to 19.4 per 100000 live births and 17 and 1000 live births, respectively (TDHS, 2008). There has also been a change in the causes of maternal mortality as a result of the increase in CS rates. Complications due to anaesthesia and surgery are now the third leading cause of maternal mortality in Turkey (TDHS, 2008). Some health authorities believe that the decrease in maternal and infant mortality is due to the increase in CS rates. However, in 2006, the Turkish Ministry of Health initiated vigorous education and action on maternal and infant mortality.

It is necessary that women are well educated and informed throughout their pregnancy about the potential risks of CS to encourage normal vaginal delivery. Midwives, in cooperation with obstetricians, are best placed to perform this role, which historically took place in healthcare centres and via home visits.

After the introduction of the performance-based payment system, the trend for treating women in healthcare centres caused a decline in the follow-up of pregnant women by midwives (Pala et al, 2005; Kizek et al, 2010). Thus, the contribution of midwives in antenatal care, which was 15.5% in 1993, decreased to 5.5% in 2003 and 2.5% in 2008 (TDHS, 2008).

Radical changes have been made to the health policies in Turkey due to the Health Transformation Programme in 2003 (Yasar, 2011). One such change is the 'performance-based payment system' applied to the payment of obstetricians. In this system, the performance of medical facilities is evaluated on the basis of the number of surgeries and laboratory tests performed. Contrary to expectations, this system has not improved the quality of healthcare, instead it has increased the number of unnecessary surgeries and diagnostic tests. The system has also impacted the delivery preferences of pregnant women (Erkan, 2011).

According to the Turkey Demographic and Health Survey (TDHS), the caesarean section (CS) rate in Turkey has increased since the introduction of the performance-based payment system; in 1998, the CS rate was 14%, this increased to 21.4% in 2003 and 42.5% in 2008 (TDHS, 2008). These figures are significantly higher than the recommended rate of 10–15% proposed by the World Health Organization (WHO) (WHO, 1985). However, the increase in rate of CS is not solely due to payment-based system. One potential reason may be that many women do not receive adequate education during pregnancy, and thus fear intense pain during vaginal delivery and consider CS as

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Healthcare centres for antenatal care were subsequently closed down and, the family medicine system was established in 2005. *Family Medicine Regulation* details the authorisations and duties of staff participating in the system, where a GP is responsible for 2500–3000 individuals in a given district. In Turkey, nurses and midwives working with GPs are all called ‘family health staff’. In practice, not only nurses or medical officers, but also emergency medical technicians whose training does not include protective health care services are also employed as family health staff.

It is commonly believed that the performance-based payment system increased the CS rate in Turkey. Therefore, the Ministry of Health began work (2010) on a new regulation in which the quality of service is assessed on the basis of the number of normal vaginal deliveries. Considering the current desire of women for CS, this approach will not reduce the CS rate unless women receive adequate antenatal care education on the advantages of normal birth. Failure to develop a midwifery care concept in the family medicine system will cause women to visit only their obstetricians during pregnancy. Women who receive antenatal care from obstetricians are considered more likely to opt for CS. Thus, this study examines the quality of antenatal care in women who underwent CS.

## Method

This study was performed at the state hospital in Gaziantep, in south-eastern Anatolia, rural Turkey. The hospital has a large maternity centre where women from Gaziantep, neighbouring cities and rural areas all receive antenatal care.

In this cross-sectional study, quantitative data were retrospectively collected and analysed from 581 women admitted for CS between October and December 2005. Women were interviewed using a structured/semi-structured questionnaire. All of the participants were encouraged to add comments to clarify or expand their answers. Nine subjects declined to be included in the study. [AQ2- why was this?] Women were considered to be eligible if they were on the second post-operative day. Subjects requiring admission to intensive care units were excluded.

Ethical approval to perform this study was obtained from the Gaziantep Provincial Health Directorate. Oral informed consent was obtained from all participants. Data analysis were performed using the SPSS version 10.0 software (SPSS Inc., Chicago, IL, USA). Percentile distribution, arithmetic average and the chi-square test were used for data evaluation.

## Results

Participant characteristics are shown in *Table 1*. The average participant age was 27.3 ±5.57 years (range: 15–45 years). Of all participants, 58.7% had received primary school education, 97.2% were unemployed and 81.2% had health insurance. One third of the women lived with their extended family, and 40.6% had an income equal to or above the minimum wage. The percentage of women who received a sufficient number of antenatal care visits (>4) was highest (87.5%) for women who were employed, followed by those who had achieved secondary school level or higher education (73.1%), those with an income equal to or above the minimum wage (56.1%), those living in nuclear families (53.8%) and those with health insurance (51.9%). A statistically significant correlation was established between the number of antenatal care visits and the educational level, employment status, health insurance, family type and family income ( $P<0.05$ ).

