Cesarean birth rates among migrants in Europe: A systematic review

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SYSTEMATIC REVIEW

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Cesarean birth rates among migrants in Europe: A systematic review

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Abstract

Background: Cesarean birth (CB) rates have increased over recent years with concerns over differences between these rates in migrant communities compared with the rates among women in their receiving country. This review aimed at summarizing the available literature regarding the incidence of CB among migrants in Europe.

Methods: A systematic search of four electronic databases was carried out, including CINAHL, MEDLINE, Scopus, and Maternity and Infant Care. Identified studies were screened and their quality assessed. Meta-analysis was undertaken using Rev Man 5.4 where sufficient data were available. Otherwise, data were synthesized narratively.

Results: From the 435 records identified in searches, 21 papers were included. Analysis shows that overall CB rates were significantly lower for Syrian refugee women compared with women in their receiving country (Turkey) and higher for Iranian migrants than women in their host country. Emergency CB rates were significantly higher for migrant women from "Sub Saharan Africa" and the "South East Asia, Asia and Pacific" region than rates in the receiving country. Statistical significance was not found between other populations.

Conclusions: This review highlights differences between CB rates in certain migrant groups in comparison with women native to their host country, which merits further investigation for potential explanations. We also identified a need to standardize definitions and population groupings to enable more meaningful analysis. This review also highlights a substantial lack of data on CB rates between different population groups that could negatively impact the provision of care.

KEYWORDS

cesarean, Europe, migrant, mode of birth, pregnancy

†Deceased.

1 | BACKGROUND

In recent years, there has been an increase in the number of cesarean births (CBs), despite spontaneous vaginal birth being advocated for as the safest method of delivery unless medically indicated otherwise.[1–5] The World Health Organisation (WHO), through rigorous review, concluded that CB rates above 10% are not associated with reductions in maternal or neonatal morbidity.[6] However, several countries report much higher rates, indicating that nonmedical factors are influencing rates.[7] Studies have shown that migrant groups have an increased risk of adverse perinatal outcomes, often including increased CB rates.[8–13] Factors such as lower socioeconomic status, lower education, language/communication barriers, availability of prenatal care, cultural expectations, trauma experienced during conflict, length of residency in a receiving country, and acculturation and confounding health issues have been suggested as contributing factors to the higher rates of CB in migrant women.[14–20]

Europe experiences unique factors that affect its migration rates. Membership in the European Union entitles European citizens to move freely between member states, thus increasing economic migration. Political instability, war, and sanctions in regions of close proximity to Europe (such as Syria, Afghanistan, and Libya) increase migration flow from such countries heading to Europe as a "gateway" to safety, opportunity, and economic well-being. This particularly affects Turkey because of its transcontinental nature and land border with Syria, and Greece and Italy because of their relatively short oversea distance to North Africa.

A systematic review and meta-analysis of caesarean birth rates among migrant women in high-resource countries has already been undertaken,[21,22] and results demonstrated that certain migrant populations had consistently higher CB rates across studies (Sub-Saharan African, Somalian, and South Asian), or higher with regard to emergency CB (eg, North African/West Asian and Latin American). Other groups had lower overall CB rates (eg, Eastern European and Vietnamese), which was attributed to the healthy immigrant effect.[23] The purpose of this review was therefore to examine studies published since these previous reviews (published in 2013 and 2016). However, unlike the previous studies which reviewed migrant women in high-income countries globally, this review focuses solely on European countries to determine whether differences in CB rates (overall, elective, and emergency) between migrant groups and native birthing people are observed in the recent European context.

2 | METHODS

2.1 | Search strategy

Searches were conducted using the following databases: CINAHL, MEDLINE, Scopus, and Maternity and Infant Care, and the search used the following sets of terms: 1. Caesarean & LSCS (Lower Segment Caesarean section) and 2. Migrant, immigrant, refugee, and asylum seeker. Terms were combined using the Boolean operators "OR" between synonyms and "AND." Next, given the number of European countries and potential ways of grouping these (eg, European Union, Mediterranean, Eastern European, and Scandinavia) it was deemed more efficient to identify studies meeting this criterion during the screening process. This approach ensured all relevant studies were retrieved and allowed for manual identification of studies reporting European data, thereby ensuring no data were excluded from the analysis because of differences in the naming of countries or regions. Search terms were searched under Title and/or Abstract fields to improve the relevance of retrieved studies. No language limitation was placed on the search. Searches were limited to papers published from 2016 onwards to update the previous review and to reflect recent trends in migration flow. Reference lists of included studies and related works were screened for the identification of potentially eligible studies. Database searches were rerun with the final search undertaken on September 2, 2021.

Identified studies were exported to reference managing software, RefWorks Legacy©, for recording citations and identifying duplicates. Eligibility assessment was undertaken in two stages: title and abstract screening, and full-text assessment. Eligibility assessment, quality appraisal, and data extraction were conducted independently by one author (VC) with samples reviewed by two authors (HS and RS), with discussion to resolve disagreement.

2.2 | Eligibility criteria

Studies were included if they were primary studies using any methods providing any data on cesarean birth among any migrant population in a receiving country within Europe. For the purpose of this review, migrants were defined as "not born in the receiving country"; therefore, only studies determining migrant status by country of birth were included, as recommended by the Reproductive Outcomes and Migration (ROAM) collaboration and Euro-Peristat.[24,25] Studies where migrant status was defined in a way that clearly did not meet this criterion were excluded,

such as those referring to "2nd generation migrants," or where the variable used to determine migrant status was "ethnicity".

2.3 | Quality assessment

Quality appraisal was undertaken to assess the risk of bias for each of the included studies. The checklist for quantitative intervention studies (which encompasses observational studies) from the National Institute for Health and Care Excellence (NICE)[26] was utilized. Checklist items were scored ++, +, −, NR (not reported), and NA (not applicable). Studies were then allocated an overall score for internal and external validity. Studies were allocated ++ and considered "good" if the majority of criteria were met and there appeared to be little or no risk of bias; designated + and considered "fair" if some criteria we fulfilled or if criteria had not been fulfilled or adequately described, but the conclusions were unlikely to be altered as a result; and "poor" if most criteria were not met and the conclusions were likely to be altered as a result.

2.4 | Data extraction

Data extraction was carried out utilizing a predetermined extraction form, which included the following: reference details, study aim, receiving country, population studied, data collection method (geographical area, data source, and data years), relevant findings, and overall comparison (migrant vs nonmigrant). The main outcomes for this review were CB rates, and the subgroups were elective or emergency CB.

2.5 | Population groupings

Once countries with available data had been determined, migrant populations were grouped using Global Burden of Disease (GBD) classifications[27] with the exception of Turkey. Because of Turkey's unique status of being transcontinental and a gateway for the influx of most recent migrations, and because it had been considered European when screening papers for review, we continued to consider it European when analyzing data, rather than including it within the GBD grouping of "Middle East and North Africa region." Resulting population groups for data extraction and synthesis were as follows: "Europe and Central Asia region," "Middle East and North Africa region," "Sub-Saharan Africa region," and "Southeast Asia, East Asia & the Pacific region".

