School of Medicine

Silahlı N, Barış E, Quatranji L, Özek E, Boran P MD, PhD

The differences in perinatal outcomes between Syrian and resident mother-infant dyads: a cross sectional study in Turkey between 2011-2018

Department of Pediatrics, Division of Social Pediatrics, Division of Neonatology

ISSOP, Children in Armed Conflict: rights, health, and wellbeing

28th September 2019, Beirut

Oral Presentations

Health Problems

OPERATIONAL PORTAL
REFUGEE SITUATIONS

COUNTRIES | SITUATIONS | PARTNERS / 3W | MAPS | GLOBAL SEARCH | About | Contact | Map portal | IM Toolkit | API | Engli

Syria Regional Refugee Response | Turkey

Total Persons of Concern

.CSV JSON

3,663,863

Last updated 12 Sep 2019

Source - UNHCR, Government of Turkey

Registered Syrian Refugees

JSON

3,663,863

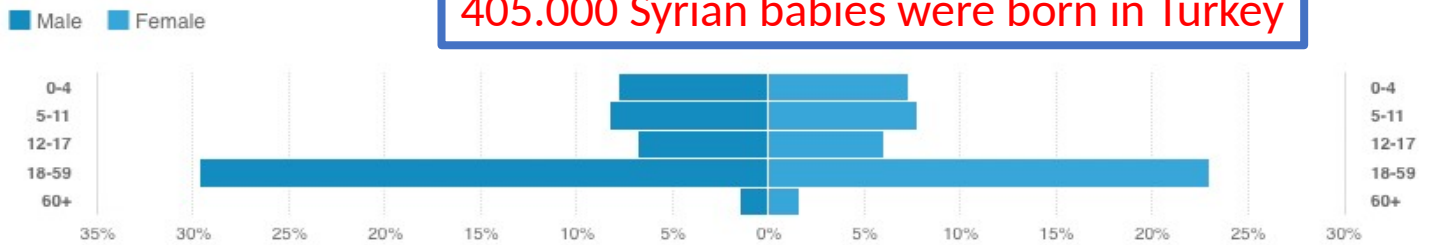
Last updated 12 Sep 2019

Source - Government of Turkey

50% women
50% children
405.000 Syrian babies were born in Turkey

Population

JSON

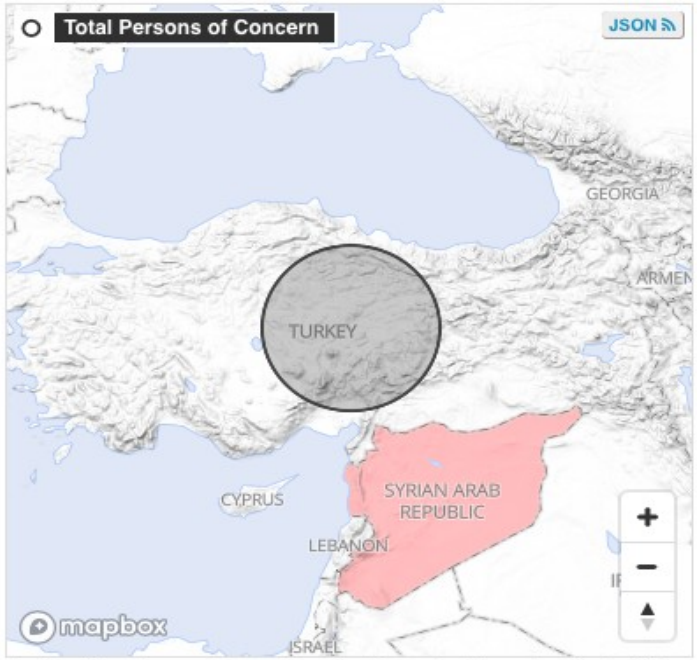


Source - Government of Turkey

Registered Syrian Refugees by Date

.CSV JSON

3RP
REGIONAL REFUGEE & RESILIENCE PLAN 2018 - 2019
IN RESPONSE TO THE SYRIA CRISIS



The boundaries and names shown and the designations used on this map do not imply official endorsement or acceptance by the United Nations

