



A Comparison of Perinatal Outcomes of Turkish and Syrian Immigrant Women: A Case-Control Study

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Abstract:

This present study aims at the differences in prenatal, labor, and neonatal outcomes for Syrian refugees and Turkish citizens. A total of 315 Turkish and 296 Syrian migrant women participated in the case-control study. Age, age at first pregnancy, antenatal care, and prenatal hemoglobin values were significantly lower in the Syrian refugee group. Stillbirth rates were higher in the Turkish citizens group. The percentage of newborns hospitalized in a neonatal intensive care needs and neonatal resuscitation was higher in Syrian immigrant women. In comparison to non-refugee control patients, refugee women in our study had poor antenatal care, and adverse perinatal outcomes were observed.

1. Introduction

Migration is a public health issue caused by globalization. Migration also highlights that countries should make decisions together and act according to common laws. Forced displacement leads to loss of life, poverty, and an increase in physical and mental illnesses as well as causes disruptions in sustainable health services. According to International Migration Report 2022, the number of international immigrants in 2020 was approximately 281 million, corresponding to approximately 3.6% of the world's population [1]. The proportion of immigrants in the world population is gradually increasing day by day. According to the United Nations High Commissioner for Refugees (UNHCR), the countries hosting the highest number of immigrants in the world are Turkey, Colombia, Pakistan, Uganda, and Germany, respectively [2]. Turkey is the largest refugee-hosting country worldwide. As of 24 March 2022, 3 million 754 thousand 591 Syrian refugees live with temporary protected status in Turkey [3]. Regardless of the reason for migration, women and children are the most affected segments of society by migration. Ethnicity, culture, gender

discrimination, traditional lifestyle, and religious beliefs cause women to feel the negative effects of migration more; these factors also make their access to health services more difficult [4]. When insufficiency in health facilities and health workers are combined with these factors, migrant women face difficulty in meet their health needs, and therefore, experience reproductive health problems [5]. Early and forced marriages, adolescent pregnancies, unmet family planning needs, severe maternal diseases, maternal deaths, sexually transmitted diseases, perinatal infant deaths, and miscarriages are the most common health problems [6].

Antenatal care covers all care services provided to a woman from conception until delivery. The mother is given training on nutrition, pregnancy hygiene, birth, postpartum care, baby care and family planning methods that she can use after birth. [7]. According to Turkish Ministry of Health guides, a woman should receive antenatal care at least four times during the pregnancy period [8]. However, a majority of immigrant women cannot receive sufficient antenatal care due to language barriers, economic insufficiency, difficulty in accessing health services, problems with health professionals,

legal limitations, and cultural differences. Antenatal care is very important for preparing for delivery and the puerperium period. According to TNSA 2018 data, 93% of Syrian women gave birth in a health institution and 5% at home. The same report indicated that 89% of Syrian women receive postpartum care [9].

Mothers' fertility behaviors are strongly associated with maternal and infant mortality. According to TNSA 2018, adolescent pregnancies, short intervals between pregnancies, and high numbers of giving birth are important risk factors for deaths in infancy and early childhood. Furthermore, the TNSA 2018 report also showed that 35% of pregnancies in the Turkish sample were considered to be risky whereas, this ratio increased to 57% in the Syrian sample [9]. Failure to meet the reproductive health needs of immigrant women may result in negative outcomes among maternal, infant, and public health. A successful and effective family planning program, protecting maternal and child health, reducing risky pregnancies, and preventing unwanted pregnancies will contribute to reducing maternal and infant mortality significantly [10]. This study aims to compare pregnancy, birth characteristics, and neonatal outcomes of Turkish women and immigrant Syrian women.

2. Material and Methods

A case-control study was designed. The population of the study consisted of immigrant Syrian and Turkish citizen pregnant women who attended the Obstetrics-Gynecology Polyclinic and Delivery Room of a training and research Hospital for delivery. To determine the sample size, a power analysis was conducted with a 0.95 confidence interval, 0.80 power, and 0.5 effect size. Accordingly, the number of pregnant women for both groups (immigrant pregnant women and Turkish pregnant women as the control group) was calculated as 287. A total of 315 Turkish women and 296 Syrian immigrant women participated in the study.

The data were collected between May and July 2022 using a sociodemographic data sheet prepared by the researchers. The sociodemographic data sheet consisted of questions about sociodemographic characters (age, gestational age, educational status, smoking and alcohol use, etc.), health problems that emerged during the pregnancy, as well as birth and neonatal outcomes of the pregnant women.