2.6 | Data synthesis

Where the included data were deemed sufficiently similar for statistical analysis, Rev Man 5.4 was used for collating and synthesizing through meta-analysis. Otherwise, data were synthesized narratively.

For data originally provided as a percentage, crude values were calculated to allow for inclusion in analysis. Estimates for dichotomous outcomes of interest were expressed as odds ratios (OR) and 95% confidence intervals (CI). A fixed-methods model was applied where statistical heterogeneity was less than 50% and random effects were above this threshold using I^2 statistics. Where data were available, subgroup analysis for regions was carried out based on elective or emergency CBs. A sensitivity analysis was carried out for studies that were graded as good quality.

3 | RESULTS

A total of 435 studies were identified through database searches, with 269 remaining once duplicates were removed. Title and abstract screening excluded 215 papers, and one paper could not be obtained. One additional paper was identified for full-text assessment through searching reference lists of included studies, resulting in full-text assessment being carried out on 54 papers in total. Twenty-one papers were included in the final review and analysis.[28–48] Figure 1 illustrates the selection process, the number of studies identified and excluded at each stage, and the reasons for exclusion, in line with the PRISMA 2020 statement.[49] Table 1 provides details of included study characteristics.

After quality assessment, 13 studies were deemed to be of "good" quality, whereas the remaining eight were graded as "fair." Studies were designated as "fair" largely because of adjustments not being made for confounding factors that are known to impact CB rates such as maternal age. No studies were considered to be of poor quality. Of the included studies, no study provided any qualitative data about cesarean birth. Included studies were carried out in 11 host countries: Turkey (6), France (3), Germany (2), Finland (2), Norway (2), Denmark, Greece, Iceland, Italy, Portugal, and Sweden. The migrant population focus and grouping of populations was different across most papers. Sufficient data were available to conduct analysis on the outcomes of migrants from "European and Central Asia" (Denmark, Finland, Former Yugoslavia, Germany, Iceland, Norway, Poland, Romania, Russia, Sweden, Turkey, "Eastern European," "Europe and Central Asia," and "Europe excluding France"),

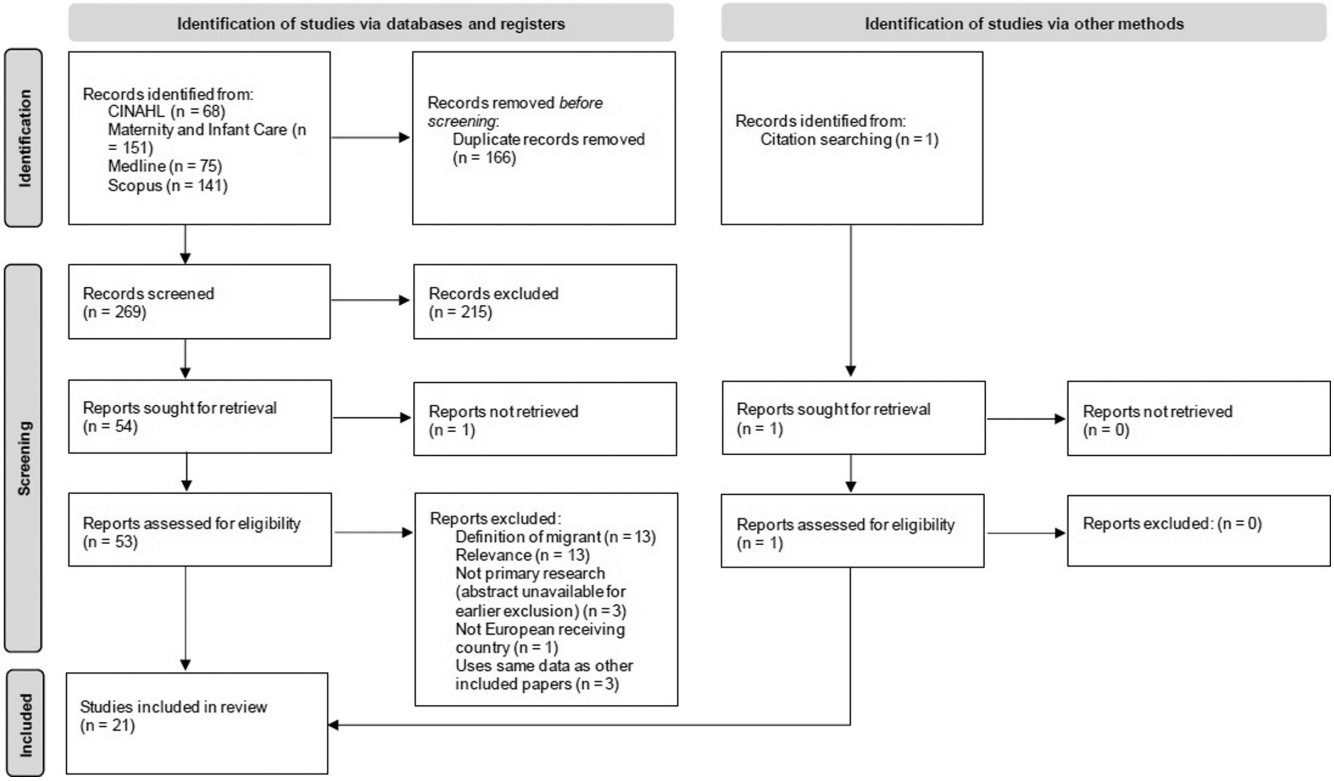

FIGURE 1 PRISMA diagram of study selection.

"Middle East and North Africa" (Afghanistan, Iran, Iraq, Lebanon, Morocco, Syria, "Kurdish," and the groupings "Middle East," "North Africa," "North Africa and Middle East"), "Sub-Saharan Africa" (Ethiopia, Somalia and "Sub Saharan Africa"), "Southeast Asia, East Asia & the Pacific" (China, Philippines, South Korea, Thailand, Vietnam and "Southeast Asia, East Asia & the Pacific") regions based on groupings from GBD classifications. All six studies undertaken in Turkey focused on Syrian refugees. This allowed for further analysis of this specific migrant group because of the availability of these data, an additional focus which we believe is justified, because of the contemporary issues surrounding this particular migrant population.

3.1 | Europe and Central Asia region migrants

This was the largest group within the review and consisted of six papers reporting data on 20 population groups for 11 named countries and three geographical regions ("Europe excluding France," "Europe and Central Asia," and "Eastern European"). Analysis of the data on each population showed lower CB rates for migrants. However, there was no significant difference in OR for overall CB (OR 0.93 [95% CI 0.85-1.02]; 6 studies, 20 population groups), elective CB (0.93 [0.80-1.07]; 4 studies, 17 population groups), or emergency CB rate (0.93 [0.87-1.00]; 6 studies, 19 population groups) between migrant groups and receiving country women. This is represented in Figures 2–4, respectively.