INTER SECTOR DASHBOARD

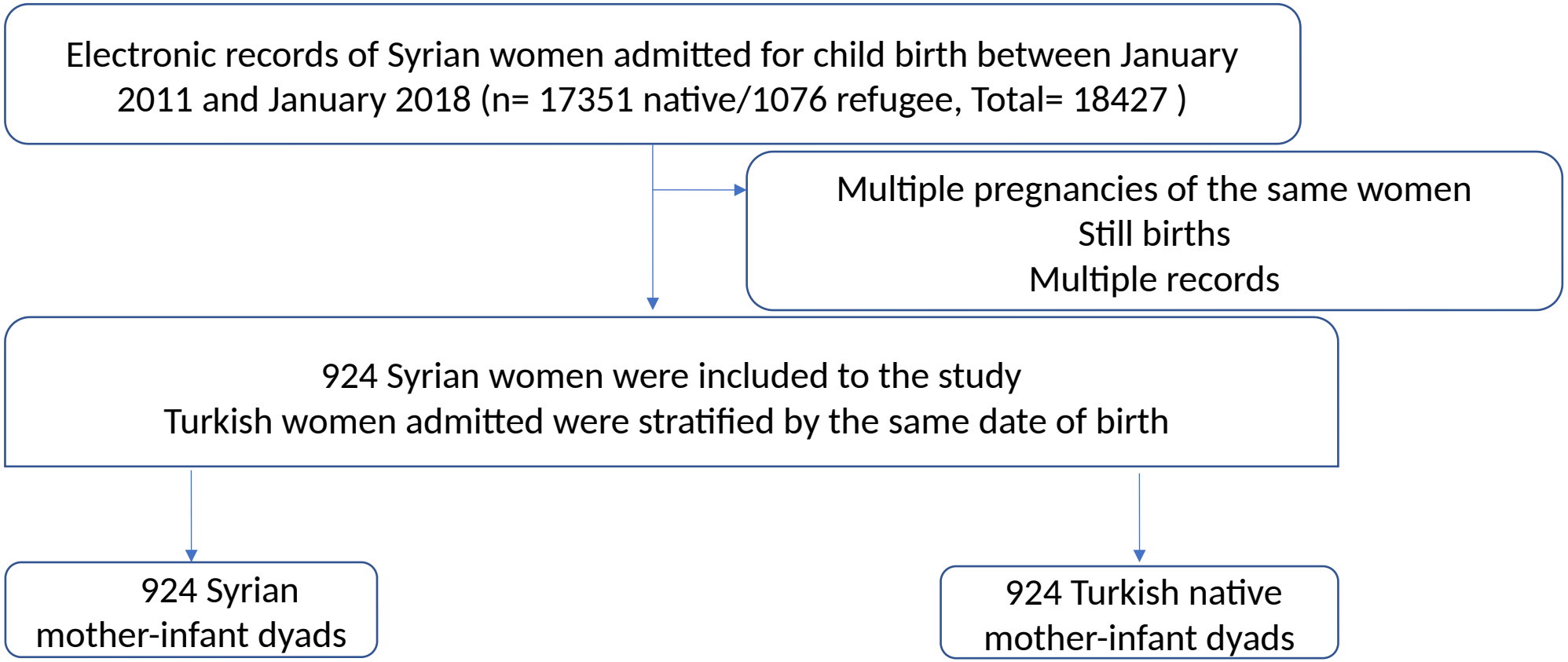
Turkey Inter-Sector Dashboard

Study aims

- Refugee women have poorer perinatal health outcomes with higher maternal/neonatal morbidity and mortality.
- Health risk profiles and outcomes vary between different migrant categories, so identifying the unique needs of this vulnerable population is crucial to enable health services tailored to their specific needs.
- ***The primary objective of the present study*** was to examine the perinatal outcomes in the Syrian refugee mother-infant dyads and compare it with the natives

Material and Methods-Design

Cross-sectional descriptive comparative study



Material and Methods

- All the medical records were reviewed and verified. ICD-10 codes are used for comparison of diagnoses and complications
- The codes were extracted electronically from patient medical records using the hospital administrative data systems
- All admissions with more than one ICD-10 codes were discussed with the investigators and consensus was obtained to ensure agreement in number and types of complications

Material and Methods-Outcome variables

- Adolescent pregnancy rates
- Prenatal care
- Delivery mode
- Maternal complications during in-hospital care
- Prematurity
- Low birth weight, SGA rates
- Congenital malformations
- Neonatal morbidity (5 min Apgar values)
- Neonatal Intensive Care Unit (NICU) admission rate
- NICU diagnosis
- NICU stay duration

Materials and Methods-Statistical analyses, Ethical approval

- Statistical analyses were performed using the SPSS software. 22.0 (SPSS Inc., Chicago, IL, USA). Medians and interquartile ranges (IQRs) were calculated for continuous variables.
- The normality of the distribution of the variables was analysed by the Shapiro–Wilk test. The Mann-Whitney U test, and the $\chi 2$ test or Fisher exact test were used to compare differences between non-parametric continuous variables and categorical variables, respectively.
- Ethics committee approval was obtained from Marmara University, School of Medicine Ethics Committee (Date: 05.10.2018 Number: 09.2018.694).

