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# Antenatal care and perinatal outcomes of asylum seeking women and their infants

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## Abstract

**Objectives:** Asylum seekers have been highlighted as a particularly vulnerable group of expectant mothers due to complex medical and psychosocial needs, as well as the difficulties they may face in accessing care. Our aim was to examine if there were differences in the antenatal care and perinatal outcomes for asylum seeking women when compared to age- and ethnicity-matched controls delivering at the same hospital.

**Methods:** Two age- and ethnicity-matched non-asylum seeking controls were identified for each asylum-seeking woman. Electronic patient records were analysed to determine the amount of antenatal care received and neonatal outcomes.

**Results:** Thirty-four asylum-seeking women were identified who had term born infants. The median number of antenatal care episodes at the delivering hospital was significantly fewer amongst asylum-seeking women compared to controls (three vs. nine,  $p < 0.0001$ ). The median number of antenatal ultrasound examinations at the delivering hospital amongst asylum-seeking women was one (IQR 1–2), compared to three (IQR 3–4) in the controls ( $p < 0.0001$ ). The postnatal length of stay was

significantly longer for infants of asylum-seeking women (median three vs. two days,  $p = 0.002$ ). Thirty-seven percent of asylum seeking women but none of the controls required assistance from social services. There was a significant correlation between antenatal and postnatal costs for asylum seeking women ( $r = 0.373$ ,  $p = 0.042$ ), but not for controls ( $r = 0.171$ ,  $p = 0.181$ ).

**Conclusions:** The increased postnatal length of stay in the infants of asylum seeking mothers may reflect their mother's reduced antenatal care and hence insufficient discharge planning for mothers and infants with increased social needs.

**Keywords:** antenatal care; asylum seeker; cost of care; neonatal care.

## Introduction

Asylum applications have been increasing in the UK, 35,566 applications were lodged in the UK in 2019 (an increase of 21% from the previous year) [1]; 24% were women [2]. In 2019, only 28.2% of those applicants were granted asylum [1]. Despite government intentions to issue a decision within six months [3], in 2019 there were 38,756 applications that had been awaiting a decision for longer than six months (71.2% of all pending applications) [4]. Therefore, the population of female asylum seekers of childbearing age may not be as transient as is often thought.

Asylum seekers in the UK have been highlighted as a particularly vulnerable group of expectant mothers due to their complex medical and psychosocial needs, as well as the difficulties they may face in accessing care [5–7]. Whilst awaiting a decision, asylum seeking women are eligible for free NHS maternity care [8]. In accordance with national guidance, efforts should be made to provide asylum seeking women with appropriate interpreters and ensure they understand their right to maternity care [9]. Studies have reported that refugee women are at higher risk of adverse maternal and neonatal outcomes, including poorer perinatal mental health, congenital anomalies, and preterm birth [10]. Our recently reported review [11] demonstrated that, despite better health care

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services in high income countries, refugee mothers still had worse antenatal and perinatal outcomes. In many studies, asylum seeking women are grouped together with those granted refugee status and other migrants [10], despite the differences in legal rights and support those groups may access. The aim of this study was to examine if there were differences in the antenatal care and perinatal outcomes for asylum seeking women when compared to age- and ethnicity-matched controls delivering at the same hospital.

## Materials and methods

The Badgernet electronic patient record system was used to identify all women residing at a local hostel for people seeking asylum who delivered term infants at a London hospital between the 31st August 2017 and 31st July 2018. The Badgernet database was used to identify two age- and ethnicity-matched non-asylum seeking controls for each asylum-seeking woman. To select controls, a list of age- and ethnicity-matched non-asylum seeking patients was generated using the Badgernet database and Microsoft Excel random number generator used to select a patient from the list. Demographic information was collected from the electronic patient records, including maternal age, ethnicity, and comorbidities. The records were also analysed to determine the amount of antenatal care received, infant's gestational age, birth weight and head circumference at delivery, and neonatal outcome. Postnatal length of stay and level of care (postnatal ward, transitional care, special care baby unit, high dependency, or intensive care) were also determined. The National Health Service schedule of reference costs was used to estimate the costs associated with the antenatal care and postnatal care received.

Data were analysed with SPSS, using chi squared tests. Spearman's correlation coefficients were calculated to assess the strength of relationships.

### Ethical approval

Ethical approval was not required as the study analysed previously collected data, and the data were anonymised. This study was registered with the hospital's Audit Department.