3.2 | Middle East and North Africa region migrants

No significant difference in CB rate is shown in the group as a whole for overall (OR 0.89 [95% CI 0.70-1.12]; 12 studies, 20 population groups), elective (0.82 [0.56-1.22]; 4 studies, 11 population groups), or emergency (0.83[0.62-1.10]; 6 studies, 13 population groups) CB rates (Figures 5–7, respectively). However, specific populations within the group did demonstrate significant differences. The two papers reporting data for Iranians, Iranians in Sweden[36] and Iranians in Denmark,[43] showed a significantly higher overall CB rate among migrant women OR 2.05 (95%CI 1.96-2.15) and1.77 (1.54-2.04), respectively, which was largely attributable to elective CB rates 2.37 (2.23-2.51) and 1.93 (1.55-2.40).

Six papers provided data on total CB rate of Syrian refugees in Turkey and so were analyzed further, as significant differences were indicated when analyzed alongside the rest of the regional groups. This group showed a significantly lower CB rate when compared to the Turkish population (OR 0.60 [95% CI 0.47-0.76]; Figure 8).

TABLE 1 Characteristics of included studies.

Study	Host country	Data collection method (geographical area, data source, time period)	Study population	Overall findings CS rate migrants vs nonmigrants	Quality
Bastola et al (2019)	Finland	National, national birth register and hospital discharge registers, Jan 2004-Dec 2014	1275 migrants (Russian, Somali, Kurdish) vs 243 general population. Only the most recent birth considered for women who delivered multiple times during study period.	Mixed	Good
Bozorgmehr et al (2018)	Germany	Local, hospital records, 2010-2016	569 asylum seekers (country of origin not specified) vs 19 295 German.	Lower	Fair
Breckenkamp et al (2019)	Germany	Local, interviews linked to hospital database records, 12-month period 2011/12	205 migrants (Turkish, Lebanese) vs 1208 German. Nulliparous, singleton, vertex pregnancy, ≥37 weeks' gestation only.	Lower	Good
Demirci et al (2017)	Turkey	Local, hospital records, June-Dec 2015	545 Syrian refugee vs 545 Turkish (subsequent delivery). Singleton, live births only.	Lower	Fair
Erenel et al (2017)	Turkey	Local, hospital records, January 2013-January 2016	300 Syrian refugee vs 300 Turkish women. Singleton pregnancy.	Lower	Fair
Eslier et al (2020)	France	Local, hospital records, 2008 and 2014	2008—272 migrants vs 2766 French 2014—385 migrants vs 2616 French (Migrants grouped as Europe excluding France, North Africa, Sub-Saharan Africa, Other) Excluded <22 weeks' gestation, women with multiple pregnancies.	Higher	Good
Guðmundsdottir et al (2021)	Iceland	National, birth registry, 1997-2018	8158 migrants (grouped on country of birth's Human Development index scores) vs 84 245 Icelandic Singleton births. Excluded <22 weeks' gestation, and birthweight <500 g.	Mixed	Good
Jatta et al (2021)	Norway	National, birth register, population register for country of origin 2013-2017	36 180 migrants (maternal region of origin grouped by Global Burden of Disease classification) vs 98 247 Norwegian women Singleton births. Excluded gestation <20 weeks or > 43 weeks, placenta abruption, placenta praevia, fetal presentation incompatible with vaginal birth.	Mixed	Good
Juarez et al (2017)	Sweden	National, birth register linked to 3 other national register for identification of country of origin, socioeconomic information, adoptee mothers, January 1, 1999-31 December	268 320 "foreign born" (Finland, Norway, Denmark, Germany, Poland, Syria, Iraq, Iran, Lebanon, Turkey, F. Yugoslavia, Ethiopia, Somalia, India, South Korea, Thailand, Chile, "Rest") vs. 1, 042, 565 Swedish. Excluded birthweight unlikely for gestational age, women with missing information.	Mixed	Good
Kana et al (2019)	Portugal	National, birth register and population statistics, 1995-1999, 2000-2004, 2005-2009, 2010-2014	1995-1999: 16104 non-Portuguese vs 543 925 Portuguese 2000-2004: 36063 non-Portuguese vs 533 144 Portuguese 2005-2009: 49310 non-Portuguese vs 472 424 Portuguese 2010-2014: 44491 non-Portuguese vs 409, 703 Portuguese Livebirths. Excluded records with missing maternal nationality, missing birthweight or registered as <500 g or > 600 g	Higher	Good

(Continues)

TABLE 1 (Continues)

Study	Host country	Data collection method (geographical area, data source, time period)	Study population	Overall findings CS rate migrants vs nonmigrants	Quality
Kiyak et al (2020)	Turkey	Local, hospital records, January 2016-January 2017	616 Syrian refugees vs 940 Turkish Singleton pregnancies.	Lower	Fair
Linard et al (2019)	France	Regional, PreCARE cohort data, 2010-2012	1500 women from Sub-Saharan Africa vs 2206 French. Excluded women <18 years, gestation <26 weeks	Higher	Good
Mæland et al (2019)	Norway	Local, hospital records, January 2009-December 2015	2364 "immigrants" (from 96 countries grouped as Eastern Europe, Middle East, South America, Asia, Africa, Western) vs 7028 Norwegian. Robson Group 1 women only.	Mixed	Good
Ozel et al (2018)	Turkey	Local, hospital records, January 2015-December 2015	576 Syrian refugee vs 576 Turkish (first Turkish woman to give birth after each Syrian refugee enrolled).	No difference	Fair
Poncet et al (2020)	France	Local, DSAFHIR study data (Rights and Health of Housed Migrants and Refugee Women), 2017	242 migrant women reporting 370 deliveries. Sample of eligible women from DSAFHIR data.	No comparison	Fair
Rasmussen et al (2019)	Denmark	National, birth register linked to other national registers, 2004-2015	25 198 births to the 19 largest "immigrant" groups (Ex Yugoslavia, Polan, Turkey, Iraq, Germany, Norway, Sweden, Romania, China, Philippines, Thailand, Pakistan, Somalia, Vietnam, Lebanon, Iceland, Iran, Afghanistan, Morocco) vs 272 888 Danish. Live and stillborn singleton births ≥22 weeks' gestation.	Mixed	Good
Sdona et al (2019)	Greece	Local, hospital records, January 2010-December 2014	1971 "immigrant" (grouped as High HDI, Medium HDI, Low HDI) vs 5154 Greek Women from "very high HDI" countries excluded from further analysis.	Lower	Good
Seghieri et al (2020)	Italy	Regional, heath register, January 2012-December 2017	105 111 "High Migration Pressure Country" migrants vs 6207 "Highly Developed Country" migrants and 581 073 Italian women.	No difference	Good
Tasa et al (2021)	Finland	Local (for undocumented), national for comparison, medical records, 2014-2018	62 pregnancies from 60 undocumented migrant women vs national data on 47 274 women.	No difference	Good
Turkay et al (2020)	Turkey	Local, hospital records, January 2016-July 2017	620 Syrian refugee women vs 7950 Turkish women. Excluded women with chronic disease, multiple pregnancies, intrauterine fetal death, and those with missing data.	Lower	Fair
Vural et al (2021)	Turkey	Local, hospital records, January 2013-December 2018	8103 Syrian refugee women vs 47 151 Turkish women. Singleton births	Lower	Fair