The main reason that the women in this study had a CS was that they had previously had one (36%). Social factors were rated low amongst the participants reasons (10.1%) and only 6.4% of women had an elective CS. However, in 41.5% of women with prior CS, CS was recommended by an obstetrician. The percentage of women requesting CS was 6.4%. Of the women who underwent CS, 15% underwent simultaneous tubal ligation (*Table 2*).

*Table 3* presents the characteristics of antenatal care received. At least one antenatal visit was received by 96% of the study participants, 47% received an insufficient number of visits (1–3) and 4% received none. The minimum four antenatal visits recommended by the WHO (2012) were received by 49% of the participants. 52.4% of women didn't receive antenatal care as they believed it was unnecessary. For the early diagnosis of complications, it is essential to begin antenatal during the first trimester and continue regularly until the end of pregnancy. In this study, 65.2% of women received antenatal visits during the first trimester, whereas 48.9% received antenatal care in all three trimesters. Of the women receiving antenatal care, 67.8% attended obstetricians' offices. The percentage of women who preferred healthcare centres was 8.6%. During their pregnancies, 90.3% of the women were examined solely by an obstetrician; only 9.7% were examined by a midwife.

While 96.8% of the study participants provided with at least one antenatal visit underwent ultrasonography, blood pressure was measured in 88%, blood tests performed in 44.1% and urinalysis

**Table 1. Antenatal distribution according to participant demographics**

|                               | Number of ANC visits |     |                       |      |                      |      |                  |       | P value |
|-------------------------------|----------------------|-----|-----------------------|------|----------------------|------|------------------|-------|---------|
|                               | None<br>(n=23)       |     | 1–3 visits<br>(n=273) |      | ≥4 visits<br>(n=285) |      | Total<br>(n=581) |       |         |
|                               | n                    | %   | n                     | %    | n                    | %    | n                | %     |         |
| <b>Age (years)</b>            |                      |     |                       |      |                      |      |                  |       |         |
| 15–19                         | 2                    | 5.9 | 19                    | 58.8 | 11                   | 35.3 | 32               | 100.0 | 0.224   |
| 20–24                         | 6                    | 3.7 | 81                    | 46.8 | 85                   | 49.5 | 172              | 100.0 |         |
| 25–29                         | 6                    | 3.3 | 85                    | 46.2 | 93                   | 50.5 | 185              | 100.0 |         |
| 30–34                         | 3                    | 3.4 | 38                    | 39.7 | 54                   | 56.9 | 95               | 100.0 |         |
| ≥35                           | 6                    | 6.6 | 56                    | 57.9 | 35                   | 35.5 | 97               | 100.0 |         |
| <b>Education</b>              |                      |     |                       |      |                      |      |                  |       |         |
| None                          | 15                   | 8.7 | 94                    | 54.3 | 64                   | 37.0 | 173              | 100.0 | 0.000   |
| Primary school                | 7                    | 2.1 | 162                   | 47.5 | 172                  | 50.4 | 341              | 100.0 |         |
| ≥Secondary school             | 1                    | 1.5 | 17                    | 25.4 | 49                   | 73.1 | 67               | 100.0 |         |
| <b>Employment</b>             |                      |     |                       |      |                      |      |                  |       |         |
| Employed                      | 0                    | 0   | 2                     | 12.5 | 14                   | 87.5 | 16               | 100.0 | 0.008   |
| Unemployed                    | 23                   | 4.1 | 271                   | 48.0 | 271                  | 48.0 | 565              | 100.0 |         |
| <b>Health insurance</b>       |                      |     |                       |      |                      |      |                  |       |         |
| Some                          | 14                   | 3.0 | 213                   | 45.1 | 245                  | 51.9 | 472              | 100.0 | 0.000   |
| None                          | 9                    | 8.3 | 60                    | 55.0 | 40                   | 36.7 | 109              | 100.0 |         |
| <b>Type of family</b>         |                      |     |                       |      |                      |      |                  |       |         |
| Nuclear                       | 11                   | 2.8 | 173                   | 43.5 | 214                  | 53.8 | 398              | 100.0 | 0.001   |
| Extended                      | 12                   | 6.6 | 100                   | 54.6 | 71                   | 38.8 | 183              | 100.0 |         |
| <b>Family income/monthly*</b> |                      |     |                       |      |                      |      |                  |       |         |
| Irregular                     | 3                    | 2.8 | 65                    | 59.6 | 41                   | 37.6 | 109              | 100.0 | 0.008   |
| <Minimum wage                 | 8                    | 3.7 | 108                   | 49.8 | 101                  | 46.5 | 217              | 100.0 |         |
| ≥Minimum wage                 | 12                   | 4.7 | 100                   | 39.2 | 143                  | 56.1 | 255              | 100.0 |         |