## Results

Thirty-four asylum-seeking women were identified who had term born infants. The median age of the asylum-seeking women was 27 years, whereas the median age of all non-asylum seeking women booking in the time period of the study was 33 years ( $p=0.006$ ). Approximately 40% of asylum-seeking women whose care was transferred during pregnancy or who were new to the country during pregnancy had their first appointment at the hospital of delivery

within two weeks of delivering (Table 1). Eleven asylum-seeking women had had ultrasound examinations prior to booking at the hospital at which they delivered. Only 21.9% of asylum-seeking women had an existing medical condition at booking fewer than their age- and ethnicity-matched controls ( $p=0.037$ ). Fewer asylum-seeking women were receiving prescription medications at booking ( $p=0.004$ ) and were regularly taking recommended folic acid or vitamin D at booking ( $p<0.001$ ) (Table 2).

The median number of antenatal ultrasound examinations at the delivering hospital amongst asylum-seeking women was one (IQR 1–2), whereas the median number amongst the controls was three (IQR 3–4,  $p<0.0001$ ). Asylum-seeking women had fewer booking bloods taken at their delivering hospital (84.4%) compared to 98.4% of controls ( $p=0.002$ ). The median number of antenatal care episodes at the delivering hospital (including clinic and community midwifery contacts) was significantly fewer amongst asylum-seeking women compared to controls (3 vs. 9,  $p<0.0001$ ). Less than one in five asylum-seeking women (18.8%) met the WHO recommendation of eight antenatal visits (at the delivering hospital), compared to 70% of the controls. Two-thirds of asylum-seeking women were identified as requiring an interpreter, but only 15% of these women had an interpreter used at their appointments. The proportions who had pregnancy complications were similar in asylum seeking women and controls ( $p=0.245$ ).

There were no significant differences in gestational age at birth or mode of delivery between asylum-seeking women and controls, nor in birthweight, head circumference, or APGAR score at 1 min. There was no significant difference in the highest level of care received by the infants between the asylum-seeking and control groups. The proportions who had no neonatal complications were similar ( $p=0.217$ ) as was the need for NICU admission ( $p=0.850$ ). The only neonatal complication which was significantly more common was hypoglycaemia, affecting

**Table 1:** Maternal data in asylum seekers.

	n	
Transferred during pregnancy	28	87.5%
– Within UK	12	37.5%
– From outside UK with no antenatal care	13	40.6%
– From outside UK with minimal antenatal care	3	9.38%
Transferred within two weeks of delivery	11	39.3%
Interpreter needed	20	62.5%
Interpreter used	3	15%

Data are shown as n (%).

**Table 2:** Maternal and neonatal outcomes by asylum seeking status.

	Asylum seekers		Controls		p-Value
BMI at booking	28.57		26.31		0.099
Comorbidities (maternal)	21.9%		37.5%		0.037
Pregnancy-related issue	34.4%		26.6%		0.245
Prescription medications (maternal)	15.6%		40.6%		0.004
Folic acid	43.8%		80.3%		<0.0001
Vitamin D	28.1%		73.4%		<0.0001
Number of antenatal scans	1	1–2	3	3–4	<0.0001
Booking bloods	84.4% done		98.4% done		0.002
Number of antenatal care episodes	3	2–5.25	9	7–11	<0.001
Meeting WHO recommendations of 8 AN visits	6	18.8%	45	70.3%	
Gestation at birth	39.74		40.13		0.175
Mode of delivery					0.060
ELCS	3.1%		4.7%		
EMCS	15.6%		23.4%		
Forceps	3.1%		6.3%		
Vaginal	53.1%		60.9%		
Ventouse	25.0%		4.7%		
Birthweight z-score	−0.132		0.0520		0.349
Head circumference z-score	−0.377		−0.460		0.180
APGAR at 1 min	9	9–9	9	8–9	0.653
Neonatal care required	13	40.625%	18	28.125%	
Outcome					0.718
HDU	3.1%		4.7%		
NICU	3.1%		3.1%		
SCBU	12.5%		9.4%		
TC	9.45		3.1%		
Ward	71.9%		79.7%		
Neonatal conditions					
None	59.4%		71.9%		0.217
Suspected sepsis	28.1%		20.3%		0.391
Respiratory	12.5%		7.8%		0.458
Congenital anomaly	9.4%		4.7%		0.371
Jaundice	9.4%		4.7%		0.371
Hypoglycaemia	6.3%		0%		0.043
Length of stay, days	3	2–5	2	1–3	0.002

Data are shown as median, % or median (IQR). IQR, interquartile range; ELCS, elective caesarian section; EMCS, emergency caesarian section; APGAR, appearance, pulse, grimace, activity and respiration; HDU, high dependency unit; NICU, neonatal intensive care unit; SCBU, special care baby unit; TC, transitional care.