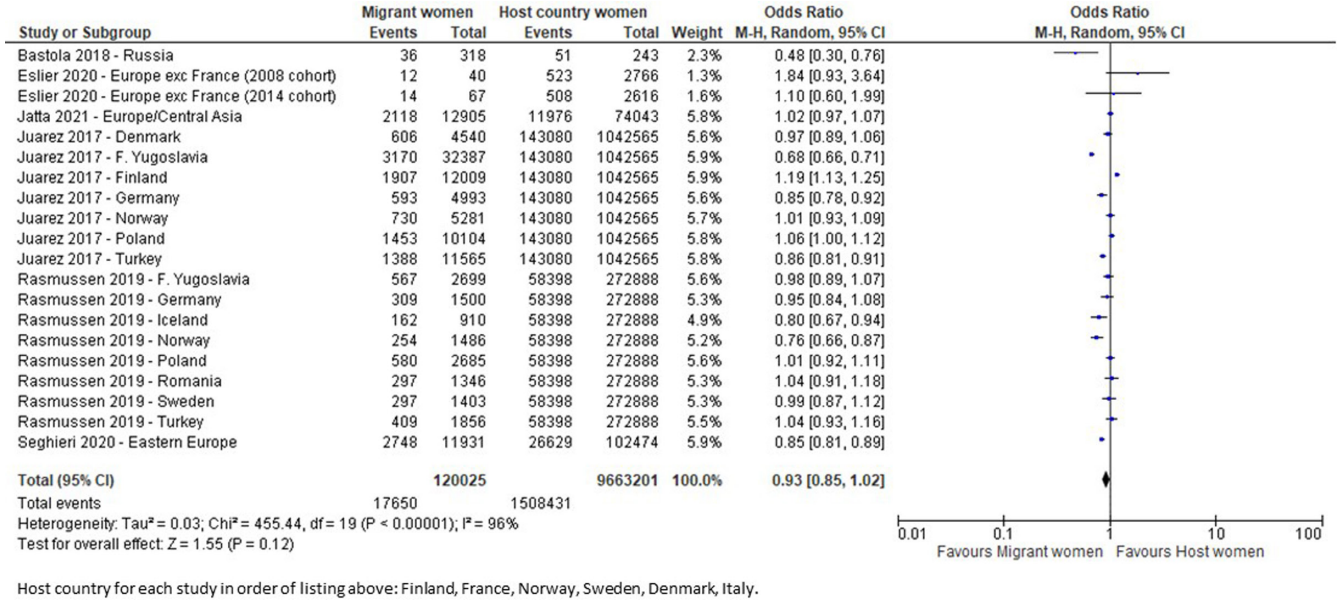

FIGURE 2 Overall cesarean section rates of Europe and Central Asia region migrant populations compared with host country women.

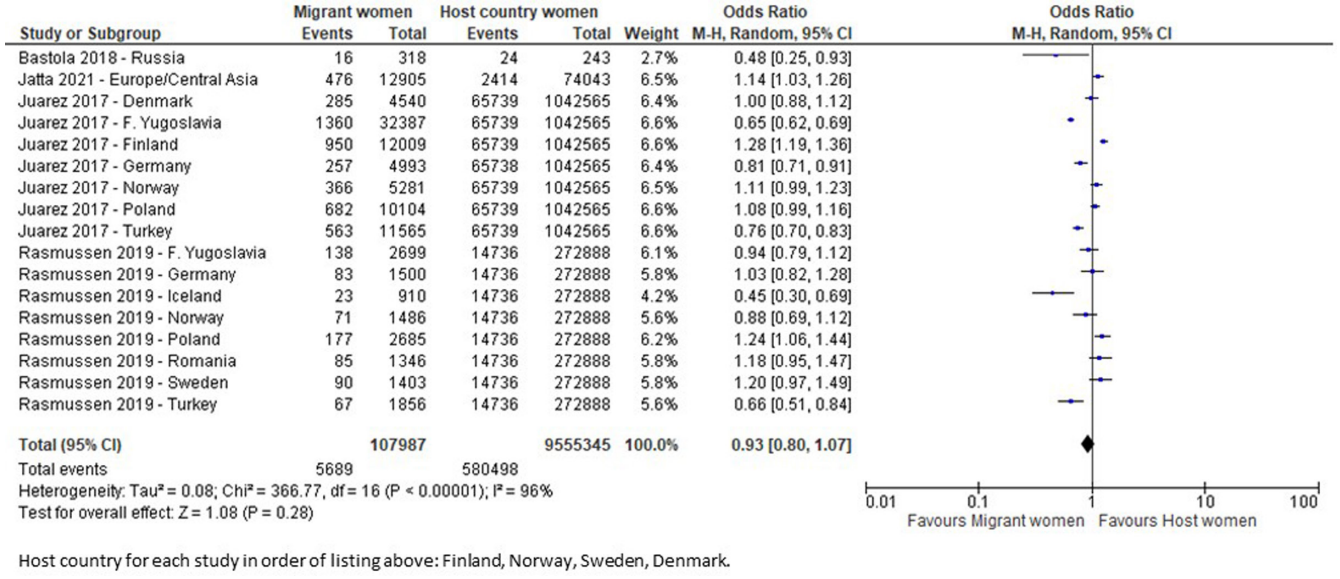

FIGURE 3 Elective cesarean section rates of Europe and Central Asia region migrant populations compared with host country women.

3.3 | Sub-Saharan Africa (SSA) region migrants

Data available for migrants from SSA countries showed that women had a higher rate of CB (OR 1.65 [95% CI 1.29-2.11]; 7 studies, 9 population groups; Figure 9). On further examination, elective CB rate (Figure 10) shows variance between the populations included but resulted in no significant difference overall (1.02 [0.64-1.65]; 5 studies, 6 population groups); however, the emergency CB rate (Figure 11) was significantly higher for SSA migrants (1.64 [1.29-2.08]; 5 studies, 6 population groups).

3.4 | Southeast asia, east asia, and pacific region migrants

Migrant women from Southeast Asia, East Asia, and Pacific region showed no significance for the higher overall CB rate observed (OR 1.21 [95% CI 0.95-1.54]; 4 studies, 8 population groups) or lower elective CB rate (0.96 [0.77-1.21]; 3 studies, 7 population groups; Figures 12 and 13, respectively). However, the higher emergency CB rate (OR 1.51, 95% CI 1.32-1.73; 3 studies, 7 population groups) did demonstrate statistical significance (Figure 14).