Results-Maternal outcomes

Table 1 Demographics and characteristics of Turkish and Syrian mothers			
	Turkish	Syrian	P
n	924	924	
Maternal age, median (min-max)	28 (16-46)	23 (13-48)	<0.001
Adolescent birth, n (%)	22 (2.3)	157 (17.0)	<0.001
Gestational age in weeks, median (min-max)	39 (24-44)	37 (21-43)	<0.001
Gravida, median (min-max)	2 (1-14)	2 (1-9)	<0.001
Parity, median (min-max)	2 (1-9)	2 (1-9)	0.036
Previous abortion, median (min-max)	0 (0-12)	0 (0-4)	<0.001
Consanguinity, n (%)	194 (20.5)	110 (12.3)	<0.001
Prenatal care, n (%)	631 (67.4)	90 (9.8)	<0.001
Mode of Delivery			
Vaginal birth, n (%)	567 (59.2)	698 (75.6)	<0.001
Caesarean section, n (%)	390 (40.8)	225 (24.4)	

Results-Maternal complications

Table 3 Maternal complications of Turkish and Syrian mothers			
	Turkish	Syrian	P
Any complication	92 (9.6)	111 (12)	0.094
Erythrocyte transfusion	63 (6.6)	93 (10.1)	<0.001
Pulmonary Emboli	0 (0)	2 (0.2)	na
Hypertensive complications	27 (2.8)	17 (1.8)	0.159
Uterine related complications	9 (0.9)	7 (0.8)	0.666

Results-Maternal complications

- Syrian mothers were significantly younger than the Turkish mothers (23 vs 28 years) with a ***higher adolescent pregnancy rate*** (17.0% vs 2.3% p<0.01)
- Majority of the Syrian mothers (90.2%) received ***no prenatal care***
- ***Caesarean Section rate was lower*** in Syrian (24.4.6% vs 40.8%)
- Overall ***maternal complication rate was similar*** in Syrian and Turkish women (12.9% vs 9.9%), except for higher erythrocyte transfusion rate in Syrian women (10.1% vs 6.6%, p<0.01)

Results-Infant complications

Table 2 Outcomes and complications Turkish and Syrian neonates			
	Turkish	Syrian	P
Prematurity, n (%)	131 (13.8)	286 (35.9)	<0.001
Moderate and late preterm, n (%)	111 (87.4)	273 (95.5)	<0.001
Extremely and very preterm,, n (%)	20 (15.3)	13 (4.5)	
Birth weight, median (IQR)	3280 (2940-3595)	3125 (2820-3420)	<0.001
Low birth weight (<2500gr) (%)	77 (8.1)	75 (8.2)	0.93
Small for gestational age, n (%)	37 (4.6)	13 (2.6)	0.06
Large for gestational age, n (%)	178 (21.9)	86 (16.9)	0.02
APGAR score, 1.min, median (IQR)	9 (9-9)	9 (9-9)	0.70
APGAR score, 5.min, median (IQR)	10 (10-10)	10 (10-10)	0.37
5. min APGAR <7, n (%)	18 (1.9)	19 (2.1)	0.77
5. min APGAR <4, n (%)	2 (0.2)	7 (0.8)	0.08
NICU admission, n (%)	55 (5.7)	48 (5.2)	0.59
Duration of NICU stay in days, median (IQR)	10 (3.2-20.75)	6 (3-11)	0.19
Congenital malformations, n (%)	8 (0.8)	9 (1.0)	0.75
Respiratory Problems, n (%)	35 (3.7)	26 (2.8)	0.30
Jaundice, n (%)	8 (0.8)	3 (0.3)	0.15
Metabolic Disorders, n (%)	5 (0.5)	5 (0.5)	0.96
Hematologic Disorders, n (%)	4 (0.4)	2 (0.2)	0.44
Infections, n (%)	13 (1.4)	11 (1.2)	0.75
Hypoxic Ischemic Encephalopathy, n (%)	4 (0.4)	3 (0.3)	0.75
Inter-cranial hematoma, n (%)	1 (0.1)	2 (0.2)	0.54
Cardiac Abnormalities, n (%)	3 (0.3)	3 (0.3)	0.97
Patent Ductusarteriosus, n (%)	3 (0.3)	3 (0.3)	0.97
Necrotizing Enterocolitis, n (%)	2 (0.2)	2 (0.2)	0.97
Retinopathy of prematurity, n (%)	1 (0.1)	1 (0.1)	0.98