6.3% of infants in the asylum-seeking group compared to none in the control group ( $p=0.043$ ). The postnatal length of stay was significantly longer for asylum-seeking women and their infants (median three vs. two days,  $p=0.002$ ). Thirty-seven percent of asylum seeking women required assistance from social services, but none of the controls (Table 2).

The median estimated cost of all antenatal care recorded was £1,566.68 for the asylum-seeking group, significantly lower than the median of £4,700.04 for the control group ( $p=0.002$ ). There was no significant difference in the median (IQR) estimated cost of delivery between the two groups. The median estimated postnatal cost was higher for asylum seekers than controls (£906.81 vs. £604.54,  $p=0.034$ ) (Table 3).

There was a significant correlation between antenatal and postnatal costs for asylum seeking women ( $r=0.373$ ,  $p=0.042$ ), but not for controls ( $r=0.171$ ,  $p=0.181$ ).

## Discussion

We have demonstrated that asylum seeking women received significantly less antenatal care than non-asylum seeking women. There were no significant differences in neonatal outcomes, other than neonatal hypoglycaemia being more common in the asylum-seeking group. The asylum-seeking group, however, had a significant longer postnatal length of stay.

**Table 3:** Costs of care by asylum seeking status.

Cost category		Asylum seekers	Controls	p-Values
Antenatal	Median	£1,566.68	£4,700.04	0.002
	IQR lower	£1,117.41	£3,965.67	
	IQR upper	£2,796.41	£5,434.42	
Delivery	Median	£1,567.75	£1,567.75	0.191
	IQR lower	£1,567.75	£1,567.75	
	IQR upper	£1,637.49	£2,677.59	
Postnatal	Median	£906.81	£604.54	0.034
	IQR lower	£604.54	£302.27	
	IQR upper	£1,511.34	£906.81	

Data are shown as median (IQR).

Refugees and other migrants have repeatedly been found to have inadequate or late antenatal care [12–14], which is in keeping with our findings that asylum-seeking women had fewer antenatal care episodes and fewer antenatal ultrasound examinations at their delivery hospital, as well as being less likely to have had standard booking blood tests. A number of studies have identified worse perinatal outcomes for refugees and asylum seekers [10, 15], including increased neonatal morbidity [16] and mortality [17] and preterm birth [18]. Although our study did not find any significant differences in neonatal outcome, we did find that asylum-seeking women and their infants had a longer postnatal hospital admission than the controls. This may reflect the time taken for appropriate discharge arrangements to be made in partnership with social services as 37.5% of the asylum seeking women required assistance from social services, compared to none of the controls.

In this study, we identified that asylum-seeking women's cost of care was lower antenatally than the controls, this was due to them having fewer antenatal appointments and ultrasound examinations. The postnatal cost of care was higher, due to longer postnatal admissions. This difference in postnatal cost of care and length of stay was not explained by delivery method or neonatal complications. We found that there was a significant correlation between antenatal and postnatal costs of care in the asylum-seeking women but not the controls. This may reflect a lack of antenatal planning and care that translated to greater input needed postnatally before the infant could be discharged home.

A strength of this study is that we were able to match each asylum-seeking woman to two controls. The women

were all living in the same area of London and all delivered term babies at the same hospital. This study was limited in the numbers of women we were able to include. Although we were able to include all asylum-seeking women residing at a known hostel for asylum seekers, there may well have been other asylum-seeking women who did not disclose their immigration status. It would have been interesting to compare the outcomes of women in a hostel for asylum seekers, who hopefully had better knowledge of and access to NHS maternity care, to those living independently. Some women in our sample had transferred into the area during pregnancy, so we did not have a complete antenatal history for them as many of their records were with other Trusts elsewhere in the country or abroad. We, however, reviewed the full patient notes to include, where possible, the amount of antenatal care they had received elsewhere as reported by the mother. Our results highlight the disruption that changes of antenatal care provider can occur during an asylum seeking woman's pregnancy, which is a common concern for charities supporting asylum-seeking women [6].

In conclusion, asylum-seeking women received fewer antenatal appointments and ultrasound examinations at their hospital of delivery than age- and ethnicity-matched controls. Their infants stayed longer in hospital than controls, despite there being no significant differences in the level of neonatal care required or the majority of neonatal complications likely reflecting their increased need for more complex discharge planning.

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**Competing interests:** Authors state no conflict of interest.

**Informed consent:** Informed consent was obtained from all individuals included in this study.

**Ethical approval:** Ethical approval was not required as the study analysed previously collected data, and the data were anonymised. This study was registered with the hospital's Audit Department.

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