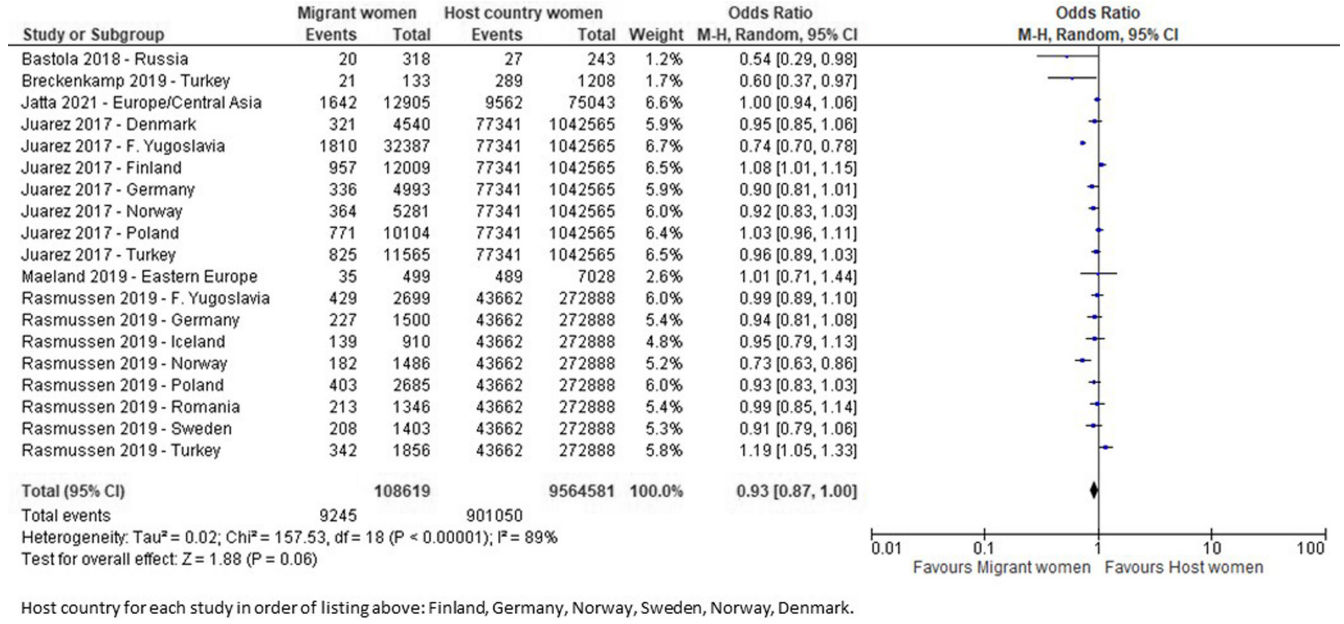

FIGURE 4 Emergency cesarean section rates of Europe and Central Asia migrant populations compared with host country women.

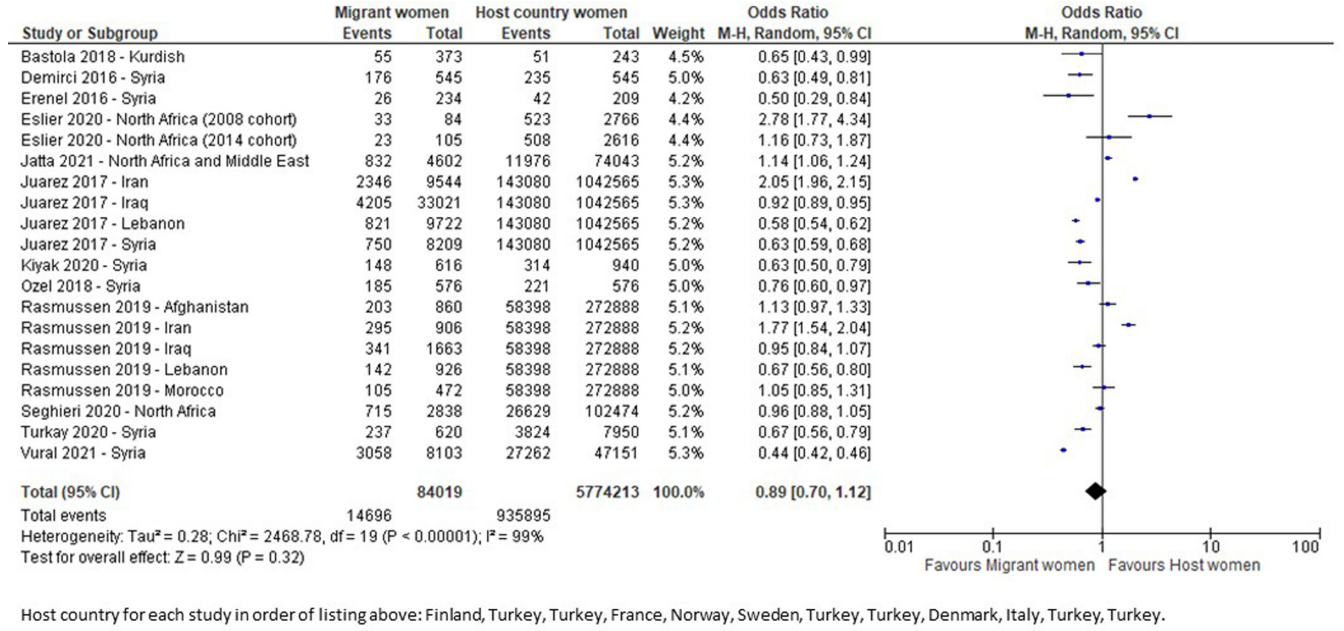

FIGURE 5 Overall cesarean section rates of Middle East and North Africa region migrant populations compared with host country women.

4 | DISCUSSION

The analysis shows that there are variations in CB rates among different migrant population groups. However, regional groups do show some similarities in rates, which replicates the findings of previous reviews despite altering the focus to within Europe.[21,22] Heterogeneity of the studies included is high for all groups; however, this is largely attributed to the differing sizes of population groups (some studies using local data and others using national registers) and to data in various studies being obtained at different times. Other causes of heterogeneity relate to how receiving countries have been grouped, and one could question whether, in fact, they should be grouped at all. In studies such as ours, countries are often grouped into regions for the purpose of analysis; however, it remains that each

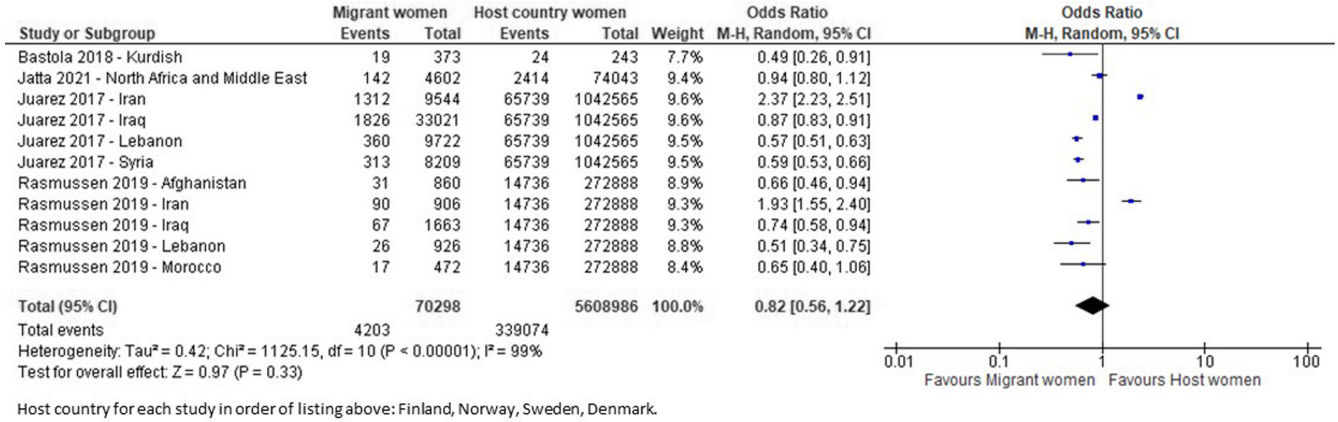

FIGURE 6 Elective cesarean section rates of Middle East and North Africa region migrant populations compared with host country women.