\*Monthly income of \$281 (the officially defined minimum wage at the time of the study in Turkey) was used

in 42.5% (Table 4). Only 45.9% underwent weight monitoring. The average number of examinations per participant were:  $4.79 \pm 4.33$  (range: 0–20) for ultrasonography;  $4.81 \pm 4.91$  (range: 0–24) for blood pressure measurement;  $1.11 \pm 1.41$  (range: 0–8) for blood tests and  $0.65 \pm 1$  (range: 0–5) for urinalysis. Only 29.7% of women undergoing antenatal care received full immunisation against neonatal tetanus (Table 4).

### Discussion

This study found a statistically significant relationship between receiving adequate antenatal care and educational level, employment, health insurance, family type and level of income. The percentage of women who received a sufficient number of antenatal visits was highest for those with secondary school level or higher education, employed women, with an income equal to or

above the minimum wage, living in nuclear families and with health insurance. This was also demonstrated in other studies (Beşer et al, 2007; Kılıç et al, 2007; Omaç et al, 2009). Coimbra et al (2007) and Teitler et al (2012) also reported that the rate of receiving antenatal care decreases with a decreasing educational status and income.

A history of CS (36%) was the most common indication for CS among the study participants. According to Turkish research, the percentage of women whose indication for a CS was a previous CS ranges from 20.4 to 34.8% (Gül, 2008; Kıyak Çağlayan et al, 2009; Balcı et al, 2010; Şimşek et al, 2012). However, it should be noted that it is possible to have a vaginal birth after a caesarean section—this is commonly known as VBAC (Penn and Gham-Maghani 2001; Dathwal et al., 2003; Ertem and Koçer 2008; Kashif et al, 2012; Naidoo and Moodley 2009).

CS is also performed to facilitate tubal ligation. In this study, tubal ligation was performed in 15% of women undergoing CS. Bektaş (2008) showed that the desire for concurrent tubal ligation underlies the preference for CS. In this study, 6.4% of women indicated that CS was their personal preference. Yanikkerem Uçum et al (2010) found that 18.7% of women stated that CS was performed at their request. A history of CS, demand for tubal ligation and patient choice are not valid indications for CS.

For the timely diagnosis of disorders in pregnant women, it is important to begin antenatal care in the first trimester and continue regularly throughout pregnancy. In this study, 65.2% of women had their first antenatal visit during the first trimester. While Ziyö et al (2009) reported that 73% of women had their first antenatal visit in the first 16 weeks of pregnancy, Bassani et al (2009) showed that 72% of women had their first visit during the first trimester. This study found that only 49% of women received antenatal care in all three trimesters and only 49% of women received the minimum four antenatal visits proposed by the WHO. In Turkey, 40–95% of women receive a sufficient amount of antenatal care (Çiçeklioğlu et al, 2005; Mısırlıoğlu et al, 2006; Turan et al, 2008; Kaya and Serin, 2008; Omac e al, 2009). This study has shown that the time of first antenatal visit and receipt of regular antenatal care were inadequate—52.4% of participants did not receive antenatal care because they did not believe it was necessary. Erbaydar (2003) reported that Turkish women often believe that antenatal care was unnecessary.

Of the study participants who received antenatal care, 67.8% attended private hospitals or obstetricians' private offices. Kaya and Serin (2008) reported that 55% of women received antenatal care from private hospitals, whereas Sözeri et al (2006) reported this percentage to be 35.2%. In this study, the percentage of women visiting private hospitals or obstetricians' offices was high compared to other studies. This may have been because this study group comprised only women who had undergone CS. The CS rate of public hospital users in Brazil has been reported to be 42.6%; the rate is more than double in private users (85.8%) (Mendosa Sassi et al, 2010). In Thai women, it has been reported that CS rate is higher for those attending private hospitals than that non-private hospitals (Phadungkiatwattana and Tongsakul, 2011). Similarly, Varışoğlu (2008) reported a higher rate of private hospital attendance among women who underwent CS compared with those who underwent vaginal delivery. It is possible to speculate that women attending private hospitals