Statistical analyses were performed on R vers. 2.15.3 (R Core Team, 2013). Analysis of descriptive variables was reported by means and standard deviations. Numerical variables were compared by

independent sample t-test. Pearson Chi-square test was used for categorical variables.

3. Results and Discussions

Data collected from 296 Syrian migrant and 315 Turkish citizen women were analyzed. Demographic characteristics are shown in Table 1.

Table 1. Demographic characteristics of the participants

| Characteristic (mean) | Turkish women (n=315) | Syrian immigrant women (n=296) | P |
|------------------------|-----------------------|--------------------------------|---------------|
| Age | 27.02±4.91 | 25.99±5.95 | 0.021* |
| Age at marriage | 21.46±3.32 | 19.08±2.83 | 0.000* |
| Age at first pregnancy | 22.47±3.49 | 19.83±2.90 | 0.000* |

*p<0.05

The mean age at marriage and first pregnancy in Syrian immigrant pregnant women was lower than those in Turkish pregnant women and this difference was significant (p<0.000) (Table 1).

An examination of the antenatal characteristics of the women indicated that 95.2% of Turkish women and 97.6% of Syrian migrant women received antenatal care. Although the percentage of women who received Ante Natal Care (ANC) was higher in Syrian immigrant women than in Turkish women, the mean number of antenatal visits was higher in Turkish women and this difference was found to be significant (p<0.001). Furthermore, the percentage of women who had double screening and glucose loading tests was higher in Turkish women and this difference was significant (p<0.001) (Table 2). The prevalence of placenta previa and urinary infections during pregnancy was higher among Syrian immigrant women and the difference was

Table 2. Antenatal characteristics of the participants

| Characteristic | Turkish women (n=315) | Syrian immigrant women (n=296) | P |
|-----------------------|-----------------------|--------------------------------|-------------------|
| ANC | 300 (95.2) | 289 (97.6) | - |
| Number of ANC visits | 5.13±2.13 | 4.22±1.66 | <0.001* |
| Double Screening test | 221 (70.2) | 120 (40.5) | <0.001* |
| Glucose loading test | 119 (37.8) | 34 (11.5) | <0.001* |
| Hemoglobin value | 10.91±0.86 | 10.58±0.92 | 0.000* |
| Hematocrit value | 36.51±1.18 | 36.38±1.25 | 0.186 |
| Anemia | 125 (39.7) | 173 (58.4) | <0.001* |

*p<0.05

Tablo 3. Obstetric characteristics of the participants

| Characteristic | Turkish women (n=315) | Syrian immigrant women (n=296) | P |
|------------------------|-----------------------|--------------------------------|---------|
| Hypertensive pregnancy | 110 (34.9) | 128 (43.2) | 0.035 |
| gestational diabetes | 51 (16.2) | 46 (15.5) | 0.826 |
| Placenta previa | 53 (16.8) | 94 (31.8) | <0.001* |
| Ablation placenta | 19 (6.0) | 21 (7.1) | 0.596 |
| Urinary infection | 180 (57.1) | 201 (67.9) | 0.006* |

*p<0.05

Tablo 4. Neonatal characteristics of infants

| Characteristic | Turkish women (n=315) | Syrian immigrant women (n=296) | P |
|------------------------|-----------------------|--------------------------------|---------|
| Stillbirth | 15 (4.8) | 10 (3.4) | 0.388 |
| Congenital anomaly | 6 (1.9) | 9 (3.0) | 0.365 |
| Hospitalized in NICN | 45 (14.3) | 78 (26.4) | <0.001* |
| Neonatal Resuscitation | 34 (10.8) | 51 (17.2) | 0.022* |

*p<0.05

found to be significant. The obstetric characteristics of the women are shown in Table 3. The percentage of newborns hospitalized in a neonatal intensive care need (NICN) and neonatal resuscitation was higher in Syrian immigrant women ($p<0.05$) (Table 4). The internal conflicts in Syria that began in 2011 effected mostly women and children. Approximately 60% of alyssum-seeking Syrian immigrants in Turkey are women of reproductive age. The immigrants in Turkey receive antenatal care and necessary vitamin supplements according to the Turkish Ministry of Health guides. However, the dramatic increase in the immigrant population negatively affects health services. Plus, various difficulties related to language, education, and culture negatively affect immigrants to receive effective health care [11]. Although some previous studies highlighted the problems of immigrants, only a limited number of studies addressed reproductive health and newborn issues.