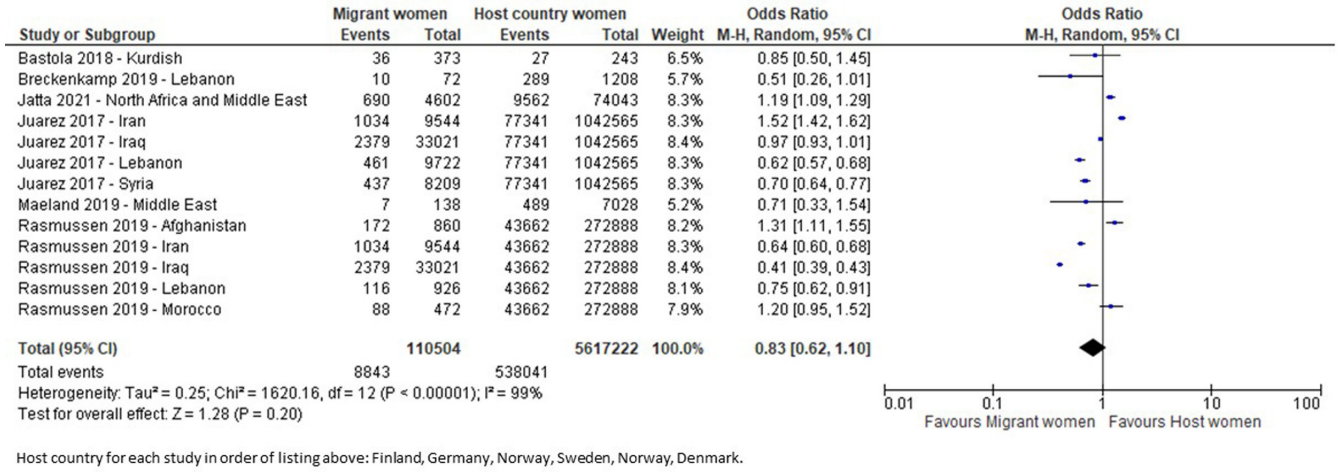

FIGURE 7 Emergency cesarean section rates of Middle East and North Africa region migrant populations compared with host country women.

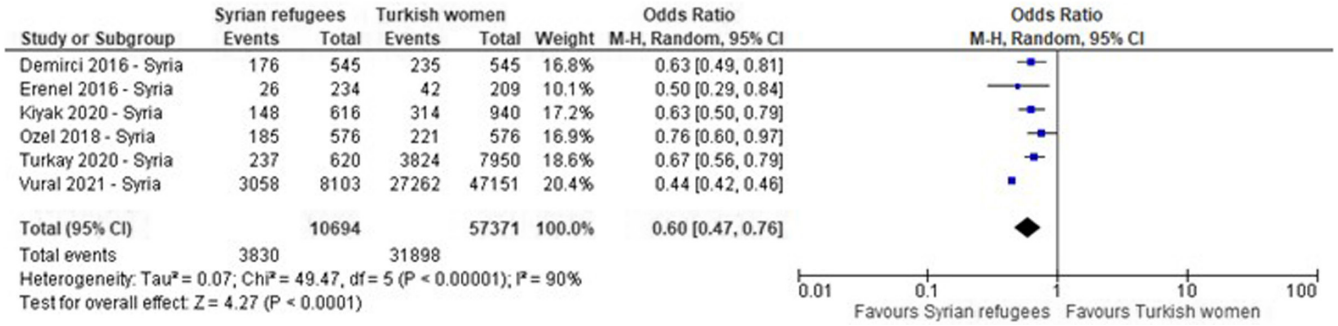

FIGURE 8 Overall cesarean section rates of Syrian refugee populations in Turkey compared with Turkish women.

migrant population is different, and each receiving country is different, and therefore, the influences that each of these has on experiences of care and behaviors could be unique to each migrant population in each receiving country. Therefore, it would be more prudent to examine countries and populations individually with detailed attention paid to sociocultural, historial, and economic contexts. However, currently, the small number of studies in this

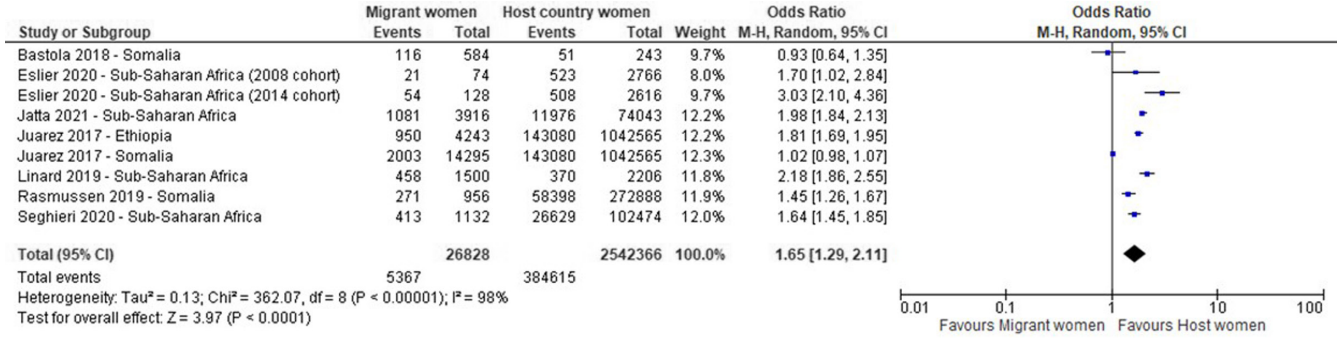

FIGURE 9 Overall cesarean section rates of Sub-Saharan Africa region migrant populations compared with host country women.

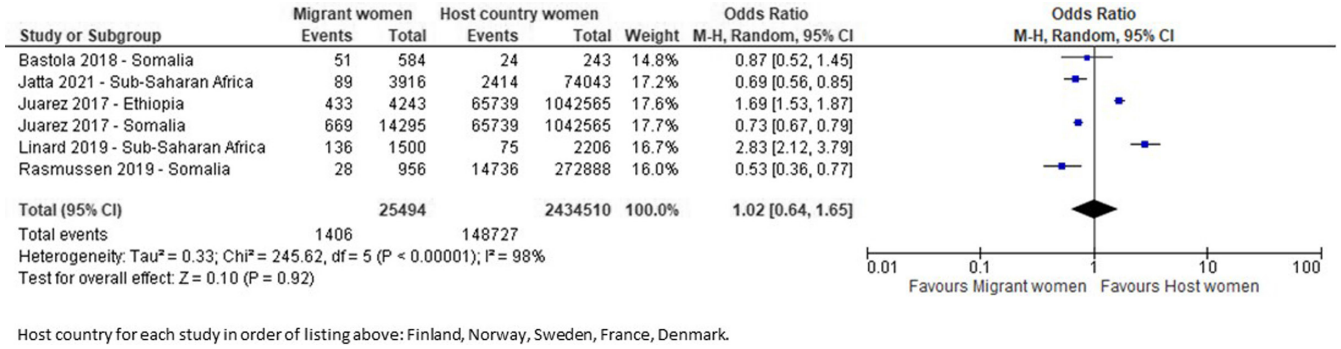

FIGURE 10 Elective cesarean section rates of Sub-Saharan Africa region migrant populations compared with host country women.