**Table 2. Characteristics of caesarean sections performed**

|  | <i>n</i> | %    |
|--|----------|------|
| <b>When participants were informed about undergoing CS</b> |          |      |
| During pregnancy   | 241      | 41.5 |
| During labour  | 340      | 58.5 |
| <b>Elective CS</b>   |          |      |
| Yes  | 37       | 6.4  |
| No   | 544      | 93.6 |
| <b>Number of previous CSs</b>                              |          |      |
| 1  | 359      | 61.8 |
| 2  | 151      | 26.0 |
| 3–5  | 71       | 12.2 |
| <b>Indication for CS</b>                                   |          |      |
| History of CS  | 209      | 36.0 |
| Maternal factors   | 129      | 22.2 |
| Fetal and placental factors                                | 184      | 31.7 |
| Social factors   | 59       | 10.1 |
| <b>Tubal ligation</b>                                      |          |      |
| Yes  | 87       | 15.0 |
| No   | 494      | 85.0 |
| CS—caesarean section                                       |          |      |

for antenatal care are encouraged to undergo CS by obstetricians. Indeed, in 41.5% of study participants, CS was selected by obstetricians.

Only 8.6% of study participants attended a healthcare centre for antenatal care. The rate of healthcare centre attendance for antenatal care was 11.6% according to Sözeri et al (2006) and 6.6% according to Kaya and Serin (2008). In this study, 9.7% of women received antenatal care from midwives. Midwives performed antenatal care during home visits, and women did not demand antenatal care from midwives beyond this. It is possible that women are likely to prefer CS if they do not receive antenatal care and education from midwives throughout their pregnancy. Women who are visited by a midwife are less likely to undergo CS (McLachlan et al, 2012).

For the timely diagnosis of pregnancy complications, blood pressure measurement, weight monitoring, blood analysis and urinalysis should be performed routinely throughout pregnancy. Ultrasonography should be performed only when required (Marinac-Dabic et al, 2002) Prophylaxis against neonatal tetanus should also be performed routinely within antenatal care (WHO, 2006). In this study, of all women who received antenatal care at least once, 97% underwent ultrasonography, 88% had their blood

**Table 3. Characteristics of antenatal care received**

|   | <i>n</i> | %    |
|---|----------|------|
| <b>Number of antenatal care visits (mean <math>\pm</math>SD= 5.16<math>\pm</math>4.49 (range: 2–20))</b>                          |          |      |
| None  | 23       | 4.0  |
| 1–3   | 273      | 47.0 |
| 4–6   | 114      | 19.6 |
| 7–9   | 67       | 11.5 |
| $\geq$ 10   | 104      | 17.9 |
| <b>Reasons for inadequate antenatal care (<i>n</i>=296*)</b>  |          |      |
| Believing that it is unnecessary  | 155      | 52.4 |
| Financial reasons   | 99       | 33.4 |
| Lack of time  | 14       | 4.7  |
| Ignorance   | 11       | 3.7  |
| Deficiency in transport facilities  | 8        | 2.7  |
| Disregard of medical staff  | 5        | 1.7  |
| Discouragement of family members  | 4        | 1.4  |
| <b>Timing of the first antenatal care visit (<i>n</i>=558**) (mean <math>\pm</math>SD=12.35<math>\pm</math>8.5 (range: 1–40))</b> |          |      |
| <13th week of pregnancy   | 364      | 65.2 |
| 13–24th week of pregnancy   | 143      | 25.6 |
| >24th week of pregnancy   | 51       | 9.1  |
| <b>Pregnancy period when antenatal care was received (<i>n</i>=558**)</b>   |          |      |
| Only 1st trimester  | 16       | 2.9  |
| Only 2nd trimester  | 51       | 9.1  |
| Only 3rd trimester  | 51       | 9.1  |
| 1st and 2nd trimesters  | 49       | 8.8  |
| 1st and 3rd trimesters  | 27       | 4.8  |
| 2nd and 3rd trimesters  | 91       | 16.4 |
| All three trimesters  | 273      | 48.9 |
| <b>Centre providing antenatal care (<i>n</i>=558**)</b>   |          |      |
| Private hospital/private office   | 378      | 67.8 |
| State hospital  | 132      | 23.6 |
| Healthcare centre   | 48       | 8.6  |
| <b>Antenatal care provider (<i>n</i>=558**)</b>   |          |      |
| Obstetrician  | 504      | 90.3 |
| Obstetrician and midwife  | 37       | 6.6  |
| Midwife   | 17       | 3.1  |
| <b>Status of home visits by midwives (<i>n</i>=558**)</b>   |          |      |
| Yes   | 54       | 9.7  |
| No  | 504      | 90.3 |
| *Women who receive adequate antenatal care are not included in the study  |          |      |
| **Women who did not receive antenatal care are not included in the study  |          |      |

pressure measured, 44% underwent blood analysis and 42% underwent urinalysis; however, only 46% underwent weight monitoring. Vaccination against neonatal tetanus was received by only 29.7%. Although nearly all study participants received antenatal care from an obstetrician, the quality of care was surprisingly inadequate.