The current study findings showed that the mean age at marriage and first pregnancy in Syrian immigrant pregnant women was lower than those in Turkish pregnant women and this difference was significant ($p<0.05$). The reason for this finding might be related to the belief that marriage provides protects girls in Syria, a country where there are intensive armed conflicts. Furthermore, the legal prohibition of forced marriage at an early age and especially, higher school enrollment of girls in Turkey are

factors causing an increase in the mean age at marriage and accordingly, at first pregnancy. Previous studies on this topic reported consistent findings [12, 13].

The findings indicated that 97.6% of Syrian immigrant women received ANC and this ratio was higher than in Turkish women. However, considering the number of ANC visits, Turkish women made 5.13 ± 2.13 ANC visits on average, whereas, Syrian immigrant women received 4.22 ± 1.66 ANC and this difference was found to be statistically significant ($p<0.05$). Furthermore, the ratio of screening tests among Turkish women was higher. Although Syrian women receive ANC, lack of health care awareness, language barriers, social exclusion, and cultural reasons prevent them from effectively benefiting from these services in terms of quality. Erenel et al. reported that Syrian immigrant women receive less antenatal care than Turkish women [12]. Shah et al. (2011) conducted a study in Canada and found that immigrant women receive inadequate health services compared to Canadian women [14]. In the current study, the prevalence of anemia among Syrian women was found to be higher than among Turkish women ($p<0.05$). Consistent with this, Kanmaz et al. (2019) reported that the prevalence of anemia in the immigrant group was higher [13]. These results are similar to the literature findings [15-17]. The reason for this finding was thought to be insufficient antenatal care and malnutrition.

The examination of the participants' obstetric characteristics revealed that no significant difference exists in the prevalence of hypertension, gestational diabetes, and ablation placenta between groups. However, the prevalence of placenta previa was found to be higher in Syrian immigrant women ($p<0.05$). Many factors including cesarean section, advanced maternal age, and a high number of pregnancies increase the risk for placenta previa. The numbers of living children and pregnancies were higher in Syrian women than in Turkish women. Furthermore, the prevalence of urinary infections was also higher in Syrian women than in Turkish women. Considering immigrants' living quarters, poor hygiene conditions, unhealthy bathrooms, and running water issues are considered to be factors increasing infection risks.

According to the obtained results, the percentage of newborns hospitalized in the neonatal intensive care need (NICN) and neonatal resuscitation was higher in Syrian infants than in Turkish infants ($p<0.05$). Inadequate ANC, failure to conduct screening tests, and lower age at first pregnancy are important factors that affect infant health. The findings showed that Syrian women in the study group married earlier and received inadequate ANC ages. Remote

Monitoring and Early Detection of Labor Progress Using IoT-Enabled Smart Health Systems for Rural Healthcare Accessibility was studied and reported [18].

4. Conclusions

Based on the results of this study, refugee women had poor antenatal care, and adverse perinatal outcomes when compare to Turkish women. It is believed that increasing women's education level and marriage age, improving their health literacy skills, and increasing rates of ANC utilization will contribute to improving mother and infant health. In addition, efforts to reduce language and cultural barriers in national health policies can make refugee women's access to health services more effective. Furthermore, the study was conducted at a single clinic, which could be considered a limitation of the study. According to the obtained findings, the health problems of Syrian immigrants, whose numbers are increasing day by day, remain as important today. Health policy applied to immigrants in Turkey is believed to positively affect the health of women and children. It may be recommended that special healthcare services be established for refugees and that educational programs be organized to increase cultural sensitivity. However, the immigration problem is still on the agenda as an important issue that should be addressed not for countries neighboring these countries but also by the entire world. It is expected that this study will shed light on multidisciplinary research on immigrant health issues. Therefore, multidisciplinary studies are needed to improve immigrant health and also to maintain global health.

Author Statements:

- **Ethical approval:** Before conducting the study, ethical permission was received from Amasya University, Committee for Non-Invasive Clinical Research Ethics (dated 22.03.2022 and numbered 63462). Plus, to perform the study in the relevant institutions, an intuitional permission letter was obtained (dated 08.04.2022 and numbered E-96172664-050.06.04). Also, informant consent was received from all participants.
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