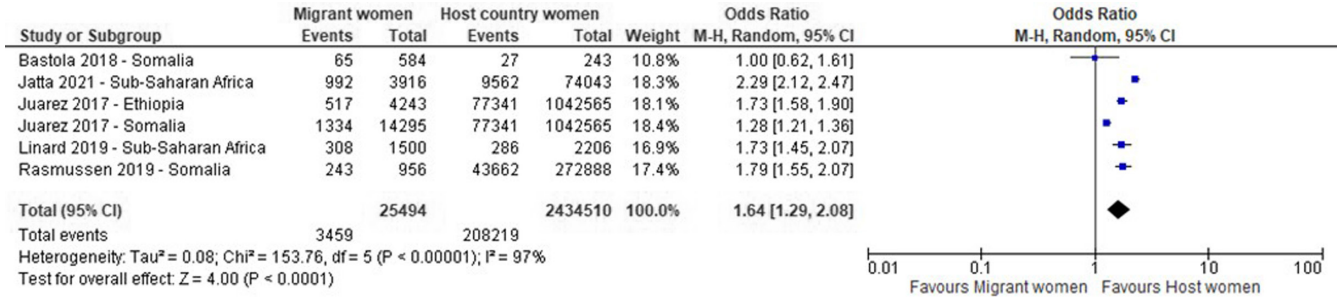

FIGURE 11 Emergency cesarean section rates of Sub-Saharan Africa region migrant populations compared with host country women.

area is a major limitation. Despite this, our analysis provides a meaningful estimation of increased or reduced CB rates that can inform practice and guide future research. Going forward, there is a need to contextualize and analyze populations independently and to avoid groupings.

There were very few receiving countries in which studies had been undertaken, making it difficult to determine whether such patterns in rates would be apparent in every receiving country. Unsurprisingly, European migrants showed no difference in CB rate compared with receiving countries overall, though some variation does exist. Significant differences were observed where the CB rate of the country/region of origin differs from that of Europe. Middle East and North Africa region migrants showed mixed results, with Iranian migrants having higher elective CB rates and Syrian refugees experiencing a lower

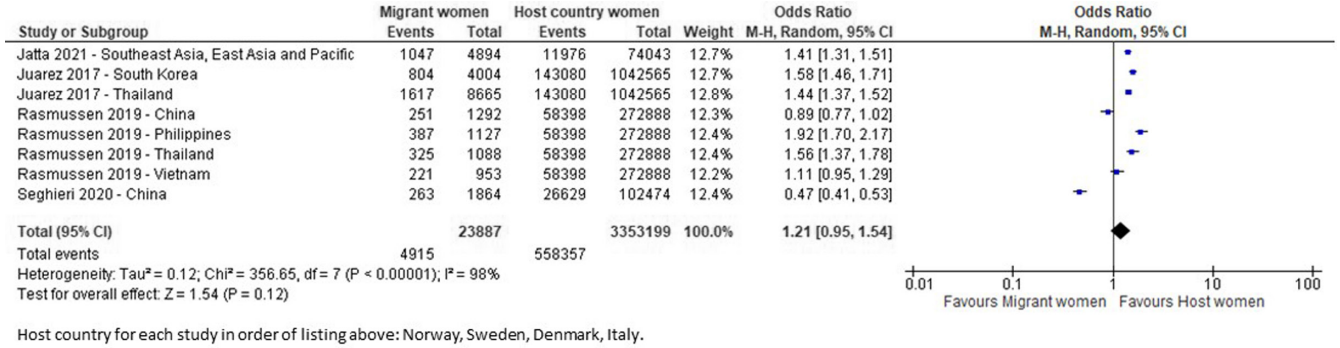

FIGURE 12 Overall cesarean section rates of Southeast Asia, East Asia and Pacific region migrant populations compared with host country women.

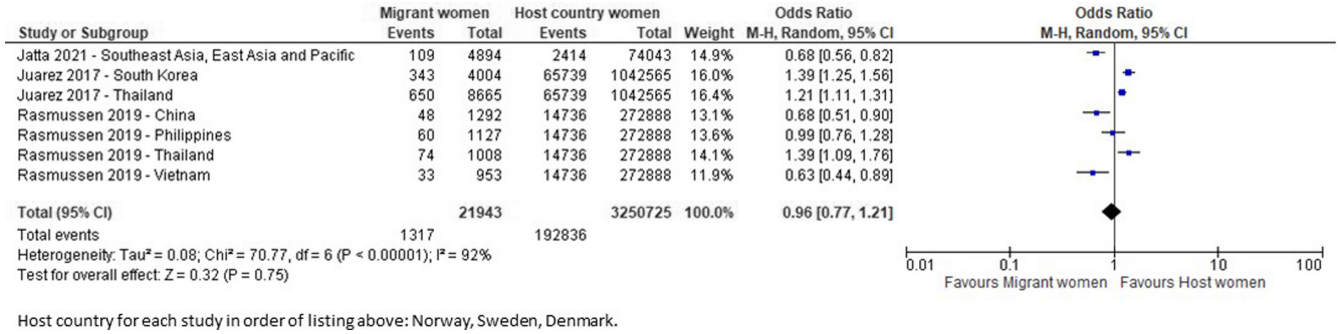

FIGURE 13 Elective cesarean section rates of Southeast Asia, East Asia and Pacific region migrant populations compared with host country women.

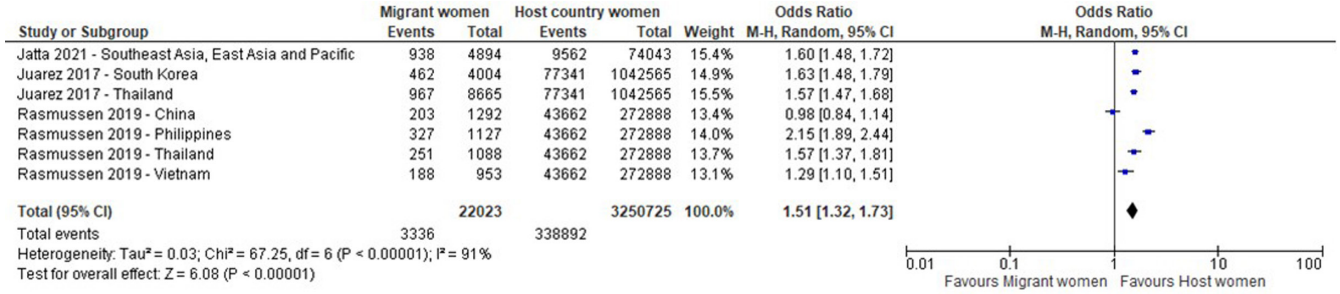

FIGURE 14 Emergency cesarean section rates of Southeast Asia, East Asia and Pacific region migrant populations compared with host country women.