In the follow-up conducted solely by obstetrician, blood pressure measurements, blood analysis, urinalysis, weight measurements and prophylaxis against neonatal tetanus were inadequate; follow-up often comprised ultrasonography alone. Huang et al (2012) reported a significant relationship between ultrasonography use and the CS rate. This phenomenon may be explained by the anxiety that the screening for fetal abnormalities can provoke (Huang et al 2012). Participants were more likely to have their blood pressure measured, blood analysed, urinalysis, weight measurement and prophylaxis against neonatal tetanus if they received antenatal care from midwives. Kaya and Serin (2008) have shown that 22.6% of women received antenatal care from midwives. The rate of receiving antenatal care from midwives is considerably high in Kaya and Serin (2008)'s study, as are the rates of blood pressure measurement, blood analysis, urinalysis, weight measurement and prophylaxis against neonatal tetanus are also high compared to this study. Moreover, in a study of pregnancy follow-up charts, Engin et al (2010) determined that midwives provided good quality antenatal care to 88% of the pregnant women they attended in urban locations.

## Conclusions

The quality of antenatal care in pregnant women in this study in rural Turkey appeared to be low with just over half of the women receiving the four recommended antenatal visits in pregnancy (WHO, 2012). Furthermore, the antenatal care comprised mainly of ultrasonography with procedures that may yield timely diagnosis of complications such as blood pressure monitoring and urinalysis, mostly overlooked. The majority of pregnant women in this study received antenatal care from an obstetrician, and these women were more likely to undergo CS, compared to care provided by a midwife only. The primary indication for undergoing CS is a history of CS. Pregnant women who attend private clinics for antenatal care are also more likely to undergo CS. In Turkey, women do not receive antenatal care from midwives, except during home visits—a small proportion of women visit healthcare centres. Antenatal care is erroneously considered a follow-up to ultrasonography. Women with poor

**Table 4. Quality of ANC Received (n=558\*)**

| Routine Examination During Pregnancy                        | No. | %    |
|---|-----|------|
| Ultrasonography scan mean±SD=4.79±4.33 (range: 0–20)        |     |      |
| None  | 18  | 3.2  |
| 1–3 examinations  | 270 | 48.4 |
| 4–6 examinations  | 119 | 21.3 |
| ≥7 examinations   | 151 | 27.  |
| Blood pressure measurement mean ±SD=4.81±4.91 (range: 0–24) |     |      |
| None  | 67  | 12.  |
| 1–3 measurements  | 235 | 42.0 |
| 4–6 measurements  | 100 | 18.0 |
| ≥7 measurements   | 156 | 28.0 |
| Blood tests mean±SD=1.11±1.41 (range: 0–8)                  |     |      |
| None  | 312 | 55.9 |
| 1 examination   | 166 | 29.7 |
| 2–3 examinations  | 64  | 11.5 |
| ≥4 examinations   | 16  | 2.9  |
| Urine analysis mean ±SD=0.65±1.00 (range: 0–5)              |     |      |
| None  | 312 | 57.5 |
| 1 examination   | 166 | 29.7 |
| 2–3 examinations  | 64  | 11.5 |
| ≥4 examinations   | 16  | 2.9  |
| Tetanus vaccine   |     |      |
| None  | 300 | 53.8 |
| 1 dose  | 92  | 16.5 |
| 2 dose  | 166 | 29.7 |
| Body weight monitoring                                      |     |      |
| Not weighed   | 302 | 51.9 |
| Weighed at least once                                       | 256 | 45.9 |

\*Women in the study who did not receive antenatal care are not included in this table

## Key points

- Turkish women prefer obstetricians to midwives to provide their antenatal care
- Pregnant Turkish women who attend private clinics or private office for antenatal care are more likely to undergo caesarean section
- Overall, the quality of antenatal care provided by obstetricians seems to be inadequate
- Lack of education, low income, unemployment, and life with their extended family were associated with an inadequate number of antenatal visits among Turkish women
- Several women did not receive antenatal care because they felt it unnecessary

education, low income, unemployed and living with their extended families receive an inadequate number of antenatal care visits.

This research has shown that including midwives into primary health care efficiently in cooperation with obstetrician will raise the quality of antenatal care during pregnancy and encourage women to have vaginal delivery. Furthermore, women who are financially and educationally independent will procure them to receive the services all the better. Lastly, providing in-service training for medical staff in vaginal delivery after CS will lead a decrease in the history of CS indications. **BJM**

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