Results-Infant complications

- ***Prematurity was more common*** among Syrian infants (35.9% vs 13.8%, p<0.001)
- ***Moderate and late preterm infants were significantly higher*** in the refugee group (95.5% vs 87.4%, p<0.001)
- ***Median birth weight of Syrian babies was significantly lower*** than of Turkish babies (3125 gr vs 3280 gr), but the ***incidence of low birth weight and small for gestational age infants were similar*** between the two groups
- The rate of congenital malformations (1.0% vs 0.8%), neonatal intensive care unit (NICU) admission rates (5.2% vs 5.7%) or NICU stay duration was not different between the two groups

Discussion

In line with our findings

- Adolescent pregnancy rate was very similar to a recent study conducted in Ankara (17% vs 3%)
- Maternal age of refugee women was also lower than the host population in the same study (median age 23 vs 27 years)
- Caesarean Section (CS) use was lower in the refugee women compared to local (36.3% vs 43.9%)
- Congenital malformations were similar (0.8%)

In contrast with our findings

- The rates of preterm birth were similar in refugee and host population in a recent study conducted in Ankara (19.3% vs 17.9%) but similar to our findings regarding higher percentage of moderate to late preterm birth in refugees

Çelik İH. Turk J Med Sci 2019

Discussion

- CS use has increased during the last 3 decades in excess of 10-15% of births which is thought to be optimal. Globally, 21% of livebirths were estimated to be by CS in 2015.

Boerma T. Lancet 2018

- Although still higher than the optimal proportion, CS use was lower in refugee women compared to locals. The literature suggests that once the women have reached the health facility, there are no obstetric reason to expect a lower use of CS
  - Informed decision making on mode of delivery
  - Indicative of a high quality of perinatal care for refugee women
  - Indicative of inadequate access to medically indicated CS

Discussion

- All systematic reviews suggest that access to perinatal care was worse among refugee women
  - Lack of knowledge and awareness of existing services
  - Difficulties with navigating health care systems
  - Lack of information about regular appointments
  - Language barriers
  - Poverty (no phone, no childcare or transport)
  - Safe housing, employment, caring for their other children

- LBW or SGA outcomes were reported with contradictory results. SGA rates were significantly higher in Ankara study

- Meta-analysis show higher odds of preterm birth among refugee women

Heslehurst, et al. BMC Med 2018

Discussion

- Literature shows that risk ratios for low birth weight, perinatal mortality, morbidity and congenital anomalies between refugee and native mother-infant dyads were more similar in countries with strong integration policies

Bollini P. Soc Sci Med 2009

Heslehurst, et al. BMC Med 2018

WHO 2018

- Refugee women were more likely to receive inadequate prenatal care, poor access, and utilization of prenatal health services

Heaman. Matern Child Health J 2013

Discussion

- Preterm birth is the most important cause of neonatal morbidity and mortality. In 2016, preterm birth and low birth weight accounted for 17% of infant deaths
  - Respiratory difficulties
  - Periventricular leukomalacia
  - Intracranial hemorrhage
  - Bronchopulmonary dysplasia
  - Patent Ductus Arteriosus
  - NEC
  - Retinopathy of Prematurity
  - Long term neurological and developmental disabilities
  - Economic consequences
- 13 million preterm births/each year worldwide
- 2/3^{rds} of preterm births are spontaneous, 1/3rd are induced due to medical reasons (preeclampsia and/or fetal growth restriction)

Van Zijl. Int J Women's Health 2016

Discussion

- **Prevention of PTB**
  - Accurate risk assessment (maternal and obstetric history)
  - High/Low maternal body mass index (BMI<17, BMI>35)
  - Smoking
  - Periodontal disease
  - Uterine anomalies
  - Previous PTB
  - Curettage history
  - Pregnancy interval (<18 mo, >60 mo)
  - Multiple gestations
  - Bacterial vaginosis
  - Cervical length

Strengths and limitations of the study

- Comparative nature of the study: The inclusion of a control group consisting of members of the host population improves the ability to test our hypotheses
- Assessing the whole universe, a comprehensive, large data set
- All the identified ICD-10 codes were reviewed and verified with record reviews to strengthen the accuracy of the findings

- The University hospital is a tertiary referral hospital so the high-risk patients may have worse outcomes which may overestimate the results.
- The results can not be extrapolated to the larger cohort of medical admissions.
- Prenatal care may have been underreported due to language barrier

Conclusions

- Similar risk ratios for perinatal morbidity, and mortality indicates strong integration policies
- Despite this, minority of refugee women received prenatal care; the risk of adolescent pregnancy and premature birth rates were higher
- Interventions should be made to ensure access to health care before and between pregnancies for all pregnant women, identify women at risk and offer treatments to prevent, wait at least 18 months between pregnancies which also has the capacity to prevent preterm birth