rate. The high rate of CB in migrant Iranian women is in line with the home country rate of 47.9%.[4] In one study, 87% of reporting private institutes described a wide range of emerging psychosocial and cultural changes, leading to more women requesting elective CB and being in favor of birth with interventions.[50] No precise estimates are currently available for the CB rate in Syria; however, the lower rates of CB in Syrian migrants may be an example of the healthy migrant effect, despite the confounding health factors associated with living as a refugee, as only the healthiest with high access to resources are able to make the long journey to flee the conflict. It would be useful to analyze the complications experienced by this group that lead to CB, to help establish whether this pattern can be attributed to a healthy migrant effect. Conversely, this result could be attributed to missed indications for planned CB because of a lack of access to prenatal care or inadequate prenatal care. In the case of SSA migrants, the CB rate of

SSA countries is low at 3.5% compared with the average of Europe at 25%.[4] Yet, SSA migrants have a higher rate of CB than women born in their host countries, largely through increased emergency rates. A possible explanation for this is that this population maintains a low elective CB rate because of prior cultural experience and perceptions of CB,[51] yet improved accessibility to emergency CB within the receiving country should it become necessary. Alternatively, poor access to antenatal care that some SSA women experience because of legal status, or the impact of issues such as female genital mutilation (FGM) may lead to late presentation that subsequently results in increased emergency CB rates because of not having received planned care, including management through elective CB. It is also important to consider the effect that acculturation and length of residence in the host country may have on these rates and the effect of risk factors for CB such as maternal age, obesity, parity, previous CB, and implicit bias among providers. Likewise, migrants from the East Asia and Pacific regions also show higher emergency CB rates, and those from South Asia showed a higher rate overall. However, the CB rates of the countries from this region (Asia) are varied with an average of 19.5%.[4] The populations represented in our analysis were predominantly from countries with lower CB rates, which are also the least westernized, and therefore may be explained by similar factors to those of SSA.

Factors affecting migration are multiple, intersectional, and dynamic and included not only an individual's own circumstances but also wider contemporary issues on national, regional, and global scales relating to geopolitical foreign affairs and economic challenges. There are currently two significant wider issues that are highly likely to impact this area of study. First, the impact of the global COVID-19 pandemic has already resulted in fluctuating travel restrictions in most countries. Whilst many of these restrictions are beginning to ease, they have undoubtedly caused a degree of uncertainty, and the impact of this on those who would migrate to undertake work and/or study will not be known for some time. Second, the United Kingdom's exit from the European Union ("Brexit") is likely to have some effect, although the extent of this effect is currently unclear. Although none of the studies included in this review were undertaken within the United Kingdom, many of the host countries are members of the EU and so experience the privilege of "freedom of movement" between member countries.

4.1 | Study limitations and strengths

One of the key problems encountered in analyzing literature for this review was the variety of definitions surrounding the term "migrant." Many studies included second-generation migrants within their migrant population, despite such women being born within the country and not having actually undertaken migration. Others based migration on ethnicity which is a complex amalgamation of national, cultural, and linguistic traits that do not necessarily connect directly to country of birth. The methods employed to determine migration status also had varying degrees of suitability, resulting in the majority of included studies being those that used national registers of some form that linked data. This highlights the need for international consensus regarding the definition of migrant and for methods that determine this accurately. Similarly, the variety of country and regional groupings for maternal origin across studies provided no consistent approach. In this review, 10 of the papers included data from a total of 22 migrant population groups that could not be utilized for further analysis because the authors used migrant groupings incorporating data from countries covering multiple regions (eg, "Western," "Asia," and "Human Development Index (HDI) groups"). Having an agreed-upon consensus of the groupings to be used when analyzing such data is also crucial. However, as raised earlier, we also questioned such an approach and whether, in fact, named populations in specific receiving countries should be analyzed on a more individual basis because of their differing experiences. It is also worth analyzing migrant populations in terms of their reasons for migration, as there are likely to be differences between those who migrate as professional, economic migrants with secured employment and those fleeing conflict because of the impact of socioeconomic status, access to care, housing, poverty, and instability of their circumstances as a whole. Consideration of the impact of legal status on exacerbating poor outcomes is essential when exploring the experience of women who are asylum seeking, refugees, or victims of trafficking and the issues they face as a result of this. Another key consideration when defining migrants is the impact of length of residence and subsequent acculturation or agglomeration on migrant experience. It is anticipated that those who have recently migrated might exhibit behaviors and decision-making processes more similar to their country of origin, whereas those who migrated in childhood and were raised in a receiving country might more closely align with women born in that country. Adding further complexity, those who migrate more than once have additional influences. This is a potential area of work that merits further investigation. The above suggested measures would enable more accurate research relating to migrants and thus improve the potential to use high-quality evidence to inform policy and practice.

This study provides up-to-date information on CB rates among various migration groups with a focus on region/country of origin, particularly on a contemporary migrant group from Syria in Turkey. To our knowledge, this is the only systematic review to provide evidence on CB rates of Syrian women living in Turkey. It also provided data for both elective and emergency categories. Given the differing rates of CB within migrant populations and host country women, it is essential that qualitative work be undertaken to identify reasons for this. Where migrant CB rates are both high and in line with their country of origin's elective CB rate, as shown for Iranian women, there may be cultural and educational issues, which should be explored further. Such work could potentially highlight inequities in care provision and opportunities to educate groups to enable a reduction in CB rates without medical indications. Similarly, for those where migrant CB rates are lower, reasons for this should be explored to help reduce CB rate of nonmigrant women and/or to ensure that elective CB is offered to migrant women when clinically indicated. Ultimately, research is required to ensure that women are receiving the best care and birth experiences possible irrespective of their migrant status, and this can only be done through qualitative methods to identify points of potential intervention.

Limitations of our study center around the heterogeneity of the studies we retrieved and the lack of available literature. It is also possible that the studies we analyzed included "migrants" that did not meet our definition of migrant, and conversely, that we excluded studies which would have, in fact, met our criteria, had there been further clarity of on how migrant status was determined. Our review also identified the dearth of information on the CB rates of migrant mothers, particularly in highly prevalent groups such as those from Pakistan or Somalia, highlighting that further quantitative and qualitative studies in the United Kingdom are warranted.

4.2 | Conclusions

Existing studies demonstrate variance in CB rates of migrant populations within European receiving countries. However, some patterns are apparent when reviewing regional groups. Although explanations of these differing rates are offered by the individual studies, there is an absence of qualitative studies to support these explanations and to fully explore the experiences and perceptions of migrant women about CB. There is also a lack of data and information on this among migrant groups in the United Kingdom. This is an area of key importance to support decision-making and to inform future clinical practice and interventions aimed at reducing unnecessary CB.

DATA AVAILABILITY STATEMENT

Data sharing is not applicable to this article as no new data were created or analyzed in this study.

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